

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

SCHEDULE 14A

Proxy Statement Pursuant to Section 14(a) of
the Securities Exchange Act of 1934 (Amendment No.)

Filed by the Registrant ☒

Filed by a Party other than the Registrant ☐

Check the appropriate box:

- ☐ Preliminary Proxy Statement
☐ **Confidential, for Use of the Commission Only (as permitted by Rule 14a-6(e)(2))**
☒ Definitive Proxy Statement
☐ Definitive Additional Materials
☐ Soliciting Material under §240.14a-12

IDERA PHARMACEUTICALS, INC.

(Name of Registrant as Specified In Its Charter)

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

Payment of Filing Fee (Check the appropriate box):

- ☒ No fee required.
☐ Fee computed on table below per Exchange Act Rules 14a-6(i)(1) and 0-11.

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

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

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

(4) Proposed maximum aggregate value of transaction:

(5) Total fee paid:

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

(1) Amount Previously Paid:

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

(3) Filing Party:

(4) Date Filed:

IDERA PHARMACEUTICALS, INC.
505 Eagleview Blvd., Suite 212
Exton, PA 19341

NOTICE OF 2021 ANNUAL MEETING OF STOCKHOLDERS
Tuesday, June 8, 2021

Date and Time:	Tuesday, June 8, 2021 at 9:00 a.m., Eastern Time
Format:	Due to the public health impact of the coronavirus (COVID-19) pandemic and related government actions, and to support the health and well-being of our employees, stockholders, and community, Idera Pharmaceuticals, Inc.'s ("Idera," "our," "we," "us," or the "Company") 2021 annual meeting of stockholders will be held via teleconference only. You will be able to participate in the 2021 annual meeting by using the below conference call phone number and conference ID number. You will also be able to vote during the 2021 annual meeting by dialing a separate phone number (the "Voting Call Line") that will be announced during the 2021 annual meeting. Stockholders who wish to vote via the Voting Call Line will need to provide their legal proxy number to the operator, who will then record such stockholder's vote. You will not be able to attend the 2021 annual meeting in person.
Conference Call Access:	US/CANADA Participant Toll-Free Dial-In Number: (844) 882-7837 US/CANADA Participant International Dial-In Number: (574) 990-9824 Conference ID: 1120087
Items of Business:	<ul style="list-style-type: none"> • Elect two Class II directors to our board of directors for terms to expire at the 2024 annual meeting of stockholders; • Approve, by non-binding vote, the compensation of the Company's named executive officers for 2020; • Ratify the selection of Ernst & Young LLP as our independent registered public accounting firm for the fiscal year ending December 31, 2021; and • Transact any other business as may properly come before the 2021 annual meeting or any postponement or adjournment of the 2021 annual meeting. <p>The board of directors has no knowledge of any other business to be transacted at the 2021 annual meeting.</p>
Record Date:	You may vote on the matters to be presented at the 2021 annual meeting if you were a stockholder of record as of the close of business on April 12, 2021.
Proxy Voting	It is important that your shares be represented and voted at the 2021 annual meeting. Whether or not you plan to participate in the 2021 annual meeting, we urge you to vote as promptly as possible by telephone or Internet or by signing, dating, and returning a printed proxy card or voting instruction form, as applicable. If you participate in the 2021 annual meeting, you may vote your shares during the 2021 annual meeting via the Voting Call Line even if you previously voted by proxy and may revoke your proxy at any time before its exercise at the 2021 annual meeting. Please vote as soon as possible to ensure that your shares will be represented and counted at the 2021 annual meeting.

By order of the board of directors,
/s/ BRYANT D. LIM

Bryant D. Lim
*Senior Vice President, General Counsel
and Corporate Secretary*
Exton, Pennsylvania
April 28, 2021

IMPORTANT NOTICE REGARDING THE AVAILABILITY OF PROXY MATERIALS FOR THE 2021 ANNUAL MEETING OF STOCKHOLDERS TO BE HELD ON JUNE 8, 2021

Idera's Proxy Statement for the 2021 Annual Meeting of Stockholders and Annual Report to Stockholders for the fiscal year ended December 31, 2020 are available at:
<https://ir.iderapharma.com/shareholder-services/annual-meeting>

TABLE OF CONTENTS

	<u>Page</u>
<u>PROXY STATEMENT</u>	<u>1</u>
<u>INFORMATION ABOUT THE 2021 ANNUAL MEETING</u>	<u>1</u>
<u>When are this proxy statement and the accompanying materials scheduled to be sent to stockholders?</u>	<u>1</u>
<u>Why did I receive a Notice of Internet Availability instead of a full set of proxy materials?</u>	<u>1</u>
<u>Who may vote?</u>	<u>2</u>
<u>How do I vote my shares if I am a stockholder of record?</u>	<u>2</u>
<u>How do I vote my shares if I hold them in “street name?”</u>	<u>2</u>
<u>How may I change or revoke my vote?</u>	<u>3</u>
<u>What constitutes a quorum?</u>	<u>3</u>
<u>What vote is required to approve each matter and how will votes be counted?</u>	<u>3</u>
<u>How does the board of directors recommend that I vote?</u>	<u>4</u>
<u>Will any other business be conducted at the 2021 annual meeting of stockholders?</u>	<u>4</u>
<u>Who is making and paying for the solicitation of proxies and how is it made?</u>	<u>4</u>
<u>How and when may I submit a proposal for the 2022 annual meeting of stockholders?</u>	<u>4</u>
<u>Are annual meeting materials househanded?</u>	<u>5</u>
<u>PROPOSAL ONE ELECTION OF DIRECTORS</u>	<u>6</u>
<u>General Information</u>	<u>6</u>
<u>Information about our Directors</u>	<u>6</u>
<u>DIRECTOR COMPENSATION</u>	<u>10</u>
<u>CORPORATE GOVERNANCE INFORMATION</u>	<u>12</u>
<u>Board of Directors</u>	<u>12</u>
<u>Board Leadership Structure</u>	<u>12</u>
<u>Board of Directors’ Role in Risk Oversight</u>	<u>12</u>
<u>Board Committees</u>	<u>13</u>
<u>Director Independence</u>	<u>14</u>
<u>Director Nomination Process</u>	<u>15</u>
<u>Stockholder Nominees</u>	<u>15</u>
<u>Communicating with our Board of Directors</u>	<u>16</u>
<u>Code of Business Conduct and Ethics</u>	<u>16</u>
<u>Hedging Policy</u>	<u>16</u>
<u>EXECUTIVE OFFICERS</u>	<u>17</u>
<u>Information about our Executive Officers</u>	<u>17</u>
<u>SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT</u>	<u>19</u>
<u>EXECUTIVE COMPENSATION</u>	<u>21</u>
<u>Compensation Discussion and Analysis</u>	<u>21</u>
<u>Severance and Change in Control Benefits and Agreements with NEOs</u>	<u>32</u>
<u>Indemnification Agreements</u>	<u>35</u>
<u>Formal Clawback Policy</u>	<u>35</u>
<u>Compensation Committee Report</u>	<u>36</u>
<u>Summary Compensation Table</u>	<u>37</u>

	<u>Page</u>
<u>Grants of Plan-Based Awards</u>	<u>38</u>
<u>Outstanding Equity Awards at Fiscal Year-End</u>	<u>39</u>
<u>Potential Payments Upon Termination or Change in Control</u>	<u>42</u>
<u>Termination of Employment Not In Connection With or Following a Change in Control</u>	<u>42</u>
<u>Termination of Employment In Connection With or Following a Change in Control</u>	<u>43</u>
<u>CEO Pay Ratio</u>	<u>45</u>
<u>Compensation Risk Management</u>	<u>45</u>
<u>PROPOSAL TWO APPROVAL, BY NON-BINDING VOTE, OF THE NAMED EXECUTIVE OFFICER 2020 COMPENSATION</u>	<u>46</u>
<u>PROPOSAL THREE RATIFICATION OF SELECTION OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM</u>	<u>47</u>
<u>ACCOUNTING MATTERS</u>	<u>48</u>
<u>Report of the Audit Committee</u>	<u>48</u>
<u>Independent Registered Public Accounting Firm Fees</u>	<u>48</u>
<u>Pre-Approval Policies and Procedures</u>	<u>49</u>
<u>TRANSACTIONS WITH RELATED PERSONS</u>	<u>50</u>
<u>Policies and Procedures for Related Person Transactions</u>	<u>50</u>
<u>DELINQUENT SECTION 16(A) REPORTS</u>	<u>51</u>

IDERA PHARMACEUTICALS, INC.

505 Eagleview Blvd., Suite 212
Exton, PA 19341

**PROXY STATEMENT
FOR THE 2021 ANNUAL MEETING OF STOCKHOLDERS
TO BE HELD ON JUNE 8, 2021
AT 9:00 A.M. EASTERN TIME**

Idera Pharmaceuticals, Inc., a Delaware corporation, which is referred to as “we,” “us,” the “Company,” or “Idera” in this proxy statement, has made these proxy materials available to you on the Internet, or upon your request, has delivered a printed or email copy of the proxy materials to you, because our board of directors (our “board” or the “board”) is soliciting your proxy to vote at our 2021 annual meeting of stockholders, or the 2021 annual meeting. The 2021 annual meeting will be held on Tuesday, June 8, 2021, at 9:00 a.m., Eastern Time, via teleconference or at such other time and place to which the meeting may be adjourned, continued, or postponed. If the 2021 annual meeting is adjourned for any reason, then proxies submitted may be used at any adjournment of the 2021 annual meeting.

In response to the COVID-19 pandemic, the 2021 annual meeting will be held completely by remote communication. There will be no physical meeting location and the meeting will only be conducted via teleconference. Accordingly, you will not be able to attend the 2021 annual meeting in person. To participate in the meeting, please use the following conference call phone and conference ID numbers:

US/CANADA Participant Toll-Free Dial-In Number:	(844) 882-7837
US/CANADA Participant International Dial-In Number:	(574) 990-9824
Conference ID:	1120087

Stockholders who wish to vote during the 2021 annual meeting will be able to do so by dialing the separate phone number (the “Voting Call Line”) that will be announced during the 2021 annual meeting. To vote via the Voting Call Line, a stockholder must provide his or her legal proxy number to the operator, who will then record such stockholder’s vote.

INFORMATION ABOUT THE 2021 ANNUAL MEETING**When are this proxy statement and the accompanying materials scheduled to be sent to stockholders?**

We have elected to provide access to our proxy materials for the 2021 annual meeting to our stockholders via the Internet. Accordingly, on or about April 29, 2021, we will begin mailing a Notice of Internet Availability of Proxy Materials, or Notice of Internet Availability, and all other proxy materials, including the Notice of 2021 Annual Meeting of Stockholders, this proxy statement, and accompanying proxy card. For shares held in street name (held for your account by a broker or other nominee), a voting instruction form and the Annual Report on Form 10-K for the fiscal year ended December 31, 2020, or 2020 Annual Report, will be made available to stockholders on the Internet on the same date.

Why did I receive a Notice of Internet Availability instead of a full set of proxy materials?

Pursuant to rules adopted by the U.S. Securities and Exchange Commission, or SEC, we are providing access to our proxy materials over the Internet rather than printing and mailing the proxy materials. We believe electronic delivery will expedite the receipt of materials and will help lower our costs and reduce the environmental impact of our 2021 annual meeting materials. Therefore, a Notice of Internet Availability will be mailed to holders of record and beneficial owners of our common stock starting on or around April 29, 2021. The Notice of Internet Availability will provide instructions as to how stockholders may access and review the proxy materials, including the Notice of Annual Meeting, proxy statement, proxy card, and 2020 Annual Report, on the website referred to in the Notice of Internet Availability or, alternatively, how to request that a copy of the proxy materials, including a proxy card, be sent to them by mail. The Notice of Internet Availability also will provide voting instructions. In addition, stockholders of record may request to receive the proxy materials in printed form by mail or electronically by e-mail on an ongoing basis for future

stockholder meetings. Please note that while our proxy materials are available at the website referenced in the Notice of Internet Availability, and our Notice of Annual Meeting, proxy statement, and 2020 Annual Report are available on our website, no other information contained on either website is incorporated by reference in, or considered to be a part of, this document.

Who may vote?

Holders of record of our common stock as of the close of business on April 12, 2021, the record date for the 2021 annual meeting, are entitled to vote on each matter properly brought before the 2021 annual meeting. Holders of our common stock will be entitled to one vote for each share of common stock held as of the record date. As of the close of business on April 12, 2021, the record date for the 2021 annual meeting, we had 50,033,297 shares of common stock outstanding.

How do I vote my shares if I am a stockholder of record?

If you are a stockholder of record (meaning that you hold shares in your name in the records of our transfer agent, Computershare Trust Company, N.A., and that your shares are not held in “street name” by a bank or brokerage firm), you may vote your shares in any one of the following ways:

- *By internet.* To vote over the internet through services provided by Computershare Trust Company, N.A., please go to the following website: <http://www.investorvote.com/IDRA> and follow the instructions at that site for submitting your proxy. If you vote over the internet, you do not need to complete and mail your proxy card.
- *By telephone.* To vote by telephone through services provided by Computershare Trust Company, N.A., call 1-800-652-VOTE (8683), and follow the instructions provided on the proxy card that accompanies this proxy statement. If you vote by telephone, you do not need to complete and mail your proxy card.
- *By mail.* If you requested printed proxy materials, you need to complete, date and sign the proxy card that accompanies this proxy statement and promptly mail it in the enclosed postage-prepaid envelope. You do not need to put a stamp on the enclosed envelope if you mail it from within the United States. If you are mailed or otherwise receive or obtain a proxy card, and you choose to vote by telephone or by Internet, you do not have to return your proxy card.
- *During the 2021 Annual Meeting.* If you participate in the 2021 annual meeting, you may vote via the Voting Call Line during the 2021 annual meeting. The phone number for the Voting Call Line will be announced during the 2021 annual meeting. A stockholder who wishes to vote via the Voting Call Line will be required to provide his or her legal proxy number to the operator, who will then record such stockholder’s vote.

Your proxy will only be valid if you complete and return the proxy card, vote by telephone, or vote over the internet during or before the 2021 annual meeting. The persons named in the proxy card will vote the shares you own in accordance with your instructions on your proxy card, in your vote by telephone, or in your vote over the internet. If you return the proxy card, vote by telephone, or vote over the internet, but do not give any instructions on a particular matter described in this proxy statement, the persons named in the proxy card will vote the shares you own in accordance with the recommendations of our board of directors.

How do I vote my shares if I hold them in “street name”?

If the shares you own are held in “street name” by a bank or brokerage firm, your bank or brokerage firm, as the record holder of your shares, is required to vote your shares according to your instructions. In order to vote your shares, you will need to follow the directions that your bank or brokerage firm provides to you. Many banks and brokerage firms solicit voting instructions over the internet or by telephone. Even if your shares are held in street name, you are welcome to participate in the 2021 annual meeting. If your shares are held in street name, you may not vote your shares during the 2021 annual meeting unless you obtain a “legal proxy,” executed in your favor, from the holder of record (i.e., your bank or brokerage firm). If you hold your shares in street name and wish to vote via the Voting Call Line during the 2021 annual meeting, please contact your bank or brokerage firm before the 2021 annual meeting to obtain the necessary proxy

from the holder of record. You must then submit the legal proxy to the Company by 5:00 p.m., Eastern Time, on June 7, 2021. Legal proxies may be submitted: by mail to Corporate Secretary, Idera Pharmaceuticals, Inc., 505 Eagleview Boulevard, Suite 212, Exton, Pennsylvania 19341; or by e-mail to legal@iderapharma.com.

If the beneficial owner does not provide voting instructions, banks and brokerage firms cannot vote the shares with respect to “non-routine” matters, but can vote the shares with respect to “routine” matters. “Broker non-votes” occur when a beneficial owner of shares held in street name fails to provide instructions to the bank or brokerage firm holding the shares as to how to vote on matters deemed “non-routine.” We believe Proposal Three (the ratification of the selection of our independent registered public accounting firm) is a “routine” matter and, as a result, we do not expect there to be any broker non-votes. Proposal One (the election of directors) and Proposal Two (the approval of, by non-binding vote, the compensation of the Company’s named executive officers for 2020) are “non-routine” matters, and banks and brokerage firms cannot vote your shares on such proposals if you have not given voting instructions.

As long as one of the matters is deemed to be a “routine” matter, proxies reflecting broker non-votes (if any) will be counted towards the quorum requirement.

How may I change or revoke my vote?

If you are a stockholder of record, even if you complete and return a proxy card or vote by telephone or over the internet, you may change or revoke your vote at any time before your proxy is exercised by taking one of the following actions:

- send written notice to our Secretary, Bryant Lim, at our address above, stating that you wish to revoke your vote;
- deliver to us another signed proxy card with a later date or vote by telephone or over the internet at a later date; or
- participate in the 2021 annual meeting and vote via the Voting Call Line during the 2021 annual meeting.

If you own shares in street name, your bank or brokerage firm should provide you with instructions for changing or revoking your vote.

What constitutes a quorum?

In order for business to be conducted at the 2021 annual meeting, a quorum must be present. A quorum consists of the holders of a majority of the shares of our common stock issued, outstanding and entitled to vote at the 2021 annual meeting.

Shares of common stock present by conference call participation or represented by proxy (including broker non-votes and shares that are abstained or withheld or with respect to which no voting instructions are provided for one or more of the matters to be voted upon) will be counted for the purpose of determining whether a quorum exists.

If a quorum is not present, the 2021 annual meeting will be adjourned until a quorum is obtained.

What vote is required to approve each matter and how will votes be counted?

The table below sets forth the vote required for each matter being submitted to our stockholders at the 2021 annual meeting to be approved and the effect that abstentions, withheld votes, and broker non-votes:

Proposal	Affirmative Vote Required	Abstentions/ Withholds	Broker Non-Votes
Election of Directors (<i>Proposal One</i>)	Plurality of votes cast by holders of common stock entitled to vote	No effect(1)	No effect
Advisory Vote on Named Executive Officer 2020 Compensation (<i>Proposal Two</i>)	Majority of common stock present or represented and voting on the matter	No effect	No effect
Ratification of Selection of Ernst & Young LLP (<i>Proposal Three</i>)	Majority of common stock present or represented and voting on the matter	No effect	N/A

-
- (1) You may vote FOR all of the director nominees, WITHHOLD your vote from all of the director nominees or WITHHOLD your vote from any of the director nominees.

Each share of common stock will be counted as one vote.

How does the board of directors recommend that I vote?

Our board of directors recommends that you vote as follows:

- FOR each of the Class II director nominees (Proposal One); and
- FOR Proposal Two and Proposal Three.

Under the Securities Exchange Act of 1934, as amended, or the Exchange Act, and related SEC regulations, the vote on executive compensation, as described in greater detail in Proposal Two, set forth elsewhere in this proxy statement, is an advisory vote, meaning it is non-binding. The vote on the ratification of the selection of Ernst & Young LLP as our independent registered public accounting firm, as described in greater detail in Proposal Three, is also an advisory vote. Our board will carefully consider the outcome of each of these votes.

Will any other business be conducted at the 2021 annual meeting of stockholders?

Our board of directors does not know of any other business to be conducted or matters to be voted upon at the 2021 annual meeting. If any other matter properly comes before the 2021 annual meeting, the persons named in the proxy card that accompanies this proxy statement will exercise their judgment in deciding how to vote or otherwise act with respect to that matter at the 2021 annual meeting.

Who is making and paying for the solicitation of proxies and how is it made?

We are making the solicitation and will bear the costs of soliciting proxies. In addition to solicitations by mail, our directors, officers, and employees, without additional remuneration, may solicit proxies by telephone, facsimile, email, personal interviews, and other means. We may engage a proxy solicitor to distribute our proxy materials and solicit proxies, and if we were to do so would pay a fee for such services and reimburse the solicitor for reasonable disbursements. We have requested that brokerage houses, custodians, nominees, and fiduciaries forward copies of the proxy materials to the persons for whom they hold shares and request instructions for voting the proxies. We will reimburse the brokerage houses and other persons for their reasonable out-of-pocket expenses in connection with this distribution.

How and when may I submit a proposal for the 2022 annual meeting of stockholders?

If you are interested in submitting a proposal for inclusion in the proxy statement and proxy card for our 2022 annual meeting of stockholders, or the 2022 annual meeting, you need to follow the procedures outlined in Rule 14a-8 of the Exchange Act. We must receive your proposal intended for inclusion in the proxy statement at our principal executive offices, 505 Eagleview Blvd., Suite 212, Exton, Pennsylvania 19341, Attention: Secretary, no later than December 30, 2021. SEC rules set standards for the types of stockholder proposals and the information that must be provided by the stockholder making the request.

If you wish to present a proposal at the 2022 annual meeting, but do not wish to have the proposal considered for inclusion in the proxy statement and proxy card or have not complied with the requirements for inclusion of such proposal in our proxy statement under SEC rules, you must also give written notice to us at the address noted above. Our bylaws specify the information that must be included in any such notice, including a brief description of the business to be brought before the annual meeting, the name of the stockholder proposing such business, and stock ownership information for such stockholder. In accordance with our bylaws, we must receive this notice (or the stockholder director nomination, see “Stockholder Nominees”) at least 60 days, but not more than 90 days, prior to the date of the 2022 annual meeting and the notice must include specified information regarding the proposal and the stockholder making the proposal.

Notwithstanding the foregoing, if we provide less than 70 days’ notice or prior public disclosure of the date of the annual meeting to the stockholders, notice by the stockholders must be received by our Secretary

no later than the close of business on the tenth day following the date on which the notice of the annual meeting was mailed or such public disclosure was made, whichever occurs first. If a stockholder who wished to present a proposal fails to notify us by this date, the proxies that management solicits for that meeting will have discretionary authority to vote on the stockholder's proposal if it is otherwise properly brought before that meeting. If a stockholder makes timely notification, the proxies may still exercise discretionary authority to vote on stockholder proposals under circumstances consistent with the SEC's rules.

Are annual meeting materials householded?

Some banks and brokerage firms may be participating in the practice of "householding" proxy statements and annual reports. This means that the banks and brokerage firms send only one copy of this proxy statement and the accompanying 2020 Annual Report to multiple stockholders in the same household. Upon request, we will promptly deliver separate copies of this proxy statement and our annual report to stockholders. To make such a request, please call Investor Relations at (877) 888-6550, write to Investor Relations, 505 Eagleview Blvd., Suite 212, Exton, Pennsylvania 19341 or email Investor Relations at ir@iderapharma.com. To receive separate copies of our annual report to stockholders and proxy statement in the future, or to receive only one copy for the household, please contact us or your bank or brokerage firm.

PROPOSAL ONE
ELECTION OF DIRECTORS

General Information

Our board of directors is divided into three classes and currently consists of three Class I directors: Vincent J. Milano, Cristina Csimma, PharmD, MHP, and Michael R. Dougherty; two Class II directors: James A. Geraghty and Maxine Gowen, Ph.D.; and two Class III directors: Mark Goldberg, M.D. and Carol A. Schafer. Each member of a class is elected for a three-year term, with the terms staggered so that approximately one-third of our directors stand for election at each annual meeting of stockholders. The Class I, Class II, and Class III directors were elected to serve until the annual meeting of stockholders to be held in 2023, 2021 and 2022, respectively, and until their respective successors are elected and qualified.

Our board of directors, on the recommendation of the members of our nominating and corporate governance committee, has nominated Mr. Geraghty and Dr. Gowen for election as Class II directors at the 2021 annual meeting. At the 2021 annual meeting, stockholders will be asked to consider the election of Mr. Geraghty and Dr. Gowen.

The persons named in the enclosed proxy card will vote to elect Mr. Geraghty and Dr. Gowen to our board of directors unless you indicate that you withhold authority to vote for the election of one or all nominees. You may not vote for more than two directors. Each Class II director will be elected to hold office until our 2024 annual meeting of stockholders and until his or her successor is elected and qualified or until his or her earlier resignation, death, or removal. Each of the nominees is presently a director and each has indicated a willingness to serve as a director, if elected. If a nominee becomes unable or unwilling to serve, however, the persons acting under the proxy may vote for substitute nominees selected by the board of directors.

Information about our Directors

Set forth below is information about each member of our board of directors, including (a) the year in which each director first became a director, (b) their age as of the 2021 annual meeting, (c) their positions and offices with our Company (if any), (d) their principal occupations and business experience during at least the past five years, and (e) the names of other public companies for which they currently serve, or have served within the past five years, as a director. We have also included information about each director's specific experience, qualifications, attributes, or skills that led our board of directors to conclude that such individual should serve as one of our directors. We also believe that all of our directors have a reputation for integrity, honesty, and adherence to high ethical standards. They each have demonstrated business acumen and an ability to exercise sound judgment, as well as a commitment of service to our Company and our board of directors.

Regrettably, in November 2020, one of our directors, Howard Pien, passed away. Mr. Pien had served on the Board since 2018. His insights and contributions to the Board and the Company will be greatly missed.

Recommendation of the Board of Directors

Our board of directors unanimously recommends that the stockholders vote FOR the election of Mr. Geraghty and Dr. Gowen as Class II directors.

Class I Directors—Terms to Expire in 2023**Cristina Csimma, PharmD, MHP***Director since 2019*

Dr. Csimma, age 62, currently serves as a board director, the chair of the nominating and corporate governance committee, and a member of the compensation committee and the audit committee of Seneca Biopharma, Inc. (Nasdaq: SNCA; formerly Neuralstem, Inc.), having been elected to its board of directors in September 2017. She also serves as the chair of the board of directors of Caraway Therapeutics since April of 2019 (executive chair in 2019) and as the chair of the board of directors of Forendo Pharma, since May 2020. Dr. Csimma also serves on advisory boards, including the Muscular Dystrophy Association Venture Philanthropy Scientific Advisory Committee since 2006; the Harvard and Brigham and Women's Hospital MRCT Center External Advisory Board since 2015; the TREAT-NMD Advisory Committee for Therapeutics (TACT) since 2009; and the Executive Oversight Board to the National Institutes of Health (NIH) NeuroNext Network since 2013. Dr. Csimma previously served as a director on the boards of Juniper Pharma (from 2010 until its acquisition by Catalent in 2018), Vtesse Pharma (from 2014 until its acquisition by Sucampo in 2017), was the executive chair and a senior advisor of Exonics Therapeutics (from 2016 to 2017), and was President, founding CEO, and board director of Cydan Inc. from 2012 to 2014. She also served on the board of directors of T1D Exchange (non-profit-Type 1 Diabetes) from 2018 to 2020 and the NIH Blueprint Neurotherapeutics Network External Oversight Committee from 2014 to 2018, was Vice President of Drug Development at Virdante Pharmaceuticals Inc. from 2009 to 2011, Principal at Clarus Ventures LLC (now Blackstone Life Science), and held roles of increasing responsibility in Clinical Development and Translational Research at Wyeth (now Pfizer), Genetics Institute, and Dana Farber Cancer Institute. Dr. Csimma holds both a Doctor of Pharmacy and a Bachelor of Science in Pharmacy from the Massachusetts College of Pharmacy and Allied Health Sciences, as well as a Master of Health Professions from Northeastern University. We believe that Dr. Csimma's qualifications to sit on our board of directors include her significant public company management and board experience and knowledge of our industry.

Michael R. Dougherty*Director since 2019*

Mr. Dougherty, age 63, currently serves as chair of our board of directors. Mr. Dougherty was executive chairman of Celator Pharmaceuticals, Inc. ("Celator") from August 2015 until July 2016; he also served as a director of Celator from July 2013 to July 2016. Mr. Dougherty previously served in a variety of senior positions in the biopharmaceutical industry, including as chief executive officer at Kalidex Pharmaceuticals, Inc.; president and chief executive officer at Adolor Corporation; president and chief operating officer at Genomics Collaborative, Inc.; president and chief executive officer at Genaera Corporation; and chief financial officer at Centocor, Inc. Mr. Dougherty currently serves on the board of directors of Trevena, Inc. (Nasdaq: TRVN) and Marinus Pharmaceuticals, Inc. (Nasdaq: MRNS), and previously served as a member of the board of directors of Foundation Medicine, Inc., Aviragen Therapeutics, Inc., Cempra, Inc., and ViroPharma Incorporated. Mr. Dougherty received a B.S. in Accounting from Villanova University. We believe that Mr. Dougherty's qualifications to sit on our board of directors include his significant public company management and board experience and knowledge of our industry.

Vincent J. Milano*Director since 2014*

Vincent Milano, age 57, has been our President and Chief Executive Officer, and a member of our board of directors, since December 2014. Prior to joining us, Mr. Milano served as chairman, president, and chief executive officer of ViroPharma Inc., a pharmaceutical company that was acquired by Shire Plc in January 2014, from March 2008 to January 2014, as its vice president, chief financial officer, and chief operating officer from January 2006 to March 2008, and as its vice president, chief financial officer, and treasurer from April 1996 to December 2005. Mr. Milano also served on the board of directors of ViroPharma from March 2008 to January 2014. Prior to joining ViroPharma, Mr. Milano served in increasingly senior roles, most recently senior manager, at KPMG LLP, an independent registered public accounting firm, from July 1985 to March 1996. Mr. Milano currently serves on the board of directors of

Aclaris Therapeutics, Inc. (Nasdaq: ACRS), a publicly traded company, and privately held VenatoRx Pharmaceuticals, Inc. Mr. Milano previously served as a director of Spark Therapeutics, Inc. and Vanda Pharmaceuticals Inc. from 2014 to 2019 and 2010 to 2019, respectively. Mr. Milano holds a Bachelor of Science degree in Accounting from Rider College. We believe Mr. Milano's qualifications to sit on our board of directors include his knowledge of our Company as our President and Chief Executive Officer, knowledge of our industry, including over 20 years of experience serving in a variety of roles of increasing responsibility in the finance department, corporate administration, and operations of a multinational biopharmaceutical company, and understanding of pharmaceutical research and development, sales and marketing, strategy, and operations in both the United States and overseas. He also has corporate governance experience through service on other public company boards.

Class II Directors—Terms to Expire in 2021

James A. Geraghty

Director since 2013

Mr. Geraghty, age 66, has served on our board of directors since July 2013 and served as chair of our board of directors from that time until April 2021. Mr. Geraghty is an industry leader with over 35 years of strategic and leadership experience, including more than 25 years as a senior member of executive teams at biotechnology companies developing and commercializing innovative therapies. From May 2013 to October 2016, Mr. Geraghty was an Entrepreneur in Residence at Third Rock Ventures, a leading biotech venture fund. From April 2011 to December 2012, he served as a Senior Vice President of Sanofi, a global healthcare company. Prior to that, he served in various senior management roles at Genzyme Corporation, a biotechnology company, from 1992 to April 2011, including as Senior Vice President, International Development and President of Genzyme Europe. Mr. Geraghty currently serves as chairman of the board of Orchard Therapeutics PLC (Nasdaq: ORTX) and Pieris Pharmaceuticals, Inc. (Nasdaq: PIRS) and as a member of the board of Voyager Therapeutics (Nasdaq: VYGR) and Fulcrum Therapeutics (Nasdaq: FULC), each a publicly traded company. He also previously served as a director of bluebird bio, Inc. and GTC Biotherapeutics, Inc. We believe that Mr. Geraghty's qualifications to sit on our board of directors include his public company board and management experience and his broad and deep knowledge of our industry.

Maxine Gowen, Ph.D.

Director since 2016

Dr. Gowen, age 62, has served as the chief executive officer and a board director of TamuroBio Inc., a privately held drug development company, since August 2019. She was the founding President and CEO of Trevena, Inc. (Nasdaq: TRVN), a publicly traded biopharmaceutical company, from November 2007 until her retirement in October 2018, and remains a member of its board of directors. Prior to joining Trevena, Dr. Gowen was Senior Vice President for the Center of Excellence for External Drug Discovery at GlaxoSmithKline plc, or GSK, where she held a variety of leadership positions during her tenure of 15 years. Before GSK, Dr. Gowen was Senior Lecturer and Head, Bone Cell Biology Group, Department of Bone and Joint Medicine, of the University of Bath, U.K. Dr. Gowen has served as a director of Akebia Therapeutics, Inc. (Nasdaq: AKBA) since July 2014, Aclaris Therapeutics, Inc. (Nasdaq: ACRS) since July 2019, and Passage Bio, Inc. (Nasdaq: PASG) since February 2021, each a publicly traded company, as well as Panorama Therapeutics, a privately-held biotechnology company. She also serves on the board of the state biotechnology industry association, Life Sciences PA and previously held a board seat in the national biotechnology industry association, BIO, from 2008 to 2018. From 2008 until 2012, Dr. Gowen served as a director of Human Genome Sciences, Inc., a publicly traded company. She received her Ph.D. from the University of Sheffield, U.K., an M.B.A. with academic honors from The Wharton School of the University of Pennsylvania, and a B.Sc. with Honors in Biochemistry from the University of Bristol, U.K. We believe that Dr. Gowen's qualifications to sit on our board of directors include her significant public company management and board experience and knowledge of our industry.

Class III Directors—Terms to Expire in 2022**Mark Goldberg, M.D.***Director since 2014*

Dr. Goldberg, age 66, has served as a member of the board of directors of ImmunoGen, Inc. (Nasdaq: IMGN) since November 2011, a member of the board of directors of GlycoMimetics, Inc. (Nasdaq: GLYC) since July 2014, a member of the board of directors of Blueprint Medicines (Nasdaq: BPMC) since June 2015, and a member of the board of directors of Walden Biosciences since March 2020. In addition, he is a member of the board of directors of the American Cancer Society, a non-profit organization.

Dr. Goldberg previously served on the board of directors of Audentes Therapeutics, Inc. from December 2017 until January 2020 and aTyr Pharma from April 2015 until December 2017. Dr. Goldberg served as advisor and medical and regulatory strategist for Synageva BioPharma Corp., a biopharmaceutical company, from October 2014 until June 2015. Prior to that, he served as the Executive Vice President for Medical and Regulatory Strategy of Synageva from January 2014 to October 2014 and as the Senior Vice President of Medical and Regulatory Affairs of Synageva from September 2011 to January 2014.

Dr. Goldberg served in a variety of senior management positions at Genzyme Corporation from 1996 to July 2011, including most recently as Senior Vice President for Clinical Development and Therapeutic Group Head for Oncology and Personalized Genetic Health from 2009 to July 2011. Prior to working at Genzyme Corporation, he was a full-time staff physician at Brigham and Women's Hospital (where he still holds an appointment) and Dana Farber Cancer Institute. He has also been an Associate Professor of Medicine at Harvard Medical School since 1996. Dr. Goldberg is a board-certified medical oncologist and hematologist and has more than 50 published papers. Dr. Goldberg holds an A.B. from Harvard College and an M.D. from Harvard Medical School. We believe that Dr. Goldberg's qualifications to sit on our board of directors include his extensive scientific and medical background, public company board experience, and extensive experience in the management and operations of pharmaceutical companies.

Carol A. Schafer*Director since December 2018*

Ms. Schafer, age 56, has served on the board of directors of Repare Therapeutics, Inc. (Nasdaq: RPTX) since March 2019, Five Prime Therapeutics, Inc. (Nasdaq: FPRX) since May 2019, and Insmed Incorporated (Nasdaq: INSM) since April 2020, each a publicly traded company. Ms. Schafer serves on the audit committee and nominating and corporate governance committee at Repare and Insmed, and on the compensation committee and nominating and corporate governance committee at Five Prime. Additionally, Ms. Schafer has served as a non-fiduciary board member of OneGoal NY, a non-profit entity, since March 2019. She also currently serves as managing partner at Hyphen Advisors, LLC, a firm that provides advisory, consulting, and board services to public and private companies and boards of directors on topics such as financing strategy and execution, financial planning and analysis, investor access and messaging, and strategic initiatives. Ms. Schafer has more than 25 years of experience in investment banking and equity capital markets, as well as in corporate finance and business development in the biopharmaceutical sector, with substantial experience financing and facilitating investor access for public and private healthcare companies. Ms. Schafer most recently served as Vice Chair, Equity Capital Markets at Wells Fargo Securities. Prior to Wells Fargo, Ms. Schafer served as Vice President of Finance and Business Development at Lexicon Pharmaceuticals. Earlier in her career, Ms. Schafer served as an Equity Capital Markets Sector Head in her role as Managing Director at J.P. Morgan. Ms. Schafer received a B.A. from Boston College and an M.B.A from New York University. We believe that Ms. Schafer's qualifications to sit on our board of directors include her extensive financial background and her many years of experience providing investment banking, equity capital markets, and strategic support to companies within the healthcare sector.

DIRECTOR COMPENSATION

We use a combination of cash and equity-based compensation to attract and retain candidates to serve on our board of directors. We do not compensate directors who are also our employees for their service on our board of directors. As a result, Mr. Milano does not receive any compensation for his service on our board of directors.

We generally review our director compensation program every two years with the advice of an independent compensation consultant. In November 2018, we modified our director compensation program, effective January 1, 2019, to increase the cash compensation for service on the board of directors from \$35,000 to \$40,000. On June 4, 2019, we modified our Scientific Advisory Committee chairperson compensation to \$8,000. With the exception of the foregoing cash compensation increase, no other changes were made to our director compensation program.

Under our director compensation program, we pay our non-employee directors retainers in cash. Each director receives a cash retainer for service on the board of directors and for service on each committee on which the director is a member. The chairperson of each committee receives higher retainers for such service. These fees are paid quarterly in arrears. The fees paid to non-employee directors for service on the board of directors and for service on each committee of the board of directors on which the director was a member during 2020 were as follows:

	Member Annual Fee	Chairperson Annual Fee
Board of Directors	\$40,000	\$70,000
Audit Committee	\$ 7,500	\$15,000
Compensation Committee	\$ 6,250	\$12,500
Nominating and Corporate Governance Committee	\$ 4,000	\$ 8,000
Scientific Advisory Committee	\$ 4,000	\$ 8,000

Our director compensation program includes a stock-for-fees policy, under which directors have the right to elect to receive common stock in lieu of cash fees. These shares of common stock are issued under our 2013 Stock Incentive Plan. The number of shares issued to participating directors is determined on a quarterly basis by dividing the cash fees to be paid through the issuance of common stock by the fair market value of our common stock, which is the closing price of our common stock, on the first business day of the quarter following the quarter in which the fees are earned. In 2020, several of our directors elected to receive shares of our common stock in lieu of cash fees as set forth in the footnotes to the Director Compensation table below.

Under our director compensation program, we also reimburse our directors for travel and other related expenses for attendance at meetings. Additionally, upon their initial election to the board of directors, new non-employee directors receive an initial option grant to purchase 23,000 shares of our common stock, and all non-employee directors, other than the chairperson, receive an annual option grant to purchase 11,500 shares of our common stock. The chairperson receives an annual option grant for 14,500 shares of our common stock. The annual grants are made on the date of our annual meeting of stockholders and fully vest one year from that date of grant. The initial options granted to our non-employee directors vest with respect to one-third of the underlying shares on the first anniversary of the date of grant and the balance of the underlying shares vest in eight equal quarterly installments following the first anniversary of the date of grant, subject to continued service as a director, and are granted under our 2013 Stock Incentive Plan. These options are granted with exercise prices equal to the fair market value of our common stock, which is the closing price of our common stock, on the date of grant and will become immediately exercisable in full if there is a change in control of our Company.

Under our retirement policy for non-employee members of the board, if a non-employee director is deemed to retire, then:

- all outstanding options held by such director will automatically accelerate and vest in full; and
- the period during which such director may exercise the options will be extended to the expiration of the option under the plan.

Under the policy, a non-employee director will be deemed to have retired if:

- the director resigns from the board or determines not to stand for re-election or is not nominated for re-election at a meeting of our stockholders and has served as a director for more than 10 years; or
- the director does not stand for re-election or is not nominated for re-election due to the fact that he or she is or will be older than 75 at the end of such director's term.

The following table sets forth a summary of the compensation we paid to our non-employee directors who served on our board in 2020.

DIRECTOR COMPENSATION FOR 2020

Name	Fees Earned or Paid in Cash (\$)	Option Awards \$(1)	Total (\$)
Cristina Csimma	50,250	14,383	64,633
Michael Dougherty	52,757(2)	14,383	67,140
James A. Geraghty	78,000(3)	18,135	96,135
Mark Goldberg	55,500(4)	14,383	69,883
Maxine Gowen	56,500	14,383	70,883
Howard Pien	42,330(5)	14,383	56,713
Carol A. Schafer	55,804(6)	14,383	70,187

- (1) These amounts represent the aggregate grant date fair value of option awards made to each listed director in 2020 as computed in accordance with Financial Accounting Standards Board Accounting Standards Codification Topic 718, "Stock Compensation," or ASC 718. These amounts do not represent the actual amounts paid to or realized by the directors during 2020. See Note 12 to the financial statements included in our annual report on Form 10-K for the year ended December 31, 2020 regarding assumptions we made in determining the fair value of option awards. As of December 31, 2020, our non-employee directors, or former director in the case of Mr. Pien, held options to purchase shares of our common stock as follows: Dr. Csimma: 46,000; Mr. Dougherty: 46,000; Mr. Geraghty: 125,686; Dr. Goldberg: 57,375; Dr. Gowen: 48,625; Mr. Pien: 46,000; and Ms. Schafer: 46,000.
- (2) Consists of cash meeting fees of \$52,757 in lieu of which Mr. Dougherty elected to receive 26,489 shares of our common stock.
- (3) Consists of cash meeting fees of \$78,000 in lieu of which Mr. Geraghty elected to receive 39,337 shares of our common stock.
- (4) Consists of cash meeting fees of \$55,500 in lieu of which Mr. Goldberg elected to receive 28,099 shares of our common stock.
- (5) Consists of cash meeting fees of \$42,330 in lieu of which Mr. Pien elected to receive 23,422 shares of our common stock.
- (6) Includes cash meeting fees of \$55,804 in lieu of which Ms. Schafer elected to receive 28,045 shares of our common stock.

CORPORATE GOVERNANCE INFORMATION

Board of Directors

Our board of directors is responsible for establishing our broad corporate policies and overseeing the management of our Company. Our chief executive officer and our other executive officers are responsible for our day-to-day operations. Our board evaluates our corporate performance and approves, among other things, our corporate strategies and objectives, operating plans, major commitments of corporate resources and significant policies. Our board also evaluates and appoints our executive officers.

Our board of directors met five times during 2020. Each director who served as a director during 2020 attended at least 75% of the total number of board meetings and committee meetings for the committees on which he or she served during 2020.

While we do not have a formal policy regarding director attendance, we strongly encourage and expect our directors to attend our annual meetings of stockholders. All of our directors virtually attended the 2020 annual meeting of stockholders.

Board Leadership Structure

Our board of directors does not have a policy on whether the offices of chairperson of the board of directors and chief executive officer should be separate and, if they are to be separate, whether the chairperson of the board of directors should be selected from among the independent directors or should be an employee of our Company. Our board of directors believes that it should have the flexibility to make these determinations at any given point in time in the way that it believes best to provide appropriate leadership for our Company. Currently, Mr. Milano serves as our chief executive officer. Mr. Geraghty, an independent director, served as chair of our board of directors from 2013 until April 28, 2021, at which time Mr. Dougherty, also an independent director, succeeded him as chair. Our board of directors believes that this separation allows our chief executive officer to focus on our day-to-day business, while allowing the chairperson of the board of directors to lead the board of directors in its fundamental role of providing advice to and independent oversight of management.

Our board of directors recognizes that no single leadership model is right for all companies and at all times and that depending on the circumstances, other leadership models, such as a combined chairperson and chief executive officer, might be appropriate. Accordingly, the board of directors periodically reviews its leadership structure. Pursuant to our corporate governance guidelines, if the chairperson is not an independent director, the board of directors may elect a lead director from its independent directors. In such case, the chairperson and chief executive officer would consult periodically with the lead director on board of directors matters and on issues facing our Company. In addition, the lead director would serve as the principal liaison between the chairperson of the board of directors and the independent directors and would preside at any executive session of independent directors.

Board of Directors' Role in Risk Oversight

Our board of directors, as a whole, has responsibility for risk oversight, with reviews of certain areas being conducted by relevant committees that report directly to the board of directors. The oversight responsibility of the board of directors and its committees is enabled by management reporting processes that are designed to provide visibility to the board of directors about the identification, assessment, and management of critical risks and management's risk mitigation strategies. These areas of focus include competitive, economic, operational, financial (accounting, credit, liquidity, and tax), legal, regulatory, compliance, health, safety, environmental, political, and reputational risks. Our board of directors regularly reviews information regarding our strategy, operations, credit, and liquidity, as well as the risks associated with each. Our compensation committee is responsible for overseeing risks relating to our executive compensation plans and arrangements. Our audit committee is responsible for overseeing financial risks and risks associated with related party transactions. Our nominating and corporate governance committee is responsible for overseeing risks associated with governance and the independence of the board of directors. While each committee is responsible for evaluating certain risks and overseeing the management of such risks, our entire board of directors is regularly informed through committee reports about such risks.

Board Committees

Our board of directors has established three standing committees: audit, compensation, and nominating and corporate governance. Each of our audit, compensation, and nominating and corporate governance committees operates under a charter that has been approved by our board of directors. Our board of directors has also adopted corporate governance guidelines to assist our board of directors in the exercise of its duties and responsibilities. Current copies of the charters for the audit, compensation, and nominating and corporate governance committees and the corporate governance guidelines are posted on our website, www.iderapharma.com, and can be accessed by clicking “Investors” and “Corporate Governance.”

Audit Committee

Our audit committee’s purpose is to assist the board of directors’ oversight of our accounting and financial reporting processes and the audits of our financial statements. Our audit committee’s responsibilities include:

- appointing, approving the compensation of, and assessing the independence of our independent registered public accounting firm;
- overseeing the work of our independent registered public accounting firm, including through the receipt and consideration of certain reports from such accounting firm;
- reviewing and discussing with management and our independent registered public accounting firm our annual and quarterly financial statements and related disclosures;
- monitoring our internal control over financial reporting, disclosure controls and procedures, and code of business conduct and ethics;
- discussing with management and our independent auditor about significant risks or exposures;
- establishing procedures for the receipt and retention of accounting related complaints and concerns;
- reviewing and approving related party transactions;
- meeting independently with our independent registered public accounting firm and management; and
- preparing the audit committee report required by SEC rules.

The current members of our audit committee are Ms. Schafer (Chair), Mr. Dougherty, and Dr. Goldberg. Our board of directors has determined that Ms. Schafer is an “audit committee financial expert” within the meaning of SEC rules and regulations. Each member of the audit committee is independent as defined under applicable rules of the Nasdaq, including the independence requirements contemplated by Rule 10A-3 under the Exchange Act. During 2020, our audit committee held four meetings.

Compensation Committee

Our compensation committee’s purpose is to oversee the discharge of the responsibilities of the board of directors relating to compensation of the Company’s executive officers, employees, and board members. Our compensation committee’s responsibilities include:

- approving the Company’s long-term strategy of compensation, including the consideration of base compensation, short-term incentive, and long-term incentive targets;
- reviewing and approving the compensation of the Company’s chief executive officer and the other executive officers;
- overseeing and administering our cash and equity incentive plans;
- reviewing and making recommendations to the board of directors with respect to director compensation;
- overseeing the evaluation of the Company’s senior executives;

- reviewing and discussing annually with management the compensation discussion and analysis required by the SEC rules and included in this proxy statement; and
- preparing the compensation committee report required by SEC rules.

The current members of our compensation committee are Dr. Gowen (Chair), Dr. Csimma, and Mr. Dougherty. During 2020, the compensation committee held six meetings. The compensation committee may delegate to one or more executive officers of the Company the power to grant operations or stock awards to employees of the Company or its subsidiaries who are not directors or executive officers of the Company. The compensation committee may also form and delegate authority to one or more subcommittees as it deems appropriate.

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

Nominating and Corporate Governance Committee

Our nominating and corporate governance committee’s purpose is to identify and recommend to the board of directors persons to be nominated for election as directors, develop and recommend corporate governance principals, and oversee the evaluation of the board of directors. Our nominating and corporate governance committee’s responsibilities include:

- reviewing with the board of directors the requisite skills and criteria for new board members, as well as the composition of the board as a whole;
- adopting and periodically reviewing procedures regarding director candidates proposed by stockholders;
- recommending to the board the directors to be appointed to each committee of the board;
- reviewing and assessing the adequacy of the corporate governance guidelines;
- determining the nature of the self-evaluation of the board, supervising the conduct of the evaluation, and preparing the assessment of the board’s performance; and
- overseeing the Company’s succession planning, which includes transitional leadership in the event of an unplanned vacancy.

The current members of our nominating and corporate governance committee are Messrs. Geraghty (Chair) and Dougherty, and Ms. Schafer. During 2020, the nominating and corporate governance committee held three meetings.

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

Director Independence

Our securities are listed on the Nasdaq Capital Market and we use the standards of “independence” prescribed by rules set forth by Nasdaq. Under Nasdaq rules, a majority of a listed company’s board of directors must be comprised of independent directors. In addition, Nasdaq rules require that, subject to specified exceptions, each member of a listed company’s audit committee and compensation committee be independent and satisfy additional independence criteria set forth in Rules 10A-3 and 10C-1, respectively, under the Exchange Act. Under the applicable Nasdaq rules, a director will only qualify as an “independent director” if, in the opinion of our board of directors, that person does not have a relationship which would interfere with the exercise of independent judgment in carrying out the responsibilities of a director. Our board of directors determined in early 2020 that each of Dr. Csimma, Mr. Dougherty, Mr. Geraghty, Dr. Goldberg, Dr. Gowen, Mr. Pienand Ms. Schafer and all of the members of each of the audit, compensation and nominating and corporate governance committees are independent as defined under applicable rules of the Nasdaq, and, in the case of all members of the audit and compensation committees, the independence requirements contemplated by Rule 10A-3 and Rule 10C-1 under the Exchange Act.

Director Nomination Process

The process followed by our nominating and corporate governance committee to identify and evaluate director candidates includes requests to members of our board of directors and others for recommendations, meetings from time to time to evaluate biographical information and background material relating to potential candidates and interviews of selected candidates by members of our nominating and corporate governance committee and our board of directors. The nominating and corporate governance committee has from time to time used a third-party recruiting firm to identify and interview potential candidates.

In considering whether to recommend any particular candidate for inclusion in the board of director's slate of recommended director nominees, the nominating and corporate governance committee will apply the criteria set forth in our corporate governance guidelines. These criteria include the candidate's:

- business acumen;
- knowledge of our business and industry;
- age;
- experience;
- diligence;
- conflicts of interest;
- ability to act in the interests of all stockholders; and
- in the case of the renomination of existing directors, performance on our board of directors and on any committee of which the director was a member.

Our corporate governance guidelines also provide that candidates should not be discriminated against on the basis of race, religion, national origin, sex, sexual orientation, disability, or any other basis proscribed by law and that our nominating and corporate governance committee should consider the value of diversity of the board of directors when evaluating particular candidates. The nominating and corporate governance committee has not adopted any formal or informal diversity policy and treats diversity as one of the criteria to be considered by the committee. The nominating and corporate governance committee does not assign specific weights to particular criteria that the nominating and corporate governance committee reviews and no particular criterion is a prerequisite for the consideration of any prospective nominee. We believe that the backgrounds and qualifications of our directors, considered as a group, should provide a composite and diverse mix of experience, knowledge, and abilities that will allow the board of directors to fulfill its responsibilities.

Stockholder Nominees

Stockholders may recommend individuals to the nominating and corporate governance committee for consideration as potential director candidates by submitting the individuals' name, together with appropriate biographical information and background materials and a statement as to whether the stockholder or group of stockholders making the recommendation has beneficially owned more than 5% of our common stock for at least one year as of the date such recommendation is made, to the Nominating and Corporate Governance Committee, c/o Secretary, Idera Pharmaceuticals, Inc., 505 Eagleview Blvd., Suite 212, Exton, PA 19341. Assuming that appropriate biographical and background material has been provided on a timely basis, the nominating and corporate governance committee will evaluate stockholder-recommended candidates by following substantially the same process, and applying substantially the same criteria, as it follows for candidates provided by other sources. If the board of directors determines to nominate a stockholder-recommended candidate and recommends his or her election, then his or her name will be included in our proxy card for the next annual meeting.

Stockholders also have the right under our bylaws to nominate director candidates directly, without any action or recommendation on the part of the nominating and corporate governance committee or the board of directors, by following the procedures set forth in our bylaws, including advance notice requirements. Candidates nominated by stockholders in accordance with the procedures set forth in our bylaws will not be included in our proxy card for the next annual meeting. See "Information about the 2021 annual meeting—

How and when may I submit a proposal for the 2022 annual meeting of stockholders?” for more information about these procedures and the deadline for submitting director nominations.

Communicating with our Board of Directors

Stockholders and other interested parties may communicate directly with the board of directors (and with independent directors, individually or as a group). Our board of directors will give appropriate attention to written communications that are submitted by stockholders and will respond if and as appropriate. The chairperson of the board of directors (if an independent director) or the lead independent director, if any, is primarily responsible for monitoring communications from stockholders and for providing copies or summaries to the other directors, as he or she considers appropriate.

Communications are forwarded to all directors if they relate to important substantive matters and include suggestions or comments that the chairperson of the board of directors or lead independent director, as the case may be, considers to be important for the directors to know. In general, communications relating to corporate governance and long-term corporate strategy are more likely to be forwarded than communications relating to ordinary business affairs, personal grievances and matters that involve repetitive or duplicative communications.

Stockholders who wish to send communications on any topic to the board of directors should address such communications to Board of Directors, c/o Secretary, Idera Pharmaceuticals, Inc., 505 Eagleview Blvd., Suite 212, Exton, PA 19341.

Each communication from a stockholder should include the following information in order to permit stockholder status to be confirmed and to provide an address to forward a response if deemed appropriate:

- the name, mailing address, and telephone number of the stockholder sending the communication;
- the number of shares held by the stockholder; and
- if the stockholder is not a record owner of our securities, the name of the record owner of our securities beneficially owned by the stockholder.

Code of Business Conduct and Ethics

We have adopted a written code of business conduct and ethics that applies to our principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions. We have posted a current copy of the Code of Business Conduct and Ethics in the “Investors—Corporate Governance” section of our website, which is located at www.iderapharma.com. We intend to satisfy the disclosure requirements under Item 5.05 of Form 8-K regarding an amendment to, or waiver from, a provision of our code of business conduct and ethics by posting such information on our website at www.iderapharma.com.

Hedging Policy

Our insider trading policy prohibits our directors and employees (including our executive officers) from hedging or entering into other similar arrangements with respect to the Company’s securities, including, without limitation, short sales of Company securities, including short sales “against the box,” or purchases or sales of puts or calls or other derivative securities based on the Company’s securities.

EXECUTIVE OFFICERS

Information about our Executive Officers

Our currently-serving executive officers and their respective ages and positions are described below. Our executive officers serve until they resign or the board terminates their position.

Name	Age	Position
Vincent J. Milano*	57	President and Chief Executive Officer
Daniel B. Soland	62	Senior Vice President, Chief Operating Officer
John J. Kirby	49	Senior Vice President, Chief Financial Officer
Bryant D. Lim	50	Senior Vice President, General Counsel and Corporate Secretary
Elizabeth Tarka	54	Senior Vice President, Chief Medical Officer

* Mr. Milano is a member of our board of directors. See “Information about our Directors” above for more information about Mr. Milano.

Daniel B. Soland joined the Company in January 2021 as our Senior Vice President, Chief Operating Officer. Prior to joining us, Mr. Soland most recently served as the Chief Executive Officer of uniQure N.V. from December 2015 through October 2016 and as the Senior Vice President and Chief Operating Officer of ViroPharma Inc. from November 2006 through February 2014. Mr. Soland previously served as President of Chiron Corporation (“Chiron”) from January 2005 through June 2006, and helped engineer a turnaround that contributed to the acquisition of Chiron by Novartis International AG. Prior to then, he served as President and Chief Executive Officer of Epigenesis Pharmaceuticals Inc. and as Vice President and Director, Worldwide Marketing Operations at GlaxoSmithKline Biologicals. Earlier in his career, he held positions of increasing responsibility in sales and product management at Pasteur-Merieux’s Connaught Laboratories. Mr. Soland currently serves on the board of directors of KalVista Pharmaceuticals, Inc. (Nasdaq: KALV), Acadia Pharmaceuticals Inc. (Nasdaq: ACAD), and DBV Pharmaceuticals S.A. (Nasdaq: DBVT), each a publicly traded company. Mr. Soland holds a B.S. in Pharmacy from the University of Iowa.

John J. Kirby joined the Company in 2015 as our Vice President of Corporate Accounting. He served as Vice President of Finance from July 2018 to July 2019 and has served as Senior Vice President and Chief Financial Officer since July 2019 (principal financial officer and principal accounting officer since October 2018). Prior to joining us, Mr. Kirby served as Assistant Controller at Endo Pharmaceuticals, Inc. from November 2014 to October 2015. From August 2012 to July 2014, Mr. Kirby served as Vice President, Chief Accounting Officer and Corporate Controller at ViroPharma Incorporated, which was acquired by Shire Plc in January 2014. Mr. Kirby began his career at KPMG, LLP in their Healthcare and Life Science Practice and served as a Regional Audit Director at AstraZeneca Pharmaceuticals L.P. prior to joining ViroPharma Incorporated. Mr. Kirby received his B.S. in Accountancy from Villanova University and is a licensed certified public accountant in the Commonwealth of Pennsylvania.

Bryant D. Lim has been our Senior Vice President, General Counsel and Secretary since September 2018. Prior to joining us, Mr. Lim served as Vice President, Assistant General Counsel and, prior to that, Global Chief Compliance Officer at Incyte Corporation from March 2014 to September 2018. Prior to Incyte Corporation, Mr. Lim held roles of increasing responsibility at ViroPharma Incorporated from January 2009 until its acquisition by Shire Plc in January 2014. Mr. Lim served as Assistant Counsel at Merck & Co., Inc. and also was associated with Morgan, Lewis & Bockius, LLP. Mr. Lim began his legal career as a law clerk for a federal judge. Mr. Lim received his J.D. from Villanova University School of Law, where he currently serves on its adjunct faculty where he teaches about the Law of Drugs and Biologics. Mr. Lim received his B.A. from the University of Rochester. Mr. Lim also serves on the board of directors of Life Sciences of Pennsylvania.

Elizabeth Tarka, M.D., FACC, joined our Company as Senior Vice President, Chief Medical Officer in July 2019. Prior to joining us, Dr. Tarka served as Vice President, Clinical Development at Complexa, Inc. from September 2017 to July 2019 where she was responsible for the clinical development of a novel asset in rare diseases. Prior to Complexa, Inc., Dr. Tarka served as Clinical Program Lead, Clinical Development at Janssen Pharmaceuticals, Inc. (“Janssen”) from September 2015 to September 2017, where she was the

Clinical Program Leader for Xarelto® (rivaroxaban) and was responsible for the design, implementation, and medical oversight for large multinational trials. Dr. Tarka held roles of increasing responsibility in late state clinical development of cardiovascular medications at GlaxoSmithKline plc from May 2003 to May 2015 and held the role of Senior Director, Clinical Development at the time of her transition to Janssen. Dr. Tarka earned her B.A. in Biochemistry and an M.D. from the University of Pennsylvania where she also completed her Internal Medicine residency and Cardiovascular fellowship training. She was also an Assistant Professor of Medicine in the Cardiovascular Division at the University of Pennsylvania where she had numerous major teaching and clinical responsibilities.

SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

The following table sets forth, as of March 31, 2021 (except as otherwise indicated below), information we know about the beneficial ownership of our common stock by:

- each person or entity, including any “group” as that term is used in Section 13(d)(3) of the Exchange Act, who is known by us to own beneficially more than 5% of the issued and outstanding shares of our common stock;
- each of our current directors and director nominees;
- each of our named executive officers, as set forth in the Summary Compensation Table set forth in this proxy; and
- all of our current directors and executive officers as a group.

We have determined beneficial ownership in accordance with the rules of the SEC, and the information in the table below is not necessarily indicative of beneficial ownership for any other purpose. The SEC has defined “beneficial” ownership of a security to mean the possession, directly or indirectly, of voting power and/or investment power. In computing the percentage ownership of each person, shares of common stock subject to options, warrants, or rights held by that person that are currently exercisable, or exercisable within 60 days of March 31, 2021, are deemed to be outstanding and beneficially owned by that person. These shares, however, are not deemed outstanding for the purpose of computing the percentage ownership of any other person.

To our knowledge and except as indicated in the notes to this table and pursuant to applicable community property laws, each stockholder named in the table has sole voting and investment power with respect to the shares set forth opposite such stockholder’s name. The percentage of ownership is based on 46,536,688 shares of our common stock issued and outstanding on March 31, 2021. All fractional common share amounts have been rounded to the nearest whole number. To our knowledge, except as noted below, no person or entity is the beneficial owner of more than 5% of the voting power of the company’s stock.

	Number of Shares Beneficially Owned	Percentage of Outstanding Shares
Name and Address of Beneficial Owner(1)		
5% Stockholders		
Pillar Investment Entities (collectively, “Pillar”) c/o Stuarts Corporate Services Ltd. Kensington House, 69 Dr. Roy’s Drive Georgetown, Grand Cayman KY1-1104 Cayman Islands	10,139,190(2)	19.99%
Named Executive Officers and Directors		
Vincent J. Milano	707,857(3)	1.5%
John J. Kirby	312,815(4)	*
Bryant D. Lim	353,684(5)	*
Elizabeth Tarka	294,237(6)	*
R. Clayton Fletcher	241,374(7)	*
Cristina Csimma	38,295(8)	*
Michael R. Dougherty	75,940(9)	*
James A. Geraghty	230,456(10)	*
Mark Goldberg	95,474(11)	*
Maxine Gowen	49,500(12)	*
Carol A. Schafer	88,709(13)	*
All current directors and executive officers as a group (11 individuals)	2,465,810(14)	5.1%

* Denotes less than 1% beneficial owner.

- (1) Except as otherwise noted, the address for each person listed above is c/o Idera Pharmaceuticals, Inc., 505 Eagleview Boulevard, Suite 212, Exton, PA 19341.
- (2) On April 1, 2021, Pillar Pharmaceuticals 6, L.P. (“Pillar 6”), together with Pillar Invest Corporation (“Pillar GP”), Pillar Partners Foundation, L.P. (“Pillar Foundation,” and, together with Pillar 6 and Pillar GP, the “Pillar Entities”), Abude Umari and Youssef El Zein (together with the Pillar Entities and Mr. Umari, the “Reporting Persons”) filed Amendment No. 9 to a Schedule 13D with the SEC reporting the following beneficial ownership: (i) sole voting power with respect to zero shares; (ii) shared voting power with respect to 16,750,100 shares; (iii) sole dispositive power with respect to zero shares; and (iv) shared dispositive power with respect to 16,750,100 shares. The percentage reported for the shares of common stock is capped at 19.99% as a result of blocker provisions that limit the number of warrants exercisable for shares of common stock that are held by certain of the Pillar Entities.

The Reporting Persons expressly disclaim status as a “group” for purposes of Amendment No. 9 to the Schedule 13D. The Pillar Entities exercise no voting or dispositive power over and expressly disclaim beneficial ownership of any shares held directly by Messrs. Umari and El Zein, and Messrs. Umari and El Zein expressly disclaim beneficial ownership of any shares of common stock held directly by Pillar 6, Pillar Foundation and indirectly by Pillar GP.
- (3) Includes 543,871 shares of common stock subject to outstanding stock options that are exercisable within 60 days after March 31, 2021.
- (4) Includes 285,183 shares of common stock subject to outstanding stock options that are exercisable within 60 days after March 31, 2021.
- (5) Includes 323,250 shares of common stock subject to outstanding stock options that are exercisable within 60 days after March 31, 2021.
- (6) Includes 281,000 shares of common stock subject to outstanding stock options that are exercisable within 60 days after March 31, 2021.
- (7) Includes 232,136 shares of common stock subject to outstanding stock options that are exercisable within 60 days after March 31, 2021.
- (8) Includes 38,295 shares of common stock subject to outstanding stock options that are exercisable within 60 days after March 31, 2021.
- (9) Includes 38,295 shares of common stock subject to outstanding stock options that are exercisable within 60 days after March 31, 2021.
- (10) Includes 125,686 shares of common stock subject to outstanding stock options that are exercisable within 60 days after March 31, 2021.
- (11) Includes 57,375 shares of common stock subject to outstanding stock options that are exercisable within 60 days after March 31, 2021.
- (12) Includes 48,625 shares of common stock subject to outstanding stock options that are exercisable within 60 days after March 31, 2021, and 875 shares of common stock held in the name Brian Macdonald for Maxine Gowen Trust, for which Dr. Gowen is a beneficiary and trustee.
- (13) Includes 40,221 shares of common stock subject to outstanding stock options that are exercisable within 60 days after March 31, 2021.
- (14) Includes 1,981,801 shares of common stock subject to outstanding stock options held by the directors and executive officers as a group that are exercisable within 60 days after March 31, 2021.

EXECUTIVE COMPENSATION

Compensation Discussion and Analysis

This Compensation Discussion and Analysis (“CD&A”) should be read in conjunction with the compensation tables and narratives that immediately follow this section.

Overview

We are a development stage biotechnology company focused on the acquisition, development, and ultimate commercialization of drug candidates for both oncology and rare disease indications characterized by small, well-defined patient populations with serious unmet needs. As such, we operate in an environment that is very competitive from a business perspective and for talent. We see our competitive compensation program as one element of our employee value proposition that allows us to attract and retain the resources we need to drive our business success.

Purpose

The purpose of this CD&A is to provide our stockholders with an overview and understanding of the philosophy, objectives, process, components, decision making, and additional aspects of our 2020 executive compensation program. This analysis focuses on the compensation paid to our named executive officers (“NEOs”):

- Vincent J. Milano, President and Chief Executive Officer,
- John J. Kirby, Senior Vice President and Chief Financial Officer
- Bryant D. Lim, Senior Vice President, General Counsel and Corporate Secretary
- Elizabeth Tarka, Senior Vice President, Chief Medical Officer
- R. Clayton Fletcher, Former Senior Vice President of Business Development and Strategy⁽¹⁾

(1) Mr. Fletcher served as our Senior Vice President of Business Development and Strategy until December 31, 2020. Mr. Fletcher currently provides consulting services to the Company.

Business Achievements

Our executive compensation program is designed to, among other goals, align executive compensation with the achievement of measurable corporate objectives. During 2020, the Company achieved the following:

- progressed tilsotolimod toward its potential registration in anti-PD1 refractory melanoma;
- completed and expanded of the initial cohort of our phase 2 trial of tilsotolimod in microsatellite-stable colorectal cancer (“MSS-CRC”); and
- enhanced of our financial position.

Further detail regarding our 2020 goals and performance can be found in the section “Annual Cash Incentive Award.”

Key Compensation Decisions and Actions

Our compensation committee took several actions in 2020, based on our compensation philosophy and objectives, the needs and performance of our Company, individual performance, and other factors such as market data and industry best practices.

- Base Salary. The compensation committee reviewed base salaries of our NEOs in January 2020. No adjustments were made to the salaries of Messrs. Fletcher, Kirby, and Lim, and Dr. Tarka as they were determined to be market competitive during our benchmark analysis.

In January 2020, the Company entered into an amendment to Mr. Milano's employment agreement. This amendment was recommended by Mr. Milano as a way for the Company to conserve cash during 2020 and was approved by the board. Under the terms of the amendment, Mr. Milano's annual base salary of \$600,000 was paid as follows: (i) for the period from January 1, 2020 to January 10, 2020, \$18,182 was paid in cash; and (ii) for the period immediately following January 10, 2020 to December 31, 2020, an additional \$6,600 was paid in cash with the balance of his 2020 salary, approximately \$575,218, paid in the form of restricted stock units ("RSUs"). These RSUs were granted to Mr. Milano on December 18, 2020 and were fully vested on such date, with the number of RSUs (128,170) determined based on the average fair market value of the Company's common stock for the five trading days immediately preceding the grant date.

Further detail regarding our salary review and decision-making process is provided below in the section entitled "Base Salary."

- **Annual Cash Incentive Award.** In January 2020, the compensation committee approved corporate goals as part of our 2020 bonus program. The corporate goals consisted of three primary corporate objectives, each with its own weighting to reflect their importance to our business. To the extent goals are partially met or exceeded, the compensation committee may exercise discretion and ascribe a partial achievement or overachievement percentage to each goal, as applicable. The compensation committee also reviews individual performance to determine whether the potential bonus should be increased or decreased. In January 2021, the compensation committee reviewed our 2020 performance against our 2020 corporate objectives and agreed to attribute a corporate performance score of 95%. Further detail relating to this program is provided below in the section entitled "Annual Cash Incentive Award."
- **Long-Term Equity Incentive Awards.** In January 2020, the compensation committee approved the grant of the first tranche of the biannual option awards and an award of RSUs to our NEOs. Additionally, in July 2020, the compensation committee approved the grant of the second tranche of biannual option awards to our NEOs as well as a special, performance-based RSU award to Messrs. Fletcher, Kirby, Lim, and Milano. Further detail relating to our stock incentive program and the special performance-based RSU Award is provided in the section "Long Term Equity Compensation."

Compensation Philosophy and Objectives

Our general executive compensation philosophy has been established by our compensation committee, which acts pursuant to authority delegated to it by our board and as set forth its charter. Our compensation committee is comprised solely of independent directors as defined by applicable rules and regulations of Nasdaq and the SEC. See "Board Committees—Compensation Committee" for further detail regarding the composition, independence, and responsibilities of our compensation committee. Our executive compensation program is designed to achieve the following broad goals:

- attract, retain, and motivate the best possible executive talent;
- ensure executive compensation is aligned with our corporate strategies and business objectives, including our short-term operating goals and longer-term strategic objectives;
- promote the achievement of key strategic and financial performance measures by linking short- and long-term cash and equity incentives to the achievement of measurable corporate and individual performance goals; and
- align executives' incentives with the creation of stockholder value.

To achieve these objectives, the compensation committee:

- sets short- and long-term compensation at levels the compensation committee believes are competitive with those of other companies in our industry and our region that compete with us for executive talent;
- conditions a substantial portion of each executive officer's overall cash compensation on the achievement of key strategic, financial, research, and operational goals, such as clinical trial and

regulatory progress, intellectual property portfolio development, establishment and maintenance of key strategic relationships, and exploration of business development opportunities, as well as our financial and operational performance; and

- provides a portion of our executive compensation in the form of equity awards that vest (i) over time from the date of grant of the awards and/or, when applicable, (ii) upon the achievement of performance milestones, which we believe helps retain our executive officers and align their interests with those of our stockholders by allowing them to participate in the longer-term success of our Company as reflected in stock price appreciation.

Advisory Vote on Executive Compensation

We conducted an advisory vote on executive compensation, commonly referred to as a “say-on-pay” proposal, at our 2020 Annual Meeting of Stockholders. While this advisory vote was not binding, we value the opinions of our stockholders and, to the extent there is any significant vote against the compensation of our NEOs in the future, we will consider our stockholders’ concerns and our board and compensation committee will evaluate whether any actions are necessary to address those concerns.

At our 2020 Annual Meeting of Stockholders, approximately 96% of the votes cast on the advisory vote on executive compensation approved the 2019 compensation paid to our NEOs as disclosed in the proxy statement for that meeting. The board and compensation committee considered the results of this advisory vote, together with the other factors and data, in determining executive compensation for 2020 and will continue to consider the outcome of our say-on-pay votes when making future compensation decisions for our NEOs.

Executive Compensation Process

Role of Our Compensation Committee and Our Chief Executive Officer

In order to accomplish its objectives consistent with its philosophy for executive compensation and determine compensation for our NEOs, our compensation committee reviews competitive information on executive compensation practices from peer companies as well as an assessment of overall corporate performance and individual performance. In connection therewith, our compensation committee typically takes the following actions annually:

- reviews chief executive officer performance;
- seeks input from our chief executive officer on the performance of the other NEOs;
- reviews all components of our executive compensation program, including base salary, cash bonus targets and awards, equity compensation, and the estimated payout obligations under severance and change in control scenarios;
- considers historic compensation and amounts realizable from prior awards;
- consults with its independent compensation consultant;
- holds executive sessions (without our management present);
- reviews information regarding the executive compensation of its peer companies;
- considers the say-on-pay vote from the prior year; and
- reviews the outcomes from the foregoing with the board of directors.

Our chief executive officer does not submit an assessment of his own performance and does not participate in the portion of the compensation committee meeting where his compensation is determined. Our compensation committee reviews and approves, or recommends for approval by the board, the compensation of our NEOs, including our chief executive officer.

Under our annual performance review program, annual performance goals are determined for our Company as a whole and for each individual NEO.

- **Annual corporate goals** are proposed by management and approved by the board. These corporate goals target the achievement of specific research, clinical, operational, and financial milestones. The compensation committee determines the weighting of and how the components of our annual corporate goals will contribute to the overall performance evaluation.
- **Annual individual goals** focus on contributions that facilitate the achievement of our corporate goals. Individual goals are proposed at the start of each year by each NEO and approved by the chief executive officer (except with respect to himself) and, in the case of the chief executive officer and as appropriate for the other NEOs, the compensation committee. Typically, the compensation committee sets the chief executive officer's goals and reviews and discusses with the chief executive officer the goals for the other NEOs. The individual performance goals of each NEO consist primarily of the key objectives and goals from our annual business plan that relate to the functional area for which such NEO is responsible. As the chief executive officer oversees all aspects of our business, the individual performance goals for the chief executive officer are largely coextensive with the corporate goals.

At the end of each year, the compensation committee evaluates corporate and individual NEO performance.

In assessing corporate performance, the compensation committee evaluates corporate performance relative to the approved corporate goals for the applicable year, as well as other aspects of corporate performance, including progress and achievement of milestones outside of the corporate goals.

The compensation committee evaluates individual performance with respect to the areas that fall within each NEO's responsibility. In doing so, the compensation committee relies on the chief executive officer's evaluation of the other NEOs. The chief executive officer prepares evaluations of the other NEOs, which includes comparing such individual's performance to his or her individual performance goals. The chief executive officer recommends annual executive salary increases, annual stock option awards, and bonuses, if any, for the other NEOs; the compensation committee then reviews and approves, as appropriate, the chief executive officer's recommendations. In the case of the chief executive officer, the compensation committee independently conducts his individual performance evaluation and determines his compensation accordingly.

During this process, the compensation committee consults with its independent compensation consultant. In connection with the compensation committee's annual performance and compensation review in the fourth quarter of each year, the independent compensation consultant provides the compensation committee with a blend of the data from the peer group (identified below for 2020 compensation decisions) and relevant compensation survey data from the Radford Global Life Sciences Survey. We refer to this blended data as the "market compensation data."

For all NEOs, annual base salary increases, if any, are awarded during the first quarter following the end of the fiscal year. Equity awards and bonuses, if any, are granted as determined by the compensation committee. Annual bonuses are typically established in the first quarter of the fiscal year, with payout for such bonuses in January of the following fiscal year upon the compensation committee's determination of the achievement of the applicable performance goals. Equity awards are typically given in two biannual tranches, generally in the first and third quarters of the fiscal year. Special equity awards, if any, are granted on an ad hoc basis as determined by the compensation committee. During 2020, the compensation committee approved a special performance-based RSU award to certain NEOs as described in the section "Long Term Equity Compensation."

Role of the Compensation Committee's Independent Consultant

In the third quarter of 2019, our compensation committee engaged Pearl Meyer & Partners, LLC ("Pearl Meyer") in connection with our 2020 annual compensation assessment to review our executive compensation practices and to provide the compensation committee with an assessment of our compensation program against competitive market data. See "Use of Market Compensation Data" below for a discussion of the competitive market compensation data compiled by Pearl Meyer. Based on this assessment, Pearl Meyer made recommendations to our compensation committee regarding the amount and form of executive officer compensation, including the ratio of cash to equity compensation and "at risk" compensation.

Pearl Meyer did not provide any services to our Company during 2020 other than pursuant to their respective engagement by the compensation committee, which was limited to aforementioned assessment of our executive officer compensation program.

Our compensation committee analyzed whether the engagement of Pearl Meyer as our compensation consultant raised any conflict of interest, taking into consideration the following factors: (a) the provision of other services to us by Pearl Meyer; (b) the amount of fees received from us by Pearl Meyer, as a percentage of the total revenue of Pearl Meyer; (c) Pearl Meyer's policies and procedures that are designed to prevent conflicts of interest; (d) any business or personal relationship with Pearl Meyer or the individual advisors employed by Pearl Meyer and a member of the compensation committee or any executive officer; and (e) any shares of our stock owned by Pearl Meyer or the individual advisors employed by Pearl Meyer. Our compensation committee determined, based on its analysis of the above factors, that the work of Pearl Meyer and the individual compensation advisors employed by Pearl Meyer as compensation consultants did not create any conflict of interest. Accordingly, the compensation committee determined that Pearl Meyer is independent. Going forward, the compensation committee intends to assess the independence of any of our compensation advisers by reference to the foregoing factors, consistent with applicable rules and regulations of Nasdaq and the SEC.

Benchmarking: Use of Market Compensation Data

In making compensation decisions, our compensation committee reviewed competitive market compensation data compiled by Pearl Meyer. As part of its engagement, Pearl Meyer worked with the compensation committee in the fourth quarter of 2019 to create a peer group of publicly traded companies to be used in connection with our 2020 compensation decisions, including stock options granted during 2020, fiscal year 2020 salary adjustments, and fiscal year 2020 target bonus percentages. In selecting this peer group, the compensation committee and Pearl Meyer generally targeted mid- to late-development stage companies in the pharmaceutical and biotechnology sectors that generally met the following screening criteria:

- Company Size: pre-commercial companies, small or micro-cap companies (under \$1 billion in market capitalization), companies with a last twelve months' ("LTM") operating expense of less than \$100 million, and companies with fewer than 100 employees;
- Business Operations: companies with five or fewer Phase 2 or Phase 3 assets focused on cancer/ oncology/immune-oncology, and with no or few other areas of research and development; and
- Other: exclude subsidiaries, companies with business challenges, and companies that have recently conducted an initial public offering.

The following table lists the companies included in the peer group used in connection with our 2020 compensation decisions referred to above:

Aeglea BioTherapeutics, Inc.	Molecular Templates, Inc.*	Syndax Pharmaceuticals, Inc.
Calithera Biosciences, Inc.*	NewLink Genetics Corporation	Syros Pharmaceuticals, Inc.*
Galectin Therapeutics, Inc.	Selecta Biosciences, Inc.	Tyme Technologies, Inc.*
Leap Therapeutics, Inc.*	Sesen Bio, Inc.	ZIOPHARM Oncology, Inc.
MEI Pharma, Inc.*	Spring Bank Pharmaceuticals, Inc.	
Miragen Therapeutics, Inc.*	Sunesis Pharmaceuticals, Inc.*	

* Newly-added company to the peer group used in connection with our 2020 compensation decisions. Such addition(s) replaced the following companies used in the peer group used in connection with our 2019 compensation decisions: Bellicum Pharmaceuticals, Inc., Dynavax Technologies Corporation, Endocyte, GTx, Inc., Inovio Pharmaceuticals, Inc., Stemline Therapeutics, Inc., and Verastem, Inc.

The foregoing peer group companies were recommended by Pearl Meyer and approved by our compensation committee because they have similar business profiles to ours considering number of employees, market value, and stage of development. Changes to the screening criteria used for determining

the peer group used for 2020 compensation decisions, as compared to the determination of the peer group used for 2019 compensation decisions, primarily related to peer company size and included: (i) reducing the LTM operating expenses criteria from less than or equal to \$220 million to less than \$100 million, (ii) reducing the number of employees criteria from fewer than 200 to fewer than 100, and (iii) narrowing the areas of business focus to companies primarily with five or fewer Phase 2 assets or Phase 3 assets. Based on application of this revised screening criteria, certain companies were excluded from or added to the peer group used for the 2020 compensation decisions.

Our compensation committee intends that if we achieve our corporate goals and the executive officer performs at the level expected, the executive officer should have the opportunity to receive compensation that is competitive with industry norms. Accordingly, our compensation committee generally targets overall compensation for NEOs around the 50th percentile of the market data. However, the compensation committee does not apply those targets formulaically and allows for NEOs to be positioned at different percentiles based on each individual NEO's experience, performance level, and duties and responsibilities.

Components of Executive Compensation

The primary elements of our executive compensation program are:

- base salary;
- annual cash bonuses;
- long-term equity awards (i.e., stock option and RSUs);
- severance and change in control benefits; and
- broad-based benefits and limited perquisites.

Base salaries are an important part of the NEOs' total compensation package and are intended to reflect their respective positions, duties, and responsibilities. Base salary provides a baseline compensation level, serving as a stable, fixed component of compensation that delivers cash income to each NEO. Annual base salaries have historically been based on, among other factors, a NEO's knowledge, experience, expertise, perceived abilities, and expected contributions. The factors considered are not assigned specific weights.

Our variable or "at-risk," performance-based compensation consists of short-term compensation in the form of an annual cash bonus and long-term compensation in the form of equity awards that vest over time from the date of grant of the award or from the time of achievement of performance milestones. The annual cash bonus is intended to provide an incentive to our NEOs to achieve short-term operational objectives, while equity awards are intended to incentivize our NEOs to achieve longer-term strategic business goals, which should ultimately lead to higher stock prices and increased stockholder value. We do not have any formal or informal policy or target for allocating compensation between long-term and short-term compensation, between cash and non-cash compensation, or among the different forms of non-cash compensation. Instead, the compensation committee, after reviewing industry information, including the compensation practices of our peer companies, and our cash resources, determines subjectively what it believes to be the appropriate level and mix of the various compensation components.

We do not have any defined benefit pension plans or non-qualified deferred compensation plans. We maintain broad-based benefits, including health, dental and vision insurance, life and disability insurance, and a 401(k) plan, that are provided to all employees. Our NEOs may also participate in our employee stock purchase plan, which is generally available to all employees who work over 20 hours per week, so long as they own less than 5% of our common stock, including for this purpose vested and unvested stock options. We provide limited perquisites consisting of certain relocation benefits.

We are party to employment agreements and employment offer letters with each of our NEOs. Employment agreements and employment offer letters with our NEOs are described below under the caption "Employment Agreements with our NEOs."

Base Salary

In establishing base salaries for our NEOs, our compensation committee typically:

- reviews the market compensation data provided by the independent compensation consultant;
- considers historic salary levels of the NEO and the nature of the NEO's responsibilities;
- compares each NEO's base salary with the salaries of our other NEOs; and
- considers the NEO's experience, performance, and contributions.

The compensation committee also typically considers the challenges involved in hiring and retaining executive talent in our industry and region. In assessing the NEO's performance, the compensation committee considers his or her role in achieving the annual corporate goals, as well as, in the case of our NEOs other than our chief executive officer, the performance evaluation prepared by our chief executive officer with respect to such NEO. The chief executive officer's evaluation provides the compensation committee insight as to whether each individual NEO's performance was generally consistent with our expectations.

As part of our 2019 annual performance and compensation review, the compensation committee approved annual base salaries for our executive officers for 2020. In setting these annual base salaries, the compensation committee reviewed the 2019 market compensation data presented by Pearl Meyer. The compensation committee approved the following base salary amounts:

NEO	2019 Base Salary	2020 Base Salary	% Increase
Mr. Milano(1)	\$600,000	\$600,000	0.0
Mr. Kirby	\$336,000	\$336,000	0.0
Mr. Lim	\$336,000	\$336,000	0.0
Dr. Tarka	\$375,000	\$375,000	0.0
Mr. Fletcher(2)	\$400,000	\$400,000	0.0

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- (1) While the amount of Mr. Milano's base salary remained unchanged, the Company entered into an amendment to Mr. Milano's employment agreement in January 2020 that altered the form of Mr. Milano's base salary and significantly reduced the amount of cash that he received during the year. Pursuant to this amendment, in an effort to preserve cash reserves, Mr. Milano's annual base salary of \$600,000 was paid as follows: (i) for the period from January 1, 2020 to January 10, 2020, \$18,182 was paid in cash; and (ii) for the period immediately following January 10, 2020 to December 31, 2020, an additional \$6,600 was paid in cash and the balance of his 2020 salary, approximately \$575,218, was paid in the form of 128,170 RSUs granted to Mr. Milano on December 18, 2020.
- (2) Mr. Fletcher served as our Senior Vice President of Business Development and Strategy until December 31, 2020.

Annual Cash Incentive Award

The annual cash incentive award provides an opportunity for additional compensation to NEOs if pre-established annual performance goals are attained. The compensation committee generally links cash awards to the achievement of the annual corporate goals, including unexpected corporate performance outside of the corporate goals and individual performance. The amount of the bonus paid, if any, varies among the NEOs depending on individual performance, individual contribution to the achievement of our annual corporate goals, and corporate performance generally and the compensation committee may exercise discretion in its determinations. The annual cash incentive award targets are based on a target percentage of each NEO's salary. In determining the target bonus percentages for each of our NEOs, the compensation committee concluded that the target bonus percentages should be competitive with the 50th percentile of the market compensation data and that the target bonus percentage for each NEO, with the exception of our chief executive officer, be the same. The target bonus was established by the compensation committee for each NEO at the time of hire, with the exception of Mr. Fletcher, whose target bonus was adjusted in December 2015, and Mr. Kirby, whose target bonus was adjusted concurrent with his promotion to Chief

Financial Officer in 2019. Each year, the compensation committee reviews the individual bonus target percentages against the market data to ensure its competitiveness.

The following table sets forth the individual bonus target percentages for each of our NEOs for 2020.

NEO	2020 Target Cash Bonus (% of Base Salary)
Mr. Milano	50%
Mr. Kirby	40%
Mr. Lim	40%
Dr. Tarka	40%
Mr. Fletcher	40%

Consistent with our Company-wide annual incentive plan applicable to all employees, including our NEOs, both a corporate performance score and individual performance score factored into the determination of each NEO's cash bonus award for 2020.

Under the terms of our incentive plan, the corporate performance score is based on the degree to which corporate performance objectives have been achieved. This score is determined by the compensation committee and may range from 0-125%. The individual performance score also may range from 0-125% and is based on:

- the degree to which individual performance objectives have been achieved;
- the competencies and behaviors, such as leadership, judgment, decision making, management, and collaboration, demonstrated in achieving results;
- the technical skills required by the position; and
- the completion of the ongoing responsibilities required by the position.

The corporate performance score and the individual performance score is approved by the compensation committee. The individual's actual award is then calculated as follows:



In setting corporate goals in the first quarter of 2020, the compensation committee agreed to group the business objectives into one of three primary categories, each of which would contribute toward the overall assessment of our corporate performance. In assessing our achievement of the 2020 corporate goals, and determining the corporate performance score, the compensation committee considered the extent to which the Company achieved the business objectives in each of the categories, and assigned a score for each category, as summarized in the following table:

Primary Goals	Contribution toward Corporate Performance Score(1)	Weighted Achievement of Performance Goal(2)	Highlights of Performance on Key Objectives
Advance Tilsotolimod (IMO-2125) program through Phase 3 and beyond PD-1 refractory melanoma	80%	70%	<ul style="list-style-type: none"> • Progressed ILLUMINATE-301 study toward database lock and New Drug Application (“NDA”) filing. • Completed initial assessment of patients in first phase of MSSCRC cohort for ILLUMINATE-206 study and commenced enrollment of additional patients for evaluation. • Completed various NDA-readiness initiatives, including successful manufacturing of GMP batch of tilsotolimod. • Completed ILLUMINATE-204 study database lock and released topline data.
Continue business development initiatives through rare disease exploration	10%	10%	<ul style="list-style-type: none"> • Active due diligence on multiple strategic business development options.
Enhance ability to be successful through relevant foundational objectives	10%	15%	<ul style="list-style-type: none"> • On target with respect to financial budget. • Closed two private placement financings from which we have received \$15.1 million in 2020 with the potential for up to \$40.7 million in aggregate. • Extended cash runway into the second quarter of 2022. • Minimized impact of COVID-19 disruption.
TOTAL	100%	95%	

(1) Percentages shown in this column represent the weight allocated to each performance goal.

(2) Amounts represent the weighted achievement of each performance goal.

Based on these achievements and resulting category scores, in February 2021, the compensation committee approved a corporate performance score of 95%.

In assessing each NEO’s individual performance score, the compensation committee determined:

- Mr. Milano’s overall score was equivalent to the corporate performance score of 95%;
- In recognition of his achievement against his personal objectives, including his role in contributing to the closing of our private placements and execution of other financing vehicles, as well as his overall leadership contributions, Mr. Kirby’s individual performance score was 110%. Using the broader corporate score of 95%, as noted above, this resulted in an overall bonus equal to 105% of his bonus target;

- Recognizing his achievement against his personal objectives, including legal support to the ILLUMINATE program, contributing to the closing of our private placements, and corporate governance-related matters, along with his overall leadership contributions, Mr. Lim's individual performance score was 110%. Using the broader corporate score of 95% as noted above, this resulted in an overall bonus equal to 105% of his bonus target;
- Based on her achievement against her personal objectives, including clinical leadership of the ILLUMINATE program, along with her overall leadership contributions, Dr. Tarka's individual performance score was 100%. Using the broader corporate score of 95%, as noted above, this resulted in an overall bonus equal to 95% of her bonus target; and
- Mr. Fletcher's individual performance score, recognizing his achievement against his personal objectives, including his role in business development, and his overall leadership contributions, was 100%. Using the broader corporate score of 95%, as noted above, this resulted in an overall bonus equal to 95% of his bonus target.

The following table sets forth the target bonus amounts, the corporate and individual performance scores, the overall scores, and the resulting bonus payout amounts for each NEO.

NEO	Target Bonus	Overall Score	Bonus Payout
Mr. Milano	\$300,000	95%	\$285,000
Mr. Kirby	\$134,400	105%	\$140,448
Mr. Lim	\$134,400	105%	\$140,448
Dr. Tarka	\$150,000	95%	\$142,500
Mr. Fletcher	\$160,000	95%	\$152,000

Long-Term Equity Compensation

Our equity award program is the primary vehicle for offering long-term incentives to our executive officers, including our NEOs. We believe that equity awards provide our NEOs with a strong link to our long-term performance, create an ownership culture, and help to align the interests of our NEOs and with those of our stockholders. Equity grants are intended as both a reward for contributing to our long-term success and an incentive for future performance. Additionally, the vesting feature of our equity awards is intended to further our goal of executive retention by providing an incentive to our NEOs to remain in our employ during the vesting period. In determining the size of equity awards to our NEOs, our compensation committee considers:

- the achievement of our annual corporate goals;
- individual performance;
- the previous awards granted to each executive officer, including the exercise price of such previous awards;
- the recommendations of management;
- the market compensation data presented by the compensation committee's independent compensation consultant; and
- the combined components of the executive officer's compensation.

The compensation committee approves all equity awards to our NEOs. Our equity awards have historically been in the form of stock options. However, under the terms of our 2013 Stock Incentive Plan, as amended (the "2013 Plan"), we may grant equity restricted stock awards, stock appreciation rights, and RSUs. Beginning in January 2019, we began issuing both stock options and RSUs as part of our annual equity awards to all eligible employees, including our NEOs. This change was made in light of competitive market practices and as an additional means to promote retention in a challenging labor market, as well as in consideration of corporate performance and the Company's long-term stock price trend.

The compensation committee typically makes initial stock option awards to our NEOs upon commencement of their employment and annual stock option awards and RSUs thereafter. Annual stock option awards for all employees, including our NEOs, are granted in two biannual tranches in order to increase the recognition and retention related aspect of the awards. Determination of such award typically occurs at the regularly scheduled meeting of the compensation committee held in the first quarter of each fiscal year. In general, 25% of the stock option grant vests on the first anniversary of the date of grant with the balance of the shares subject to the option vesting in 12 equal quarterly installments over the three-year period thereafter. RSU awards typically vest over a four-year period with 25% of the shares subject to the award vesting on each one-year anniversary of the date of grant. The exercise price of stock options equals the fair market value of our common stock on the date of grant, which is typically equal to the closing price of our common stock on Nasdaq on the date of compensation committee approval except in the case of new hire grants, which are approved in advance by the compensation committee and granted on the first day of employment.

In December 2019, as part of its annual executive compensation and performance review, the compensation committee reviewed the 2019 market compensation data regarding annual stock option grants and RSU awards. In January 2020, the compensation committee approved the grant of the first tranche of the biannual option awards and an award of RSUs to our NEOs and in July 2020, the compensation committee approved the grant of the second tranche of biannual option awards to our NEOs. Additionally, in July 2020, we issued a special performance-based RSU award (the “Special Award”), contemporaneous with the second tranche of the biannual option grants, to eligible employees and NEOs, including Messrs. Fletcher, Kirby, Lim and Milano, which incentivize the achievement of important company goals, retention, and future shareholder value creation. Such Special Award vests upon the achievement of certain performance conditions, provided the NEO continues to be employed by, or provide service to, the Company until the applicable vesting conditions are met. They are as follows:

- i) 50% of the shares underlying the Special Award will vest, if at all, upon the earlier of (A) the date of the acceptance by the United States Food and Drug Administration of the Company’s NDA for tilosotolimod in anti-PD-1 refractory advanced melanoma or (B) the date market capitalization of the Company equals or exceeds \$500,000,000 (the “RSU Market Cap Target”); and
- ii) the remaining 50% of the RSUs will vest, if at all, on the date that the Company achieves the RSU Market Cap Target;

provided, however, under the Form Severance/CIC Agreements, upon a qualifying termination in the event of a change in control, 100% of the shares underlying the restricted stock award shall become vested.

The following table sets forth the number of options and RSUs granted to our NEOs in 2020:

NEO	January Grants		July Grants	
	Stock Options (# options)	RSUs (# units)(1)	Stock Options (# options)	RSUs (# units)(2)
Mr. Milano(3)	92,000	37,000	92,000	100,000
Mr. Kirby	50,000	20,000	50,000	57,203
Mr. Lim	50,000	20,000	50,000	2,523
Dr. Tarka	50,000	20,000	50,000	—
Mr. Fletcher	50,000	20,000	50,000	100,000

- (1) Represents RSUs with time-based vesting.
- (2) Represents RSUs with market- and performance-based vesting.
- (3) Excludes Mr. Milano’s December 2020 RSU award granted in lieu of salary pursuant to a January 10, 2020 amendment to Mr. Milano’s employment agreement. See additional information regarding the payment of Mr. Milano’s 2020 annual salary below under the caption “Employment Agreements with our NEOs.”

Broad-Based Benefits. We maintain broad-based benefits, including health and dental insurance, life and disability insurance, and a 401(k) plan, that are provided to all employees. During 2020, we matched 100% of the employee contributions to our 401(k) plan up to a maximum of 5% of the participating employee's annual salary, subject to annual IRS limitations. Our NEOs are eligible to participate in all our employee benefit plans, in each case, on the same basis as other employees and subject to any limitations in such plans. In 2020, each of our NEOs, except for Mr. Fletcher, contributed to our 401(k) plan and their contributions were matched by us.

Retirement Policy Regarding the Treatment of Equity Awards. Our board has adopted a retirement policy to address the treatment of options and RSUs in the event of an employee's retirement that applies to all employees, including all officers and NEOs. For purposes of this policy, an employee will be deemed to have retired if (i) the employee terminates his or her employment with us, (ii) has been an employee of ours for more than 10 years, and (iii) is older than 65 upon termination of employment. Under the policy, if an employee retires, then:

- all outstanding, unvested equity awards held by the employee will automatically vest in full; and
- the period during which the employee may exercise the options will be extended to the expiration of the term of the option under the applicable option agreement.

Our board adopted this policy for our employees in recognition of the importance of equity awards to the compensation of employees and in order to provide each of our employees with the opportunity to get the full benefit of the options and RSUs held by the employee in the event of his or her retirement after making 10 years of contributions to our Company.

Relocation Expenses. We occasionally pay relocation expenses for newly-hired executive officers who we require to relocate as a condition to their employment offer. We also occasionally pay local housing expenses and travel costs for executive officers who maintain a primary residence outside of a reasonable daily commuting range to our headquarters. We believe that these are typical benefits offered by comparable companies to executive officers who are asked to relocate and that we would be at a competitive disadvantage in trying to attract executive officers who would need to relocate in order to work for us if we did not offer such assistance. We did not provide any relocation benefits to any of our NEOs in 2020.

ESPP. Our NEOs may also participate in our employee stock purchase plan (the "ESPP"), which is generally available to all employees who work over 20 hours per week, so long as they own less than 5% of our common stock, including for this purpose vested and unvested stock options. None of our NEOs participated in the ESPP in 2020.

Perquisites. Apart from the discussed benefits, we do not provide our NEOs with perquisites.

Severance and Change in Control Benefits and Agreements with NEOs

We believe providing severance and/or change in control benefits as a component of our compensation structure can help us compete for executive talent and attract and retain highly-talented executive officers whose contributions are critical to our long-term success. In that regard, we periodically review our severance and/or change in control practices. We believe that our severance and change in control benefits are appropriate.

Severance and Change in Control Agreements

In 2017, the board approved a form of Severance and Change of Control Agreement (the "Form Severance/CIC Agreement"), which the Company subsequently entered into with each of our NEOs. The severance benefits terms contained in the Form Severance/CIC Agreements entered into with each of our NEOs are controlling and superseded the severance and change of control terms provided for under any NEO's pre-existing employment agreement or employment offer letter.

The Form Severance/CIC Agreement provide that if we consummate a change of control (as defined in therein), we will employ the NEO for a period of 24 months from the date of the consummation of the change of control. Pursuant to the Form Severance/CIC Agreement, during such period:

- (i) the NEO's position and duties for the Company will be commensurate with the most significant of the duties and positions held by the NEO during the 90-day period preceding the date of the consummation of the change of control;
- (ii) the NEO's annual base salary will equal at least 12 times the highest monthly base salary paid to the NEO during the 12 months prior to the date of the change of control;
- (iii) the NEO will be entitled to an annual bonus equal to at least the greatest of (a) the average bonus paid to the NEO in respect of the three years immediately preceding the year in which the change of control occurs, (b) the annual bonus paid for the year immediately preceding the year in which the change of control occurs, and (c) 100% of the target bonus for (1) the year immediately preceding the year in which the change of control occurs, (2) the year in which the change of control occurs, or (3) any year following the year in which the change of control occurs and prior to the then-current year, whichever is highest; and
- (iv) the NEO will be entitled to certain other benefits as are consistent with the benefits paid to the NEO during the year prior to the change of control.

The Form Severance/CIC Agreements also provide that if a NEO is terminated without "cause" or resigns for "good reason" (as such terms are defined therein) in either case, within 24 months following a change of control, subject to the NEO's timely execution and non-revocation of a general release of claims in a form provided by us and the NEO's continued compliance with the invention, non-disclosure, and non-competition agreement previously entered into in connection with the commencement of NEO's employment, the NEO would receive a lump sum cash payment payable within 30 days after the date of termination equal to:

- (i) the NEO's target bonus for the year of termination prorated for the portion of the year worked;
- (ii) 150% of the sum of (a) such NEO's annual base salary for the year immediately preceding the year of termination and (b) the greatest of (1) the average bonus paid or earned and accrued, but unpaid to the NEO in respect of the three years immediately preceding the year of termination, (2) the annual bonus paid for the year immediately preceding the year of termination, and (3) the target bonus for the year of termination; and
- (iii) 150% of the Company's share of the annual premium for group medical and/or dental insurance coverage that was in place for the NEO immediately prior to the date of termination.

In addition, all unvested options, restricted stock, RSUs, or stock appreciation rights held by the NEO as of the date of termination will be immediately and automatically vested and/or exercisable in full as of the date of termination, and the NEO will have the right to exercise any such options or stock appreciation rights for the longer of (A) the period of time provided for in the applicable equity award agreement or plan, or (B) the shorter of one year after the date of termination or the remaining term of the applicable equity award.

If the NEO is terminated without "cause" or resigns for "good reason," prior to the date of a change of control, such NEO will be entitled to the following under the Form Severance/CIC Agreement, subject to the NEO's timely execution and non-revocation of a general release of claims in a form provided by us and the NEO's continued compliance with the invention, non-disclosure, and non-competition agreement previously entered into in connection with the commencement of NEO's employment:

- (i) a lump sum cash payment payable within 30 days after the date of termination in an amount equal to the greater of (x) the average bonus paid or earned and accrued, but unpaid to the NEO in respect of the three years immediately preceding the year of termination, and (y) the annual bonus paid for the year immediately preceding the year of termination prorated for the portion of the year worked;

- (ii) continued payment of the NEO's base salary payable in accordance with our standard payroll practices over the one-year period following termination; and
- (iii) if the NEO elects to continue receiving group medical and/or dental insurance under COBRA (to the extent the NEO previously participated in such group insurance plans immediately prior to the date of termination), payment by us of our share of the premium for such coverage that we pay for active and similarly-situated employees who receive the same type of coverage for the one-year period following termination.

Employment Agreements with our NEOs

We have entered into employment agreements with each of our NEOs. All of the NEOs are at-will employees.

Vincent J. Milano

We are a party to an Employment Agreement, dated as of December 1, 2014, with Mr. Milano, our President and Chief Executive Officer (the "Milano Employment Agreement"). Under the Milano Employment Agreement, Mr. Milano is entitled to receive an annual base salary of \$600,000 or such higher amount as our compensation committee or our board may determine. In addition, pursuant to the Milano Employment Agreement, Mr. Milano is eligible to receive an annual bonus of 50% of his base salary, subject to adjustment, based on the achievement of both individual and Company performance objectives as developed and determined by our board.

On January 10, 2020, as a means suggested by Mr. Milano and approved by the board to help conserve cash for the Company, we entered into an Amendment to Employment Agreement with Mr. Milano (the "Milano Employment Amendment" and, together with the Milano Employment Agreement, the "Milano Agreement"), amending the Milano Employment Agreement to specify the manner in which Mr. Milano will be paid his annual base salary for the 2020 fiscal year and to make other corresponding changes. Pursuant to the Milano Employment Amendment, Mr. Milano's annual base salary of \$600,000 was payable as follows: (i) for the period from January 1, 2020 to the January 10, 2020, \$18,182 was payable in cash; and (ii) for the period immediately following the January 10, 2020 to December 31, 2020, an additional \$6,600 (the "Cash Value") was payable in cash and \$575,218 (the "RSU Value" and, together with the Cash Value, the "Post-Amendment Compensation") was payable in the form of a RSU award granted to Mr. Milano on December 18, 2020, pursuant to our 2013 Plan, and in accordance with the terms and conditions set forth in the RSU award agreement entered into between Mr. Milano and us.

Mr. Milano's severance and change in control benefits are governed by the Form Severance/CIC Agreement.

John J. Kirby

We are a party to an Employment Offer Letter, dated October 15, 2015, with Mr. Kirby, our current Senior Vice President and Chief Financial Officer (the "Kirby Employment Agreement"). Under the terms of the Kirby Employment Agreement, Mr. Kirby is entitled to receive an annual base salary of \$225,000 or such higher amount as the Company may determine. In addition, under the Kirby Employment Agreement, Mr. Kirby is eligible to receive an annual bonus of 30% of his base salary, subject to adjustment, based on the achievement of both individual and Company performance objectives. Concurrent with his promotion to Chief Financial Officer in 2019, Mr. Kirby's base salary and bonus target were adjusted to \$336,000 and 40%, respectively, or such higher amount as our compensation committee or our board may determine.

Mr. Kirby's severance and change in control benefits are governed by the Form Severance/CIC Agreement.

Bryant D. Lim

We are a party to an Employment Offer Letter, dated as of August 20, 2018, with Mr. Lim, our Senior Vice President, General Counsel, and Secretary (the “Lim Employment Agreement”). Under the terms of the Lim Employment Agreement, Mr. Lim is entitled to receive an annual base salary of \$330,000 or such higher amount as our compensation committee or our board may determine. In addition, under the Lim Employment Agreement, Mr. Lim is eligible to receive an annual bonus of 40% of his base salary, subject to adjustment, based on the achievement of both individual and Company performance objectives.

Mr. Lim’s severance and change in control benefits are governed by the Form Severance/CIC Agreement.

Elizabeth Tarka

We are a party to an Employment Offer Letter, dated as of June 26, 2019, with Dr. Tarka, our Senior Vice President and Chief Medical Officer (the “Tarka Employment Agreement”). Under the terms of the Tarka Employment Agreement, Dr. Tarka is entitled to receive an annual base salary of \$375,000 or such higher amount as our compensation committee or our board may determine. In addition, under the Tarka Employment Agreement, Dr. Tarka is eligible to receive an annual bonus of 40% of her base salary, subject to adjustment, based on the achievement of both individual and Company performance objectives.

Dr. Tarka’s severance and change in control benefits are governed by the Form Severance/CIC Agreement.

R. Clayton Fletcher

Mr. Fletcher served as our Senior Vice President, Business Development and Strategic Planning until December 31, 2020. The terms of his employment were set forth in an Employment Offer Letter, dated January 26, 2015 (the “Fletcher Employment Agreement”). Under the terms of the Fletcher Employment Agreement, Mr. Fletcher was entitled to receive an annual base salary of \$360,000 or such higher amount as our compensation committee or our board may determine. In addition, under the Fletcher Employment Agreement, Mr. Fletcher was eligible to receive an annual bonus of 35% of his base salary, subject to adjustment, based on the achievement of both individual and Company performance objectives.

In connection with Mr. Fletcher’s retirement as our Senior Vice President, Business Development and Strategic Planning, on December 29, 2020, we entered into a consulting services agreement (the “Fletcher Consulting Agreement”) with Mr. Fletcher. The Fletcher Consulting Agreement terminates one year following the effective date and provides for aggregate payments to Mr. Fletcher of up to \$180,000, to be paid in equal monthly installments over the one-year term of the Fletcher Consulting Agreement. The Fletcher Consulting Agreement also includes confidentiality and non-solicitation restrictions.

Indemnification Agreements

In March 2017, the board approved a form of Indemnification Agreement (the “Form Indemnification Agreement”) to be entered into between the Company and each of our officers. Each of Messrs. Milano, Kirby, Fletcher, and Lim and Dr. Tarka entered into the Form Indemnification Agreement with the Company. In general, the Form Indemnification Agreements provide that the Company will indemnify the NEO to the fullest extent permitted by law for claims arising in his or her capacity as an officer of the Company or in connection with his or her service at our request for another corporation or entity. The Form Indemnification Agreements also provide for procedures that will apply in the event that an officer makes a claim for indemnification and establish certain presumptions that are favorable to the officer.

Formal Clawback Policy

In April 2015, ahead of any such requirement in the Dodd-Frank Wall Street Reform and Consumer Protection Act, our compensation committee adopted a formal clawback policy, which applies in the event we are required to prepare an accounting restatement due to any material noncompliance with any financial reporting requirement under the U.S. federal securities laws. This policy requires us to use reasonable efforts to recover from any of our current or former executive officers who receive incentive-based compensation (including stock options and RSUs awarded as compensation) during the three-year period

preceding the date on which we are required to prepare an accounting restatement based on erroneous data, the excess of what would have been paid to such executive officer under the accounting restatement.

Compensation Committee Report

The compensation committee has reviewed and discussed the Compensation Discussion and Analysis required by Item 402(b) of Regulation S-K with our management. Based on this review and discussion, the compensation committee recommended to our board of directors that the Compensation Discussion and Analysis be included in this proxy statement.

By the compensation committee of the board of directors,

Maxine Gowen, Chair
Cristina Csimma
Michael Dougherty

The report of the Audit Committee is not “soliciting material,” is not deemed “filed” with the SEC and is not to be incorporated by reference into any filing of the Company under the Securities Act of 1933 or the Securities Exchange Act of 1934, both as amended.

Summary Compensation Table

The table below summarizes compensation paid to or earned by our named executive officers for 2020, 2019, and 2018.

Summary Compensation Table

Name and Principal Position	Year	Salary (\$)	Stock Awards \$(1)	Option Awards \$(2)	Non-Equity Incentive Plan Compensation (\$)	All Other Compensation \$(3)	Total (\$)
Vincent J. Milano	2020	24,786	764,713(4)	234,642	285,000	37,929	1,347,070
President and Chief Executive Officer	2019	600,000	105,975	279,160	315,000	37,082	1,337,217
	2018	600,000	—	998,081	150,000	33,863	1,781,944
John J. Kirby	2020	336,000	123,755	127,523	140,448	37,519	765,245
Senior Vice President, Chief Financial Officer	2019	308,000	32,185	113,955	114,660	36,849	605,649
	2018	249,888	—	206,479	64,771	32,735	553,873
Bryant D. Lim	2020	336,000	39,679	127,523	140,448	37,779	681,429
Senior Vice President, General Counsel and Corporate Secretary	2019	336,000	56,834	150,317	155,232	33,412	731,795
	2018	103,125	—	639,969	25,160	6,924	775,178
Elizabeth Tarka	2020	375,000	35,800	127,523	142,500	17,082	697,905
Senior Vice President, Chief Medical Officer							
R. Clayton Fletcher	2020	400,000	189,560	127,523	152,000	23,679	892,762
Senior Vice President, Business Development and Strategy	2019	400,000	56,834	150,317	168,000	23,082	798,233
	2018	400,000	—	461,837	92,000	23,613	977,450

- (1) Represents the aggregate grant date fair value of time-based RSUs granted in January and the Special Awards granted in July as computed in accordance with ASC 718. See Note 12 to the financial statements included in our annual report on Form 10-K for the year ended December 31, 2020 regarding assumptions we made in determining these values. The grant date fair value of RSUs is determined using the fair value of our common stock on the date of grant. The equity incentive awards included in this column were all awarded under the Company's 2013 Equity Incentive, as amended and restated.
- (2) Represents the aggregate grant date fair value of options granted to each of the NEOs as computed in accordance with ASC 718. These amounts do not represent the actual amounts paid to or realized by the named executive officers. See Note 12 to the financial statements included in our annual report on Form 10-K for the year ended December 31, 2020 regarding assumptions we made in determining the fair value of option awards. The equity incentive awards included in this column were all awarded under the Company's 2013 Equity Incentive, as amended and restated.
- (3) "All Other Compensation" for 2020 for each of the named executive officers includes the following:

	Premiums paid by us for all insurance plans (\$)	Company match on 401(k) (\$)	Total (\$)
Mr. Milano	23,679	14,250	37,929
Mr. Kirby	23,269	14,250	37,519
Mr. Lim	23,529	14,250	37,779
Dr. Tarka	2,832	14,250	17,082
Mr. Fletcher	23,679	—	23,679

- (4) Approximately \$575,218 of Mr. Milano's base salary was paid in the form of a restricted stock unit award which was granted to Mr. Milano on December 18, 2020, as more fully described under the caption "Employment Agreements with our NEOs."

Grants of Plan-Based Awards

The following table sets forth information regarding grants of plan-based awards to our named executive officers during 2020.

Grants of Plan-Based Awards for Fiscal Year 2020

Name	Grant Date	Estimated Possible Payouts Under Non-Equity Incentive Plan Awards		Estimated Possible Payouts Under Equity Incentive Plan Awards	All Other Stock Awards: Number of Shares of Stock or Units (#)(1)	All Other Option Awards: Number of Securities Underlying Options (#)(2)	Exercise or Base Price of Securities Underlying Awards (\$/Sh)	Grant Date Fair Value of Awards (\$)(3)
		Target (\$)	Maximum (\$)	Target (#)				
Vincent J. Milano	N/A	300,000	468,750		—	—	—	—
	1/10/2020(4)(5)				37,000	—		66,230
	1/10/2020(4)(6)				—	92,000	1.79	97,536
	7/21/2020(4)(7)			100,000		—		153,760
	7/21/2020(4)(6)				—	92,000	2.48	137,106
	12/18/2020(4)(8)				128,170	—		544,723
John J. Kirby	N/A	134,400	210,000		—	—	—	—
	1/10/2020(4)(5)				20,000	—		35,800
	1/10/2020(4)(6)				—	50,000	1.79	53,009
	7/21/2020(4)(7)			27,203		—		87,955
	7/21/2020(4)(6)				—	50,000	2.48	74,514
Bryant D. Lim	N/A	134,400	210,000		—	—	—	—
	1/10/2020(4)(5)				20,000	—		35,800
	1/10/2020(4)(6)				—	50,000	1.79	53,009
	7/21/2020(4)(7)			2,523		—		3,879
	7/21/2020(4)(6)				—	50,000	2.48	74,514
Elizabeth Tarka	N/A	150,000	234,375		—	—	—	—
	1/10/2020(4)(5)				20,000	—		35,800
	1/10/2020(4)(6)				—	50,000	1.79	53,009
	7/21/2020(4)(6)				—	50,000	2.48	74,514
R. Clayton Fletcher	N/A	160,000	250,000		—	—	—	—
	1/10/2020(4)(5)				20,000	—		35,800
	1/10/2020(4)(6)				—	50,000	1.79	53,009
	7/21/2020(4)(7)			100,000		—		153,760
	7/21/2020(4)(6)				—	50,000	2.48	74,514

- (1) The vesting terms of the restricted stock awards vary and may consist of time-based or performance/market-based vesting criteria. See “Compensation Discussion and Analysis—Components of Executive Compensation—Long-Term Equity Compensation” for a full description of the vesting terms for these stock awards. See “Employment Agreements with our NEOs” for further information about acceleration of vesting of unvested restricted stock awards in the event of the termination of employment and/or a change of control.
- (2) The term of these options is ten years. The vesting of these stock options is time-based. See “Compensation Discussion and Analysis—Components of Executive Compensation—Long-Term Equity Compensation” for a full description of the vesting terms for these options. See “Employment

Agreements with our NEOs” for further information about acceleration of vesting of options in the event of the termination of employment and/or a change of control.

- (3) Represents the aggregate grant date fair value of awards made to the named executive officers in 2020 as computed in accordance with ASC 718. These amounts do not represent the actual amounts paid to or realized by the named executive officers during 2020. See Note 12 to the financial statements included in our annual report on Form 10-K for the year ended December 31, 2020 regarding assumptions we made in determining the fair value of equity awards.
- (4) Granted pursuant to our 2013 Stock Incentive Plan.
- (5) Represents the time-based RSUs, which vest in four equal installments over the four-year period following the grant date.
- (6) Represents the biannual option awards, 25% of which vest on the first anniversary of the date of grant with the balance of the shares subject to the option vesting in 12 equal quarterly installments over the three-year period thereafter.
- (7) Represents the Special Awards, which vest based on the achievement of the following performance measures: (i) 50% upon the earlier of (A) the date of the acceptance by the United States Food and Drug Administration of the Company’s NDA for tilsotolimod in anti-PD-1 refractory advanced melanoma or (B) the date the Company achieves the RSU Market Cap Target; and ii) the remaining 50% on the date that the Company achieves the RSU Market Cap Target.
- (8) Represents the RSU award granted to Mr. Milano in lieu of cash payment of a portion of his base salary.

Outstanding Equity Awards at Fiscal Year-End

The following table sets forth information regarding the outstanding equity held by our named executive officers as of December 31, 2020.

Outstanding Equity Awards at Fiscal Year-End

Name	Option Awards				Stock Awards		Equity Incentive Plan Awards: Number of Unearned Shares, Units or Other Rights that have Not Vested (#)(12)	Equity Incentive Plan Awards: Market or Payout Value of Unearned Shares, Units or Other Rights That Have Not Vested (\$)
	Number of Securities Underlying Unexercised Options Exercisable (#)	Number of Securities Underlying Unexercised Options Unexercisable (#)	Option Exercise Price (\$)	Option Expiration Date	Number of Units of Stock That Have Not Vested (#)(11)	Market Value of Shares or Units of Stock That Have Not Vested \$(1)		
Vincent J. Milano	250,000	—	24.96	12/1/2024				
	37,499	—	23.04	1/6/2026				
	35,156	2,344(2)	12.72	1/4/2027				
	51,562	23,437(3)	17.92	1/3/2028				
	36,562	28,438(4)	7.39	8/13/2028				
	36,968	47,532(5)	3.14	1/3/2029				
	26,406	58,094(6)	2.52	7/9/2029				
	—	92,000(7)	1.79	1/10/2030				
	—	92,000(8)	2.48	7/21/2030				
					62,313	228,689		
							100,000	367,000
John J. Kirby	18,750	—	24.88	11/2/2025				
	11,249	—	23.04	1/6/2026				
	11,718	781(2)	12.72	1/4/2027				
	11,601	5,273(3)	17.92	1/3/2028				
	5,625	4,375(4)	7.39	8/13/2028				
	11,200	14,400(5)	3.14	1/3/2029				
	14,218	31,282(6)	2.52	7/9/2029				
	—	50,000(7)	1.79	1/10/2030				
	—	50,000(8)	2.48	7/21/2030				
					27,688	101,615		
							57,203	209,935
Bryant D. Lim	73,125	56,875(9)	9.29	9/10/2028				
	19,906	25,594(5)	3.14	1/3/2029				
	14,218	31,282(6)	2.52	7/9/2029				
	—	50,000(7)	1.79	1/10/2030				
	—	50,000(8)	2.48	7/21/2030				
					33,575	123,220		
						—		
						—	2,523	9,259

Name	Option Awards				Stock Awards			Equity Incentive Plan Awards: Market or Payout Value of
	Number of Securities Underlying Unexercised Options Exercisable (#)	Number of Securities Underlying Unexercised Options Unexercisable (#)	Option Exercise Price (\$)	Option Expiration Date	Number of Units of Stock That Have Not Vested (#)(11)	Market Value of Shares or Units of Stock That Have Not Vested (\$)(1)	Unearned Shares, Units or Other Rights that have Not Vested (#)(12)	Unearned Shares, Units or Other Rights That Have Not Vested (\$)
Elizabeth Tarka	40,625	89,375(10)	2.54	7/22/2029				
	—	50,000(7)	1.79	1/10/2030				
	—	50,000(8)	2.48	7/21/2030				
					20,000	73,400		
R. Clayton Fletcher	75,000	—	37.36	1/26/2025				
	23,124	—	23.04	1/6/2026				
	21,679	1,445(2)	12.72	1/4/2027				
	23,203	10,546(3)	17.92	1/3/2028				
	18,281	14,219(4)	7.39	8/13/2028				
	19,906	25,594(5)	3.14	1/3/2029				
	14,218	31,282(6)	2.52	7/9/2029				
	—	50,000(7)	1.79	1/10/2030				
	—	50,000(8)	2.48	7/21/2030				
					33,575	123,220		
						—		
						—	100,000	367,000

- (1) Market Value is calculated based on a price per share of \$3.67, which was the closing price of our common stock on December 31, 2020.
- (2) Represents unvested portion of stock option award that vested 25% on January 4, 2018 (first anniversary date following the January 4, 2017 grant date), with the remainder vesting in 12 equal quarterly installments thereafter (until January 4, 2021), provided the named executive is still employed with us on each vesting date.
- (3) Represents unvested portion of stock option award that will vest 25% on the first anniversary date following the January 3, 2018 grant date, with the remainder vesting in 12 equal quarterly installments thereafter (until January 3, 2022), provided the named executive is still employed with us on each vesting date.
- (4) Represents unvested portion of stock option award that will vest 25% on the first anniversary date following the August 13, 2018 grant date, with the remainder vesting in 12 equal quarterly installments thereafter (until August 13, 2022), provided the named executive is still employed with us on each vesting date.
- (5) Represents unvested portion of stock option award that will vest 25% on the first anniversary date following the January 3, 2019 grant date, with the remainder vesting in 12 equal quarterly installments thereafter (until January 3, 2023), provided the named executive is still employed with us on each vesting date.

- (6) Represents unvested portion of stock option award that will vest 25% on the first anniversary date following the July 9, 2019 grant date, with the remainder vesting in 12 equal quarterly installments thereafter (until July 9, 2023), provided the named executive is still employed with us on each vesting date.
- (7) Represents unvested portion of stock option award that will vest 25% on the first anniversary date following the January 10, 2020 grant date, with the remainder vesting in 12 equal quarterly installments thereafter (until January 10, 2024), provided the named executive is still employed with us on each vesting date.
- (8) Represents unvested portion of stock option award that will vest 25% on the first anniversary date following the July 21, 2020 grant date, with the remainder vesting in 12 equal quarterly installments thereafter (until July 21, 2024), provided the named executive is still employed with us on each vesting date.
- (9) Represents unvested portion of stock option award that will vest 25% on the first anniversary date following the September 10, 2018 grant date, with the remainder vesting in 12 equal quarterly installments thereafter (until September 10, 2022), provided the named executive is still employed with us on each vesting date.
- (10) Represents unvested portion of stock option award that will vest 25% on the first anniversary date following the July 22, 2019 grant date, with the remainder vesting in 12 equal quarterly installments thereafter (until July 22, 2023), provided the named executive is still employed with us on each vesting date.
- (11) Includes (i) unvested portion of RSUs granted to Messrs. Milano, Kirby, Lim, and Fletcher on January 3, 2019, which vest in four equal installments over the four-year period following the grant date, and (ii) unvested RSUs granted to Messrs. Milano, Kirby, Lim, and Fletcher and Dr. Tarka on January 10, 2020, which vest in four equal installments over the four-year period following the grant date.
- (12) Represents unvested, performance-based RSUs granted to Messrs. Milano, Kirby, Lim, and Fletcher on July 21, 2020, which vest based on the achievement of the following performance measures: (i) 50% upon the earlier of (A) the date of the acceptance by the United States Food and Drug Administration of the Company's NDA for tilsotolimod in anti-PD-1 refractory advanced melanoma or (B) the date the Company achieves the RSU Market Cap Target; and (ii) the remaining 50% on the date that the Company achieves the RSU Market Cap Target.

Potential Payments Upon Termination or Change in Control

As discussed above, we entered into a Severance and Change of Control Agreement with each of Messrs. Milano, Kirby, Lim, and Fletcher and Dr. Tarka. These agreements are described above under the caption "Severance and Change in Control Benefits and Agreements with NEOs."

Termination of Employment Not In Connection With or Following a Change in Control

The following table sets forth the estimated potential benefits that our NEOs would be entitled to receive upon their termination of employment with our Company (other than a termination in connection with or following a change in control of our Company) if the NEO's employment was terminated on December 31, 2020. This table represents estimates only and does not necessarily reflect the actual amounts that would be paid to our NEOs (except in the case of Mr. Fletcher (*see footnote 3*)), which would only be known at the time that they become eligible for payment following their termination.

Name	Cash Severance(1) (\$)	Benefits(2) (\$)	Total (\$)
Vincent J. Milano	885,000	27,656	912,656
John J. Kirby	476,448	27,656	504,104
Bryant D. Lim	476,448	27,656	504,104
Elizabeth Tarka	517,500	—	517,500
R. Clayton Fletcher(3)	—	—	—

- (1) Cash severance under the Form Severance/CIC Agreements would be payable to Messrs. Milano, Kirby, and Lim and Dr. Tarka upon a termination of the NEO's employment by the NEO for "good reason" or by us without "cause," in either case, subject to the NEO's timely execution and non-revocation of a general release of claims in a form provided by the Company and the NEO's continued compliance with the invention, non-disclosure, and non-competition agreement previously entered into in connection with the commencement of NEO's employment. In such an event, NEOs would receive:
- (i) a lump sum cash payment payable within 30 days after the date of termination equal to the greater of (1) the average bonus paid or earned and accrued, but unpaid to the NEO in respect of the three fiscal years immediately preceding the year of termination, and (2) the annual bonus paid for the year immediately preceding the year of termination (\$285,000 for Mr. Milano, \$140,448 for Mr. Kirby, \$140,448 for Mr. Lim, and \$142,500 for Dr. Tarka); and
 - (ii) salary continuation payments at the NEO's base salary on termination date for a period of 12 months paid in accordance with the Company's normal payroll practices and subject to applicable tax withholding (\$600,000 for Mr. Milano, \$336,000 for Mr. Kirby, \$336,000 for Mr. Lim, and \$375,000 for Dr. Tarka).
- (2) Under the Form Severance/CIC Agreements, upon a qualifying termination by Messrs. Milano, Kirby, and Lim and Dr. Tarka, to the extent the NEOs participated in our group medical/dental insurance immediately prior to the termination date, if NEOs elect to continue receiving group medical and/or dental insurance under the continuation coverage rules known as COBRA, the Company will pay the Company's share of the premium for such coverage that it pays for active and similarly-situated employees who receive the same type of coverage until the end of the period for which the Company is paying the salary continuation payments described within note (1)(ii), above.

The payments described in this column include an estimated value of the employer share of the premiums for our insurance plans as follows:

Name	Medical Insurance Premiums (\$)	Dental Insurance Premiums (\$)	Total (\$)
Vincent J. Milano	25,724	1,932	27,656
John J. Kirby	25,724	1,932	27,656
Bryant D. Lim	25,724	1,932	27,656
Elizabeth Tarka(a)	—	—	—
R. Clayton Fletcher	—	—	—

- (a) Dr. Tarka does not participate in our group medical/dental insurance plans.
- (3) Mr. Fletcher retired from his role as the Company's Senior Vice President of Business Development and Strategic Planning, effective December 31, 2020. On December 29, 2020, the Company and Mr. Fletcher entered into the Fletcher Consulting Agreement, pursuant to which Mr. Fletcher will provide certain consulting services to the Company for a period of one (1) year commencing on the effective date. Accordingly, the amounts set forth in the table for Mr. Fletcher reflect the actual benefits Mr. Fletcher received in connection with his retirement. The vesting schedules of Mr. Fletcher's outstanding equity awards were not accelerated upon his retirement; his awards remain outstanding.

Termination of Employment In Connection With or Following a Change in Control

The following table sets forth the estimated potential benefits that our NEOs would be entitled to receive upon their termination of employment with our Company in connection with or following a change in control of our Company if the NEO's employment was terminated on December 31, 2020. The amounts indicated below are estimates based on the material assumptions described in the notes to the table below, which may or may not actually occur. Some of these assumptions are based on information currently available and, as a result, the actual amounts, if any, that may become payable to a NEO may differ in material respects from the amounts set forth below. Furthermore, for purposes of calculating such amounts, we have assumed:

- a change of control date of December 31, 2020;
- each NEO's employment is terminated by us without "cause" or by the NEO for "good reason", in each case on the date of the change of control; and
- the value of the accelerated vesting of any equity award is calculated assuming a market price per share of our common stock equal to \$3.67 (which equals the closing price of a share of our common stock on the Nasdaq on December 31, 2020).

This table represents estimates only and does not necessarily reflect the actual amounts that would be paid to our NEOs (except in the case of Mr. Fletcher (*see footnote 4*)), which would only be known at the time that they become eligible for payment following their termination.

Name	Cash Severance(1) (\$)	Equity(2) (\$)	Benefits(3) (\$)	Total (\$)
Vincent J. Milano	1,650,822	970,129	41,486	2,662,437
John J. Kirby	743,190	508,656	41,486	1,399,582
Bryant D. Lim	871,248	335,519	41,486	1,226,445
Elizabeth Tarka	871,248	327,894	—	1,265,805
R. Clayton Fletcher(4)	—	—	—	—

- (1) Cash severance under the Form Severance/CIC Agreements would be payable to Messrs. Milano, Kirby, and Lim and Dr. Tarka upon a termination of the NEO's employment by the NEO for "good reason" or by us without "cause," in either case, within 24 months following a change of control (i.e., pursuant to a "double-trigger" arrangement), subject to the NEO's timely execution and non-revocation of a general release of claims in a form provided by the Company and the NEO's continued compliance with the invention, non-disclosure, and non-competition agreement previously entered into in connection with the commencement of NEO's employment. In such an event, NEOs would receive a lump sum cash payment payable within 30 days after the date of termination equal to:
- the NEO's target bonus for the year of termination prorated for the portion of the year worked (\$300,000 for Mr. Milano, \$134,400 for Mr. Kirby, \$134,400 for Mr. Lim, and \$150,000 for Dr. Tarka); and
 - 150% of the sum of (a) such NEO's annual base salary for the year immediately preceding the year of termination and (b) the greatest of (1) the average bonus paid or earned and accrued, but unpaid to the NEO in respect of the three years immediately preceding the year of termination, (2) the annual bonus paid for the year immediately preceding the year of termination, and (3) the target bonus for the year in which the termination occurs (\$1,350,000 for Mr. Milano, \$714,672 for Mr. Kirby, \$714,672 for Mr. Lim, and \$787,500 for Dr. Tarka).
- (2) Amounts in this column quantify the intrinsic value of the unvested stock options and/or unvested RSUs held by the NEO that would accelerate upon a qualifying termination of employment in connection with a change in control based on the assumptions described above.

Under the Form Severance/CIC Agreements, upon a qualifying termination by Messrs. Milano, Kirby, and Lim and Dr. Tarka within 24 months following a change of control, all outstanding stock options and unvested RSUs (including the performance-based Special Awards) held by the NEO as of the date of termination will be automatically vested in full as of the date of termination, and the NEO will have the ability to exercise any such options until the three year anniversary of such NEO's termination and/or be entitled to receive shares underlying such RSUs, but in no event past the remaining term of the applicable equity award.

- (3) Under the Form Severance/CIC Agreements, upon a qualifying termination by Messrs. Milano, Kirby, and Lim and Dr. Tarka within 24 months following a change of control, the NEO will be eligible to receive 150% of the Company's share of the annual premium for group medical and/or dental insurance coverage that was in place for the NEO immediately prior to the date of termination, payable in a lump sum cash payment within 30 days after the date of termination.

The payments described in this column include an estimated value of the employer share of the premiums for our insurance plans as follows:

Name	Medical Insurance Premiums (\$)	Dental Insurance Premiums (\$)	Total (\$)
Vincent J. Milano	38,587	2,899	41,486
John J. Kirby	38,587	2,899	41,486
Bryant D. Lim	38,587	2,899	41,486
Elizabeth Tarka(a)	—	—	—
R. Clayton Fletcher	—	—	—

- (a) Dr. Tarka does not participate in our group medical/dental insurance plans.
- (4) Mr. Fletcher retired from his role as the Company's Senior Vice President of Business Development and Strategic Planning, effective December 31, 2020. On December 29, 2020, the Company and Mr. Fletcher entered into the Fletcher Consulting Agreement, pursuant to which Mr. Fletcher will provide certain consulting services to the Company for a period of one (1) year commencing on the effective date. Accordingly, the amounts set forth in the table for Mr. Fletcher reflect the actual benefits Mr. Fletcher received in connection with his retirement. The vesting schedules of Mr. Fletcher's outstanding equity awards were not accelerated upon his retirement; his awards remain outstanding.

CEO Pay Ratio

As required by Section 953(b) of the Dodd-Frank Wall Street Reform and Consumer Protection Act and Item 402(u) of Regulation S-K, we are providing the ratio of the annual total compensation of our CEO, on December 31, 2020, to that of our median employee. In making this pay ratio disclosure, other companies may use assumptions, estimates, and methodologies different than ours; as a result, the following information may not be directly comparable to the information provided by other companies in our peer group or otherwise. The pay ratio included in this information is a reasonable estimate calculated in a manner consistent with Item 402(u) of Regulation S-K.

The following is a reasonable estimate, prepared in accordance with applicable SEC rules, of the ratio of the annual total compensation of our CEO to the median of the annual total compensation of our other employees. We determined our median employee based on annualized 2020 base salary and annualized 2020 bonus awards for each of our 31 employees (excluding the CEO) as of December 31, 2020. We did not make any other assumptions, adjustments, or estimates with respect to total cash compensation. The annual total cash compensation of our median employee (other than the CEO) for 2020 was \$304,212. As disclosed in the Summary Compensation Table included in this CD&A, our CEO's annual total compensation for 2020 was \$1,347,070. Based on the foregoing, the ratio of the 2020 annual total compensation of our CEO to the median of the annual total compensation of all other employees was 4 to 1.

Compensation Risk Management

Our compensation committee has reviewed and considered whether our compensation programs and policies create risks that are reasonably likely to have a material adverse effect on us. In that regard, we design our programs in a balanced and diversified manner while also creating significant, yet appropriate, incentives for strong performance based on our business and strategic plan. We believe that our compensation programs reflect a balance of short-term, long-term, guaranteed, and performance-based compensation in order not to encourage excessive risk-taking. We believe that this ensures that our NEOs focus on the health of our business that will deliver stockholder value over time and discourages excess risk-taking by our NEOs. Our clawback and anti-hedging policies also help to manage potential risks and promote alignment with stockholder interests. Accordingly, there were no material adjustments made to our compensation policies and practices. We will continue to monitor our compensation policies and practices to determine whether our risk management objectives are being met with respect to incentivizing the Company's employees.

PROPOSAL TWO
APPROVAL, BY NON-BINDING VOTE, OF THE NAMED EXECUTIVE OFFICER 2020
COMPENSATION

We are providing our stockholders the opportunity to vote to approve, on an advisory, non-binding basis, the compensation of our NEOs for 2020 as disclosed in this proxy statement in accordance with the SEC's rules. This proposal, which is commonly referred to as "say-on-pay," is required by the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, which added Section 14A to the Exchange Act. The advisory vote on executive compensation will occur every year until the next vote on the frequency of stockholder votes on executive compensation, which will occur at the Company's 2023 annual meeting of stockholders.

The "Executive Compensation" section set forth elsewhere in this proxy statement, including the "Compensation Discussion and Analysis," describes in detail our executive compensation programs and the decisions made by the compensation committee and the board of directors with respect to the fiscal year ended December 31, 2020.

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

"RESOLVED, that the 2020 compensation paid to the Company's named executive officers, as disclosed pursuant to Item 402 of Regulation S-K, including the compensation discussion and analysis, the compensation tables, and any related material disclosed in this proxy statement, is hereby approved."

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

Recommendation of the Board of Directors

Our board of directors unanimously recommends that stockholders vote to approve the 2020 compensation of our named executive officers by voting FOR this proposal.

PROPOSAL THREE
RATIFICATION OF SELECTION OF INDEPENDENT REGISTERED
PUBLIC ACCOUNTING FIRM

The audit committee of our board of directors has selected the firm of Ernst & Young LLP as our independent registered public accounting firm for the fiscal year ending December 31, 2021. Ernst & Young LLP has served as our independent registered public accounting firm since 2002. Although stockholder approval of the audit committee's selection of Ernst & Young LLP is not required by law, our board of directors believes that it is advisable to give stockholders an opportunity to ratify this selection and is doing so as a matter of good corporate governance. If this proposal is not approved at the 2021 annual meeting, the audit committee of our board of directors may reconsider its selection; however, the audit committee will not be obligated to change or retain a different independent registered public accounting firm. Even if the selection is ratified, the audit committee in its discretion may select a different independent registered public accounting firm at any time during the year if it determines that such a change would be in the best interests of the Company and its stockholders.

Representatives of Ernst & Young LLP are expected to be present at the 2021 annual meeting. They will have the opportunity to make a statement if they desire to do so and will also be available to respond to appropriate questions from stockholders.

Recommendation of the Board of Directors

Our board of directors unanimously recommends that you vote FOR the ratification of the selection of Ernst & Young LLP as our independent registered public accounting firm for the fiscal year ending December 31, 2021.

ACCOUNTING MATTERS

Report of the Audit Committee

The audit committee has reviewed our audited financial statements for the fiscal year ended December 31, 2020 and discussed them with our management and our independent registered public accounting firm.

The audit committee has also received from, and discussed with, our independent registered public accounting firm various communications that our independent registered public accounting firm is required to provide to the audit committee, including the matters required to be discussed by the AS 1301: *Communications with Audit Committees*, as adopted by the Public Company Accounting Oversight Board.

The audit committee has received from Ernst & Young LLP the letter and other written disclosures required by applicable requirements of the Public Company Accounting Oversight Board regarding its communication with the audit committee concerning independence, and has discussed with Ernst & Young LLP its independence from the Company. The audit committee has also considered whether the provision of other non-audit services by Ernst & Young LLP is compatible with maintaining their independence.

Based on the review and discussions referred to above, the audit committee recommended to our board of directors that the audited financial statements be included in our annual report on Form 10-K for the year ended December 31, 2020.

By the audit committee of the board of directors,

Carol Schafer, Chair
Michael R. Dougherty
Mark Goldberg, M.D.

The report of the Audit Committee is not “soliciting material,” is not deemed “filed” with the SEC and is not to be incorporated by reference into any filing of the Company under the Securities Act of 1933 or the Securities Exchange Act of 1934, both as amended.

Independent Registered Public Accounting Firm Fees

The following table sets forth all fees paid or accrued by us for professional services rendered by Ernst & Young LLP during the years ended December 31, 2020 and 2019:

Fee Category	2020	2019
Audit Fees	\$475,000	\$605,387
Audit-Related Fees	\$ 89,000	78,000
Tax Fees	\$ 25,235	26,780
Total Fees	\$598,235	\$710,167

Audit Fees

Audit fees represent the aggregate fees billed for professional services rendered by our independent registered public accounting firm for the audit of our annual financial statements and internal controls over financial reporting, review of financial statements included in our quarterly reports on Form 10-Q, and services that are normally provided in connection with statutory and regulatory filings or engagements.

Audit-Related Fees

Audit-related fees represent the aggregate fees billed for assurance and related professional services rendered by our independent registered public accounting firm that are reasonably related to the performance of the audit or review of our financial statements and that are not reported under “Audit Fees” including consultations regarding internal controls, financial accounting and reporting standards; the issuance of consents in connection with registration statement filings with the SEC and comfort letters in connection with securities offerings.

Tax Fees

Tax fees represent the aggregate fees billed for professional services rendered by our independent registered public accounting firm for tax compliance, tax advice, and tax planning services. Tax compliance services, which relate to preparation of tax returns, accounted for all of the tax fees billed in 2020 and 2019.

Our audit committee believes that the non-audit services described above did not compromise Ernst & Young LLP's independence. Our audit committee charter, which you can find by clicking "Investors" and "Corporate Governance" on our website, www.iderapharma.com, requires that all proposals to engage Ernst & Young LLP for services, and all proposed fees for these services, be submitted to the audit committee for approval before Ernst & Young LLP may provide the services.

Pre-Approval Policies and Procedures

Our audit committee has adopted policies and procedures relating to the approval of all audit and non-audit services that are to be performed by our independent registered public accounting firm. This policy generally provides that we will not engage our independent registered public accounting firm to render audit or non-audit services unless the service is specifically approved in advance by the audit committee or the engagement is entered into pursuant to the pre-approval procedures described below.

From time to time, the audit committee may pre-approve specified types of services that are expected to be provided to us by our independent registered public accounting firm during the next 12 months. Any such pre-approval is detailed as to the particular service or type of services to be provided and is also generally subject to a maximum dollar amount. All of the services described above under the headings "Audit Fees," "Audit-Related Fees," and "Tax Fees" were pre-approved by our audit committee.

TRANSACTIONS WITH RELATED PERSONS

Since January 1, 2019 we have not entered into or engaged in any related party transactions, as defined by the SEC, with our directors, officers, and stockholders who beneficially owned more than 5% of our outstanding common stock, as well as affiliates or immediate family members of those directors, officers, and stockholders, except with respect to the April 2020 Private Placement and July 2020 Private Placement. As discussed in further detail in Item 5 of Part II of our annual report on Form 10-K for the year ended December 31, 2019, on December 23, 2019, we entered into the December 2019 Securities Purchase Agreement with Baker Brothers, pursuant to which we issued and sold shares of our Series B1 Convertible Preferred Stock, par value \$0.01 per share and warrants to purchase shares of our common stock, for aggregate gross proceeds of approximately \$3.9 million. As discussed in further detail in Item 5 and Note 8 of the Notes to Financial Statements included in our annual report on Form 10-K for the year ended December 31, 2020, on April 7, 2020, we entered into the April 2020 Securities Purchase Agreement and on July 13, 2020, we entered into the July 2020 Securities Purchase Agreement, each with Pillar, pursuant to which we issued and sold shares of our common stock, par value \$0.01 per share, warrants and prefunded warrants to purchase shares of our common stock, for aggregate gross proceeds of approximately \$15.1 million.

Policies and Procedures for Related Person Transactions

Our board of directors is committed to upholding the highest legal and ethical conduct in fulfilling its responsibilities and recognizes that related party transactions can present a heightened risk of potential or actual conflicts of interest. Accordingly, as a general matter, it is our preference to avoid related party transactions.

In accordance with our audit committee charter, members of the audit committee, all of whom are independent directors, review and approve all related party transactions for which approval is required under applicable laws or regulations, including SEC and the Nasdaq Listing Rules. Current SEC rules define a related party transaction for smaller reporting companies to include any transaction, arrangement, or relationship in which we are a participant and the amount involved is the lesser of \$120,000 or 1% of total assets, and in which any of the following persons has or will have a direct or indirect interest:

- our executive officers, directors, or director nominees;
- any person who is known to be the beneficial owner of more than 5% of our common stock;
- any person who is an immediate family member, as defined under Item 404 of Regulation S-K, of any of our executive officers, directors, or director nominees or beneficial owners of more than 5% of our common stock; or
- any firm, corporation, or other entity in which any of the foregoing persons is employed or is a partner or principal or in a similar position or in which such person, together with any other of the foregoing persons, has a 5% or greater beneficial ownership interest.

Under our code of business conduct and ethics, our directors, officers, and employees are expected to avoid any relationship, influence or activity that would cause or even appear to cause a conflict of interest. Under our code of business conduct and ethics, a director is required to promptly disclose to our board of directors any potential or actual conflict of interest involving him or her. In accordance with our code of business conduct and ethics, the board of directors will determine an appropriate resolution on a case-by-case basis. All directors must recuse themselves from any discussion or decision affecting their personal, business, or professional interests. In addition, the audit committee is responsible for reviewing with our primary counsel the results of their review of the monitoring of compliance with our code of business conduct and ethics.

DELINQUENT SECTION 16(A) REPORTS

Section 16(a) of the Exchange Act requires our directors, officers, and the holders of more than 10% of our common stock, which we refer to collectively as reporting persons, to file with the SEC initial reports of ownership of our common stock and other equity securities on a Form 3 and reports of changes in such ownership on a Form 4 or Form 5. To our knowledge, based solely on reports filed on EDGAR and written representations by the persons required to file these reports, during 2020, the reporting persons complied with all Section 16(a) filing requirements, except that Forms 4 filed by Messrs. Dougherty, Geraghty, Goldberg, and Pien, Dr. Csimma, Ms. Schafer, and Dr. Gowen, with respect to their annual grant of options on May 12, 2020 pursuant to our Director Compensation Policy, were each filed three days late, on May 19, 2020 due to an administrative error.

IDERA PHARMACEUTICALS, INC.**ANNUAL MEETING OF STOCKHOLDERS**

**Tuesday, June 8, 2021
9:00 a.m., Eastern Time**

**via teleconference
Phone: (844) 882-7837
International: (574) 990-9824
Conference ID: 1120087**

**Small steps make an impact.**

Help the environment by consenting to receive electronic delivery, sign up at www.investorvote.com/IDRA



▼ IF VOTING BY MAIL, SIGN, DETACH AND RETURN THE BOTTOM PORTION IN THE ENCLOSED ENVELOPE. ▼

Proxy – Idera Pharmaceuticals, Inc.

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2021 Annual Meeting of Stockholders of Idera Pharmaceuticals, Inc.

June 8, 2021 at 9:00 a.m. Eastern Time

via teleconference

Phone: (844) 882-7837

International: (574) 990-9824

Conference ID: 1120087

This proxy is solicited by the Board of Directors for use at the Annual Meeting of Stockholders.

The undersigned hereby appoints Mr. Vincent J. Milano and Mr. John J. Kirby, and each of them, with full power of substitution, to vote, as designated below, all the shares of Idera Pharmaceuticals, Inc. (the "Company") common stock held of record by the undersigned at the close of business on April 12, 2021, at the 2021 Annual Meeting of Stockholders (the "Annual Meeting"), to be held on June 8, 2021 at 9:00 a.m. Eastern Time via teleconference (as set forth above), and at any and all adjournments or postponements thereof. The undersigned hereby revokes any and all earlier dated proxies with respect to the Annual Meeting. This proxy, when properly executed, will be voted in the manner directed herein by the undersigned. If no direction is made, this proxy will be voted **FOR each of the nominees for election as a Class II member of the Board of Directors, FOR the approval of the advisory vote on the compensation of the Company's named executive officers for 2020, and FOR the ratification of the selection of Ernst & Young LLP as the Company's independent registered public accounting firm for the fiscal year ending December 31, 2021.**

If any other business is presented at the Annual Meeting, including matters incidental to the conduct of the meeting or otherwise, this proxy will be voted by those named in this proxy in their best judgment. At the present time, the Board of Directors knows of no other business to be presented at the Annual Meeting.

THIS PROXY WHEN PROPERLY EXECUTED WILL BE VOTED AS DIRECTED OR, IF NO DIRECTION IS GIVEN, WILL BE VOTED AS THE BOARD OF DIRECTORS RECOMMENDS.

See reverse for voting instructions.

C Non-Voting Items

Change of Address – Please print new address below.

Meeting Attendance

Mark box to the right if you plan to attend the Annual Meeting by conference call.

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