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

**SCHEDULE 14A
(RULE 14a-101)
SCHEDULE 14A INFORMATION**

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

Filed by the Registrant Filed by a Party other than the Registrant

Check the appropriate box:

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

FIVE PRIME THERAPEUTICS, 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:

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 - Fee paid previously with preliminary materials.
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 - (1) Amount Previously Paid:

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

 - (3) Filing Party:

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Five Prime Therapeutics, Inc.

April , 2019

Dear Stockholder:

You are cordially invited to attend the 2019 Annual Meeting of Stockholders of Five Prime Therapeutics, Inc., which we will hold on June 7, 2019 at 8:00 a.m., Pacific time, at our corporate headquarters, located at 111 Oyster Point Boulevard, South San Francisco, California 94080.

The attached Notice of Annual Meeting of Stockholders and proxy statement describe the formal business that we will transact at the Annual Meeting.

The Board of Directors of Five Prime Therapeutics, Inc. has determined that an affirmative vote for each of our nominees to our Board of Directors and on each matter that calls for an affirmative vote is in the best interest of Five Prime Therapeutics, Inc. and its stockholders and unanimously recommends a vote "For" all such matters considered at the Annual Meeting.

Please promptly submit your proxy by telephone, Internet or by mail whether or not you plan to attend the Annual Meeting. **Your vote is important regardless of the number of shares you own. Voting by proxy will not prevent you from voting in person at the Annual Meeting, but it will assure that your vote is counted if you cannot attend.**

On behalf of the Board of Directors and the employees of Five Prime Therapeutics, Inc., we thank you for your continued support and look forward to seeing you at the Annual Meeting.

Sincerely,

A handwritten signature in cursive script, appearing to read "Aron M. Knickerbocker".

Aron M. Knickerbocker
President and Chief Executive Officer

IF YOU HAVE ANY QUESTIONS, PLEASE CALL US AT (415) 365-5600

FIVE PRIME THERAPEUTICS, INC.
111 Oyster Point Boulevard
South San Francisco, California 94080
(415) 365-5600

NOTICE OF ANNUAL MEETING OF STOCKHOLDERS

DATE	Friday, June 7, 2019
TIME	8:00 A.M., Pacific time
PLACE	111 Oyster Point Boulevard South San Francisco, California 94080
ITEMS OF BUSINESS	<ol style="list-style-type: none">(1) To elect the three nominees named in the attached proxy statement as directors, each to serve on the Board of Directors for a three-year term.(2) To hold an advisory vote on the compensation paid to our named executive officers.(3) To ratify the appointment of Ernst & Young LLP as our independent registered public accounting firm for the fiscal year ending December 31, 2019.(4) To approve the stock option exchange program, as described in the attached proxy statement.(5) To transact any other business properly brought before the Annual Meeting or any adjournment or postponement thereof.
RECORD DATE	The record date for the Annual Meeting is April 8, 2019. Only stockholders of record as of the close of business on that date may vote at the Annual Meeting or any adjournment thereof.
PROXY VOTING	<p>You are cordially invited to attend the Annual Meeting in person. Information on how to vote in person at the Annual Meeting is discussed in the attached proxy statement. Whether or not you expect to attend the Annual Meeting, please promptly submit your proxy by telephone or Internet or by signing and returning the enclosed proxy card or voter instruction form, as applicable. If you are voting via the Internet or by telephone, you will be asked to provide your control number from the enclosed proxy card. Submitting a proxy will not prevent you from attending the Annual Meeting and voting in person. Please note, however, that if your shares are held of record by a broker, bank or other nominee and you wish to vote at the Annual Meeting, you must obtain a proxy issued in your name from that record holder.</p> <p>A list of stockholders entitled to vote at the Annual Meeting will be available for inspection by any stockholder at the offices of Five Prime Therapeutics, Inc. for a period of 10 days prior to the Annual Meeting until the close of the Annual Meeting.</p>

By Order of the Board of Directors,



Francis W. Sarena
*Chief Strategy Officer and
Secretary*

South San Francisco, California
April , 2019

**IMPORTANT NOTICE REGARDING THE AVAILABILITY OF PROXY MATERIALS FOR THE
STOCKHOLDER MEETING TO BE HELD ON JUNE 7, 2019**

While we are sending you a full set of proxy materials, this notice of annual meeting of stockholders, the attached proxy statement and our annual report to stockholders for the year ended December 31, 2018 are also available free of charge at investor.fiveprime.com/sec.cfm. Information included on our website, other than this notice of annual meeting of stockholders, the proxy statement and the annual report to stockholders for the year ended December 31, 2018, is not part of our proxy soliciting materials.

TABLE OF CONTENTS

	<u>Page</u>
<u>QUESTIONS AND ANSWERS ABOUT THE ANNUAL MEETING</u>	1
<u>PROPOSAL 1 – ELECTION OF DIRECTORS</u>	7
General	7
Information About Our Nominees For Election	7
Board Composition Following Annual Meeting	10
Vote Required	11
Our Recommendation	11
Information About Our Board of Directors	11
Information About Our Executive Officers Who Are Not Directors	14
Corporate Governance	15
<u>PROPOSAL 2 – ADVISORY VOTE ON EXECUTIVE COMPENSATION</u>	26
General	26
Vote Required	26
Our Recommendation	26
<u>PROPOSAL 3 – RATIFICATION OF APPOINTMENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM</u>	27
General	27
Vote Required	27
Our Recommendation	28
Pre-Approval Policies and Procedures	28
Independent Registered Public Accounting Firm Fees and Services	28
<u>PROPOSAL 4 – APPROVAL OF STOCK OPTION EXCHANGE PROGRAM</u>	29
General	29
Rationale for Option Exchange	29
Alternatives Considered	31
Structure of the Option Exchange	31
Election to Participate	34
Impact of Option Exchange on Number of Options Issued	34
Effect on Stockholders	35
Accounting Impact	35
Material U.S. Federal Income Tax Consequences of the Option Exchange	35
Financial Statements	35
Vote Required	35
Our Recommendation	35
<u>EXECUTIVE COMPENSATION</u>	36
Compensation Discussion and Analysis	36
Summary Compensation Table	57
Grants of Plan-Based Awards	58
Outstanding Equity Awards at Fiscal Year-End	60
Option Exercises and Stock Vested	62
Potential Payments Upon Termination or Change in Control	63
Pay Ratio of Chief Executive Officer to Median Employee	64
Equity Benefit Plans	65
<u>DIRECTOR COMPENSATION</u>	67
Cash and Equity Compensation	67
Director Compensation	68
Indemnification	68
<u>TRANSACTIONS WITH RELATED PERSONS</u>	69
Policies and Procedures Regarding Transactions with Related Persons	69
Certain Related-Person Transactions	69
<u>SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT</u>	71
<u>SECTION 16(a) BENEFICIAL OWNERSHIP REPORTING COMPLIANCE</u>	75
<u>SECURITIES AUTHORIZED FOR ISSUANCE UNDER EQUITY COMPENSATION PLANS</u>	75
<u>HOUSEHOLDING OF PROXY MATERIALS</u>	76
<u>OTHER MATTERS</u>	76

**PROXY STATEMENT FOR THE
2019 ANNUAL MEETING OF STOCKHOLDERS TO
BE HELD ON JUNE 7, 2019**

QUESTIONS AND ANSWERS ABOUT THE ANNUAL MEETING

Why am I receiving these materials?

We have sent you this proxy statement, our Annual Report on Form 10-K for the fiscal year ended December 31, 2018 and the proxy card or voter instruction form, as applicable, or collectively, the Proxy Materials, because our Board of Directors, or the Board, is soliciting your proxy to vote at our 2019 Annual Meeting of Stockholders, or the Annual Meeting. This proxy statement summarizes the information you will need to know to cast an informed vote at the Annual Meeting. You do not need to attend the Annual Meeting to vote your shares. You may vote by proxy over the telephone, over the Internet or by mail, and your votes will be cast for you at the Annual Meeting. This process is described below in the section titled “How do I vote?”

We plan to mail the Proxy Materials to all stockholders entitled to vote on or about April 29, 2019. If you owned our common stock as of the close of business on April 8, 2019, the record date, you are entitled to vote at the Annual Meeting. As used in this proxy statement, “we,” “us” and “our” refer to Five Prime Therapeutics, Inc. The term “Annual Meeting,” as used in this proxy statement, includes any adjournment or postponement of such meeting.

Will I receive any other proxy materials?

Rules adopted by the Securities and Exchange Commission, or the SEC, allow companies to send stockholders a notice of Internet availability of proxy materials rather than mail them full sets of proxy materials. This year, we chose to mail full packages of Proxy Materials to stockholders. However, in the future we may take advantage of the Internet distribution option. If in the future we choose to send such a notice, it would contain instructions on how stockholders can access our notice of annual meeting and proxy statement via the Internet. Such notice would also contain instructions on how stockholders could request to receive their materials electronically or in printed form on a one-time or ongoing basis.

Who can vote at the Annual Meeting?

Only stockholders of record as of the close of business on April 8, 2019 will be entitled to vote at the Annual Meeting. On this date, there were 36,064,239 shares of common stock issued and outstanding and entitled to vote.

Stockholder of Record: Shares Registered in Your Name

If on April 8, 2019, your shares were registered directly in your name with our transfer agent, Computershare Trust Company, N.A., then you are a stockholder of record. As a stockholder of record, you may vote (a) in person at the Annual Meeting or (b) by proxy. Whether or not you plan to attend the Annual Meeting, we urge you to vote by proxy over the telephone, over the Internet or by mail as instructed below to ensure your vote is counted.

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

If on April 8, 2019, your shares were not held in your name, but rather in an account at a brokerage firm, bank, dealer or other similar organization, then you are the beneficial owner of shares held in “street name.” The organization holding your account is considered to be the stockholder of record for purposes of voting at the Annual Meeting.

[Table of Contents](#)

As a beneficial owner, you may vote by proxy by completing and mailing the voter instruction form you receive in the mail with your Proxy Materials to ensure that your vote is counted. Alternatively, you may vote by telephone or over the Internet as provided on your voter instruction form or instructed by your broker or bank, if applicable. To vote in person at the Annual Meeting, you must obtain a valid proxy from your broker, bank or other agent. Contact your broker or bank to request a proxy form.

What is the quorum requirement?

A quorum of stockholders is necessary to hold a valid meeting. A quorum will be present if stockholders holding at least a majority of our outstanding shares of common stock entitled to vote at the Annual Meeting are present at the Annual Meeting in person or represented by proxy.

We will count your shares towards the quorum only if you submit a valid proxy or voter instruction form, as applicable, or if you vote in person at the Annual Meeting or vote by proxy over the telephone or the Internet as instructed below. We will count abstentions and broker non-votes towards the quorum requirement. If there is no quorum, the chairman of the Annual Meeting or the holders of a majority of shares present at the Annual Meeting in person or represented by proxy may adjourn the Annual Meeting to another date.

What am I voting on and how many votes are needed to approve or take action with respect to each proposal?

Proposal 1: Election of Directors. Directors will be elected by a plurality of the votes cast at the Annual Meeting by the holders of shares present in person or represented by proxy and entitled to vote on the election of directors. “Plurality” means that the individuals who receive the largest number of “For” votes cast are elected as directors, up to the maximum number of directors to be elected at the Annual Meeting. Accordingly, the three nominees receiving the most “For” votes will be elected as directors. Under our Corporate Governance Guidelines, however, a nominee for director in an uncontested election is required to submit an offer of resignation for consideration by the nominating and corporate governance committee of our Board if such nominee for director receives a greater number of “Withhold” votes from his or her election than votes “For” such election, as further described in Proposal 1 below. In such case, the nominating and corporate governance committee of our Board will consider all relevant facts and circumstances and recommend to the full Board the action to be taken with respect to such offer of resignation. The Board will evaluate such offer of resignation and the nominating and corporate governance committee’s recommendation and decide whether or not to accept such offer of resignation. Abstentions and broker non-votes will not affect the outcome of the election of directors. In tabulating the voting results for the election of directors, only “For” and “Withhold” votes will be counted. You may not vote your shares cumulatively for the election of directors.

Proposal 2: Advisory Vote on Executive Compensation. Our Board is seeking a non-binding advisory vote regarding the compensation of our named executive officers, as described in the “Compensation Discussion and Analysis” section, executive compensation tables and accompanying narrative disclosures contained in this proxy statement. Advisory approval of the compensation of our named executive officers will require “For” votes from a majority of the votes cast at the Annual Meeting by the holders of shares present in person or represented by proxy and entitled to vote on this proposal. Abstentions and broker non-votes will have no effect on the vote. This vote is non-binding and advisory in nature, but the compensation and management development committee of our Board, or the compensation committee, and our Board will take into account the outcome of the vote when considering future executive compensation arrangements, to the extent they can determine the cause or causes of any significant negative voting results.

Proposal 3: Ratification of Appointment of Independent Registered Public Accounting Firm. The ratification of Ernst & Young LLP as our independent registered public accounting firm for the fiscal year ending December 31, 2019 will require “For” votes from a majority of the votes cast at the Annual Meeting by the holders of shares present in person or represented by proxy and entitled to vote on this proposal. Abstentions and broker non-votes will have no effect on the vote.

[Table of Contents](#)

Proposal 4: Approval of Stock Option Exchange Program. The approval of our stock option exchange program will require “For” votes from a majority of the votes cast at the Annual Meeting by the holders of shares present in person or represented by proxy and entitled to vote on this proposal. Abstentions and broker non-votes will have no effect on the vote.

What are broker non-votes?

Broker non-votes occur when a beneficial owner of shares held in “street name” mails in his or her voter instruction form but does not give instructions to the broker or nominee holding the shares as to how to vote on matters deemed “non-routine.” Generally, if shares are held in street name, the beneficial owner of the shares is entitled to give voting instructions to the broker or nominee holding the shares. If the beneficial owner mails in his or her voter instruction form, but does not provide voting instructions, the broker or nominee may vote the shares with respect to matters that are considered to be “routine,” but may not vote the shares with respect to “non-routine” matters. In the event a beneficial owner of shares held in “street name” does not mail in the voter instruction form included with their Proxy Materials or otherwise vote over the telephone, over the Internet or in person, then the broker or nominee holding such beneficial owner’s shares would not be entitled to vote on such beneficial owner’s behalf. Proposals 1, 2 and 4 are considered “non-routine” and Proposal 3 is considered “routine” under The Nasdaq Marketplace Rules, or the Nasdaq Listing Rules.

How many votes do I have?

On each matter to be voted upon, you have one vote for each share of common stock you own as of the close of business on April 8, 2019. The number of shares you own (and may vote) is listed on your proxy card or voter instruction form, as applicable.

What does it mean if I receive more than one proxy card or voter instruction form?

You may receive more than one proxy card or voter instruction form, as applicable, if your shares are registered in more than one name or are registered in different accounts. Please complete, sign and return each proxy card or voter instruction form, as applicable, to ensure that all your shares are voted.

How does the Board recommend that I vote my shares?

Our Board’s recommendations are set forth together with the description of each proposal in this proxy statement. Our Board recommends a vote:

- “For” the election of the three nominees to our Board;
- “For” the approval, on an advisory (non-binding) basis, of the compensation paid to our named executive officers;
- “For” the ratification of the appointment of Ernst & Young LLP as our independent registered public accounting firm for the fiscal year ending December 31, 2019; and
- “For” the approval of our stock option exchange program.

Unless you give other instructions on your proxy card or voter instruction form, as applicable, the persons named as proxies on your proxy card or voter instruction form, as applicable, will vote in accordance with the recommendations of our Board. With respect to any other matter that properly comes before the Annual Meeting, the proxies will vote as recommended by our Board or, if no recommendation is given, in their own discretion based on the company’s and our stockholders’ best interests. As of the date of this proxy statement, we know of no other matters that may be presented at the Annual Meeting other than those listed in the Notice of Annual Meeting of Stockholders.

[Table of Contents](#)

How do I vote?

You may either vote “For” any or all of the nominees to our Board or you may “Withhold” your vote for any nominee you specify for Proposal 1. For all other matters to be voted on, you may vote “For” or “Against” or abstain from voting on the applicable proposal. The procedures for voting are as follows:

Stockholder of Record: Shares Registered in Your Name

If you are a stockholder of record, you may vote (a) in person at the Annual Meeting or (b) by proxy. Whether or not you plan to attend the Annual Meeting, we urge you to vote by proxy over the telephone, over the Internet or by mail as instructed below to ensure your vote is counted. You may still attend the Annual Meeting and vote in person even if you have already voted by proxy.

- To vote in person, come to the Annual Meeting and we will give you a ballot when you arrive.
- To vote over the telephone, dial toll-free 1-800-690-6903 using a touch-tone phone and follow the recorded instructions. You will be asked to provide your control number from the enclosed proxy card. Your vote must be received by 11:59 P.M. Eastern time on June 6, 2019 for shares held directly, and by 11:59 P.M. Eastern time on June 4, 2019 for shares held in the Five Prime Therapeutics, Inc. 401(k) Plan through Fidelity, to be counted.
- To vote on the Internet, go to www.proxyvote.com to complete an electronic proxy card. You will be asked to provide your control number from the enclosed proxy card. Your vote must be received by 11:59 P.M. Eastern time on June 6, 2019 for shares held directly, and by 11:59 P.M. Eastern time on June 4, 2019 for shares held in the Five Prime Therapeutics, Inc. 401(k) Plan through Fidelity, to be counted.
- To vote by mail, simply complete, sign and date the enclosed proxy card and return it promptly in the envelope provided. If we receive your signed proxy card before the Annual Meeting, the designated proxy holders will vote your shares as you direct.

If you sign the enclosed proxy card but do not make specific choices, your proxy will vote your shares “For” all nominees in Proposal 1 and “For” Proposals 2, 3 and 4, as set forth in the Notice of Annual Meeting of Stockholders.

If any other matter is presented, your proxy will vote as recommended by our Board or, if our Board does not make a recommendation, in his or her own discretion based on the company’s and our stockholders’ best interests. As of the date of this proxy statement, we know of no other matters that may be presented at the Annual Meeting other than those listed in the Notice of Annual Meeting of Stockholders.

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

If you are a beneficial owner of shares held in “street name,” you may vote by completing and mailing the voter instruction form you receive with your Proxy Materials. Alternatively, you may vote by telephone or over the Internet, as provided on your voter instruction form or instructed by your broker, bank or other agent, if applicable. Contact your broker, bank or other agent to confirm the voting deadlines applicable to you.

To vote in person at the Annual Meeting, you must obtain a valid proxy from your broker, bank or other agent. Contact your broker, bank or other agent to request a proxy form.

[Table of Contents](#)

May I change my vote after submitting my proxy card or voter instruction form?

Yes. You may revoke your proxy at any time before the final vote at the Annual Meeting. If you are the stockholder of record of your shares, you may revoke your proxy in any one of the following four ways:

- send a timely written revocation of the proxy to our Secretary;
- enter a new vote by telephone or over the Internet;
- attend and vote in person at the Annual Meeting; or
- submit another signed proxy card bearing a later date.

If your shares are not registered in your own name, you will need the appropriate documentation from the stockholder of record to vote personally at the Annual Meeting. Examples of such documentation include a broker's statement, letter or other document that will confirm your ownership of the shares. If your shares are held by your broker, bank or another party as a nominee or agent, you should follow the instructions provided by such party.

Your personal attendance at the Annual Meeting does not revoke your proxy. Your last vote, whether prior to or at the Annual Meeting, is the vote that we will count.

Who will bear the expense of soliciting proxies?

We will bear the cost of solicitation of proxies, including preparation, assembly, printing and mailing of the Proxy Materials and any additional information furnished to stockholders. Copies of solicitation materials will be furnished to banks, brokerage houses, fiduciaries and custodians holding in their names shares of our common stock beneficially owned by others to forward to such beneficial owners. We may reimburse persons representing beneficial owners of our common stock for their costs of forwarding solicitation materials to such beneficial owners. In addition to our solicitation of proxies by mail, our directors, officers or other employees and Alliance Advisors, LLC, or Alliance, our third party proxy solicitation firm, may also solicit proxies in person, by telephone, or by other means of communication. We will not pay any additional compensation to our directors, officers or other employees for such services, but we will pay Alliance its customary fee of approximately \$10,000 plus out-of-pocket expenses for soliciting proxies.

How can I find the voting results from the Annual Meeting?

We will announce preliminary voting results at our Annual Meeting. We will publish final voting results in a Current Report on Form 8-K that we expect to file no later than June 13, 2019. If final voting results are not available by June 13, 2019, we will disclose the preliminary results in the Current Report on Form 8-K and, within four business days after the final voting results are known to us, file an amended Current Report on Form 8-K to disclose the final voting results.

When are stockholder proposals due for the 2020 Annual Meeting of Stockholders?

If you wish to submit proposals for inclusion in our proxy statement for the 2020 annual meeting of stockholders, or the 2020 Annual Meeting, we must receive them at our offices on or before December 31, 2019, pursuant to the proxy soliciting regulations of the SEC. Nothing in this paragraph shall require us to include in our proxy statement and proxy card or voter instruction form, as applicable, for the 2020 Annual Meeting any stockholder proposal that does not meet the requirements of the SEC in effect at the time. Any such proposal will be subject to Rule 14a-8 of the Securities Exchange Act of 1934, as amended, or the Exchange Act.

[Table of Contents](#)

If you wish to nominate a director or submit a proposal for presentation at the 2020 Annual Meeting without including such proposal in next year's proxy statement, you must be a stockholder of record and provide timely notice in writing to our Secretary at c/o Five Prime Therapeutics, Inc., 111 Oyster Point Boulevard, South San Francisco, California 94080. To be timely, we must receive the notice not less than 90 days nor more than 120 days prior to the first anniversary of the Annual Meeting, that is, between February 8, 2020 and March 9, 2020; *provided, however*, that in the event the date of the 2020 Annual Meeting is more than 30 days before or more than 60 days after such anniversary date, we must receive your notice (a) no earlier than the close of business on the 120th day prior to the currently proposed 2020 Annual Meeting and (b) no later than the close of business on the later of the 90th day prior to the 2020 Annual Meeting or the 10th day following the day on which we first make a public announcement of the date of the 2020 Annual Meeting. Your written notice must contain specific information required in Section 2.13 of our amended and restated bylaws, or bylaws. For additional information about our director nomination requirements, please see our bylaws.

How can I get additional information about the company?

This proxy statement and our annual report to stockholders for the year ended December 31, 2018 are available free of charge at investor.fiveprime.com/sec.cfm. In addition, the SEC maintains a website at www.sec.gov where you can access reports, proxy statements and other information regarding registrants, including our company, including other documents filed pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act.

PROPOSAL 1
ELECTION OF DIRECTORS

General

Our Board currently comprises eight directors, with one vacancy. Our amended and restated certificate of incorporation, or certificate of incorporation, provides for a classified Board consisting of three classes of directors. Each class of directors consists of three directors. Class 1 currently has one vacancy as a result of the resignation of Mark McDade from our Board effective November 30, 2018. Vacancies on our Board may be filled only by an affirmative vote of a majority of the directors then in office. A director elected by our Board to fill a vacancy in a class, including vacancies created by an increase in the number of directors, serves for the remainder of the full term of that class and until the director's successor is duly elected and qualified. Each class serves a staggered three-year term. At each annual meeting of stockholders, the successors to directors whose terms then expire are elected to serve from the time of election and qualification until the third annual meeting following their election.

Our Board has nominated the three individuals listed in the table below for election as directors at the Annual Meeting. If our stockholders elect the nominees listed below, they will hold office until the annual meeting of stockholders in 2022 or until their successors have been duly elected and qualified. All nominees are currently serving on our Board and have consented to being named in this proxy statement and to serve if elected. Proxies may not be voted for any nominees other than those named below.

If any nominee is unable or does not qualify to serve, you or your proxy may vote for another nominee proposed by our Board. If for any reason any of these nominees proves unable or unwilling to stand for election or ceases to qualify to serve as a director, our Board will nominate an alternate or reduce the size of our Board to eliminate any vacancies. Our Board has no reason to believe that any of the nominees would prove unable to serve if elected. There are no arrangements or understandings between us and any director, or nominee for directorship, pursuant to which such person was selected as a director or nominee.

Information About Our Nominees For Election

Set forth below are the names, ages and length of service of our nominees for election to our Board.

Nominees	Age(1)	Term Expires	Position(s) Held	Director Since
Franklin M. Berger, CFA	69	2019	Director	2010
William Ringo	73	2019	Chairman of the Board	2014
Lewis T. Williams, M.D., Ph.D.	69	2019	Founder and Director	2002

(1) Ages as of April 29, 2019.

Biographical information for each nominee for election to our Board, including each such individual's principal occupation, business experience and education, and an explanation of the qualifications, skills and experience that we believe are relevant to such individual's service on our Board, are set forth below. Unless otherwise indicated, principal occupations shown for each nominee for election have extended for five or more years.

[Table of Contents](#)

Franklin M. Berger, CFA has served as a member of our Board since September 2010. Mr. Berger is a consultant to biotechnology industry participants, including major biopharmaceutical firms, mid-capitalization biotechnology companies, specialist asset managers and venture capital companies, providing business development, strategic, financing, partnering and royalty acquisition advice. Mr. Berger is also a biotechnology industry analyst with over 25 years of experience in capital markets and financial analysis. Mr. Berger worked at Sectoral Asset Management Inc. as a founder of the small-cap focused NEMO Fund from 2007 through June 2008. From May 1998 to March 2003, he served at J.P. Morgan Securities LLC, most recently as Managing Director, Equity Research and Senior Biotechnology Analyst. Previously, Mr. Berger served in similar capacities at Salomon Smith Barney Inc. and Josephthal & Co. Mr. Berger also serves on the board of directors of BELLUS Health, Inc., ESSA Pharma Inc., Kezar Life Sciences, Inc., Proteostasis Therapeutics, Inc., and Tocagen, Inc., each of which is a public biotechnology company. Mr. Berger previously served as a member of the board of directors of BioTime, Inc., Immune Design Corp., or Immune Design, and Seattle Genetics, Inc., each of which was a public company during Mr. Berger's service as a director. Mr. Berger received a B.A. in International Relations and an M.A. in International Economics, both from Johns Hopkins University, and an M.B.A. from the Harvard Business School. We believe that Mr. Berger's financial background and experience as an equity analyst in the biotechnology industry combined with his experience serving on the boards of directors of multiple public companies gives him the qualifications, skills and financial expertise to serve on our Board and are important to our strategic planning and financing activities.

William Ringo has served as Chairman of the Board since January 2019 and a member of our Board since October 2014. From June 2010 to December 2016, Mr. Ringo served as a senior advisor to Barclays Healthcare Group. From April 2008 until his retirement in April 2010, Mr. Ringo was Senior Vice President of Business Development, Strategy and Innovation at Pfizer Inc., or Pfizer, a public pharmaceutical company, and was responsible for guiding Pfizer's overall strategic planning and business development activities. Prior to joining Pfizer, Mr. Ringo served as an executive in residence at Warburg Pincus and Sofinnova Ventures. From August 2004 to April 2006, Mr. Ringo served as President and Chief Executive Officer of Abgenix, Inc., or Abgenix, a biotechnology company acquired by Amgen. Prior to Abgenix, Mr. Ringo served for 28 years at Eli Lilly and Company, or Eli Lilly, in numerous executive roles, including Product Group President for Oncology and Critical Care, President of Internal Medicine Products, President of the Infectious Diseases Business Unit and Vice President of Sales and Marketing for U.S. Pharmaceuticals. Following Mr. Ringo's retirement from Eli Lilly in 2001, Mr. Ringo served on various boards of directors, including of InterMune, Inc. where he served as the non-executive chairman of the board of directors after serving as interim Chief Executive Officer from June 2003 to September 2003. Mr. Ringo currently serves on the board of directors of Assembly Biosciences, Inc., and Dermira, Inc., each of which is a public biotechnology company. Mr. Ringo was previously a member of the board of directors of Immune Design, Onyx Pharmaceuticals, Inc., Mirati Therapeutics, Inc., and Sangamo Therapeutics, Inc., each of which was a public company during Mr. Ringo's service as a director. Mr. Ringo received a B.S. in business administration and an M.B.A. from the University of Dayton. We believe that Mr. Ringo's experience serving as a director of other publicly traded and privately held life science companies and serving in executive positions at several biotechnology and pharmaceutical companies and in the venture capital industry gives him the qualifications, skills and financial expertise to serve on our Board.

[Table of Contents](#)

Lewis T. Williams, M.D., Ph.D. founded the company in December 2001 and has served as a member of our Board since January 2002. Dr. Williams served as our Executive Chairman from July 2003 to January 2012 and January 2018 to December 2018, as our President and Chief Executive Officer from August 2011 to December 2017 and as Chairman of the Board from March 2016 to December 2017. Previously, Dr. Williams spent seven years at Chiron Corporation, or Chiron, a biopharmaceutical company, now Novartis Vaccines and Diagnostics, Inc., most recently as its Chief Scientific Officer. Prior to joining Chiron, Dr. Williams was a professor of medicine at the University of California, San Francisco and served as Director of the University's Cardiovascular Research Institution and Daiichi Research Center. Dr. Williams has also served on the faculties of Harvard Medical School and Massachusetts General Hospital and co-founded COR Therapeutics, Inc., or COR Therapeutics, a biotechnology company focused on cardiovascular disease. He is a member of the National Academy of Sciences and a fellow of the American Academy of Arts and Sciences. Dr. Williams is currently on the board of directors of Protagonist Therapeutics, Inc. and was previously a member of the board of directors of Chiron, COR Therapeutics and Beckman Coulter, Inc., each of which was a public company during his service as a director. Dr. Williams received a B.S. from Rice University and an M.D. and a Ph.D. from Duke University. We believe that Dr. Williams' experience in drug discovery and development and in executive positions at several pharmaceutical companies, his experience founding the company and his service as a director of other publicly traded healthcare companies give him the qualifications, skills and financial expertise to serve on our Board.

Board Composition Following Annual Meeting

We seek directors with a broad range of qualifications, skills and experience that would enhance Board effectiveness and strengthen our Board’s ability to carry out its oversight role on behalf of stockholders. Though we do not have a specific policy with respect to Board diversity, we consider diversity as one of many relevant factors when evaluating potential directors. If each nominee for election to our Board is elected at the Annual Meeting, our Board composition with respect to tenure, age, gender and racial diversity following the Annual Meeting will be as follows:

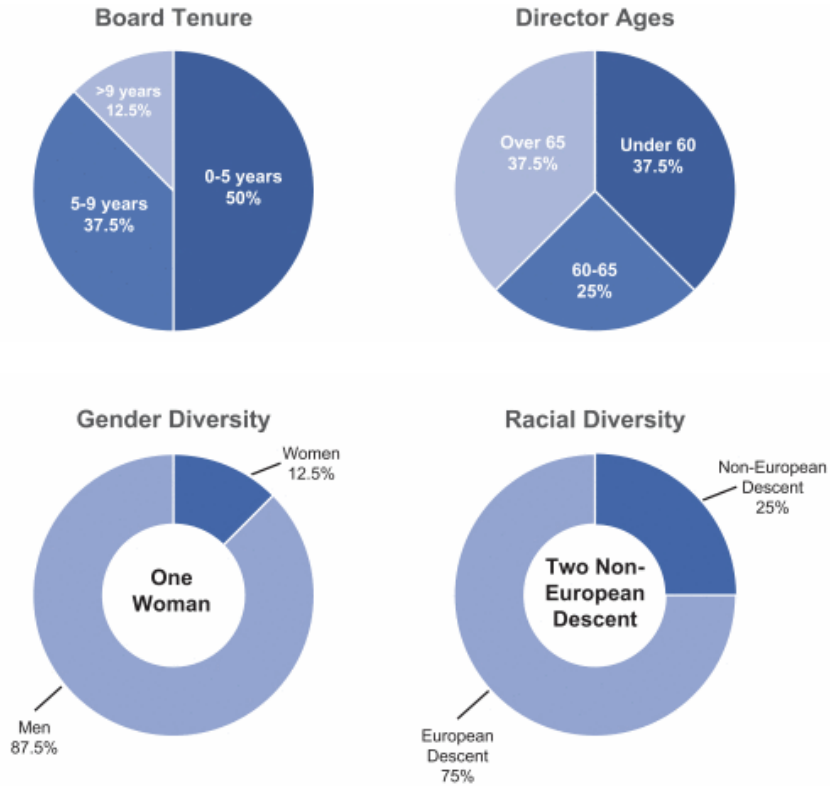
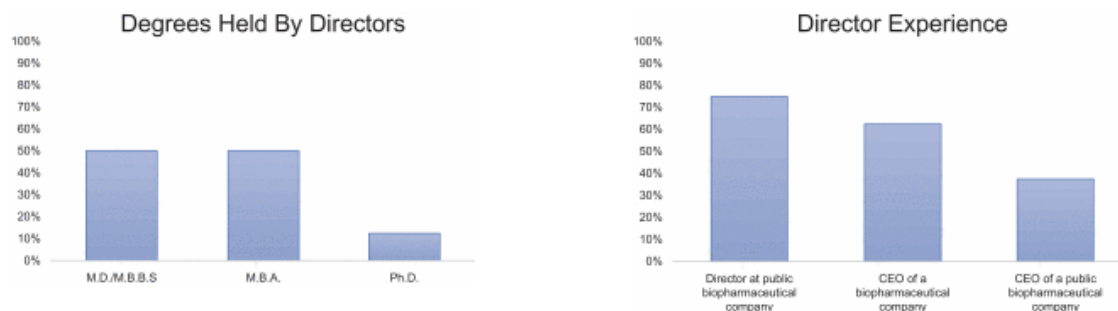


Table of Contents

As further described below, we consider diversity broadly when evaluating potential directors and may also consider factors such as a candidate's relevant academic expertise and business or career experience, including experience in corporate management or as a board member or executive officer of another publicly traded company, to be relevant. If each nominee for election to our Board is elected at the Annual Meeting, our Board composition with respect to degrees held, experience serving as a director at a public biopharmaceutical company, experience serving as a chief executive officer at a biopharmaceutical company, and experience serving as a chief executive officer at a public biopharmaceutical company will be as follows:



Vote Required

Directors are elected by a plurality of the votes cast at the Annual Meeting by the holders of shares present in person or represented by proxy and entitled to vote on the election of directors. The three nominees receiving the most "For" votes will be elected as directors. In tabulating the voting results for the election of directors, only "For" and "Withhold" votes will be counted. Abstentions and broker non-votes will not have any effect on the outcome of this proposal. You may not vote your shares cumulatively for the election of directors. Shares represented by executed proxies will be voted, if authority to do so is not withheld, "For" the election of the three nominees named above. If any nominee becomes unavailable for election as a result of an unexpected occurrence, your shares will be voted for the election of a substitute nominee proposed by our Board.

The election of directors at the Annual Meeting is uncontested and we therefore expect that each of the named nominees for director will be elected at the Annual Meeting. However, under our Corporate Governance Guidelines, any nominee for director in an uncontested election is required to submit an offer of resignation for consideration by the nominating and corporate governance committee if such nominee for director receives a greater number of "Withhold" votes from his or her election than votes "For" such election. In such case, the nominating and corporate governance committee of our Board will consider all relevant facts and circumstances and recommend to the full Board the action to be taken with respect to such offer of resignation. The Board will evaluate such offer of resignation and the nominating and corporate governance committee's recommendation and decide whether to accept such offer of resignation. Promptly following the Board's decision, we would disclose that decision and an explanation of such decision in a filing with the SEC or a press release.

Our Recommendation

OUR BOARD UNANIMOUSLY RECOMMENDS A VOTE "FOR" EACH OF THE NOMINEES SET FORTH ABOVE.

Information About Our Board of Directors

Our nominees for election as directors at our Annual Meeting are all currently serving as members of our Board. Information about each such nominee is set forth in the section above titled "Information About Our Nominees for Election" and is incorporated into this section by reference.

Table of Contents

Set forth below are the names, ages and length of service of the remaining members of our Board whose terms continue beyond the Annual Meeting.

Continuing Directors	Age(1)	Term Expires	Position(s) Held	Director Since
Kapil Dhingra, M.B.B.S.	59	2020	Director	2015
Garry Nicholson	64	2020	Director	2017
Sheila Gujrathi, M.D.	48	2021	Director	2015
Peder K. Jensen, M.D.	64	2021	Director	2001
Aron M. Knickerbocker	49	2021	President, Chief Executive Officer and Director	2013

(1) Ages as of April 29, 2019.

Biographical information for each continuing director, including each such individual's principal occupation, business experience and education, and an explanation of the qualifications, skills and experience that we believe are relevant to such individual's service on our Board, are set forth below. Unless otherwise indicated, principal occupations shown for each continuing director have extended for five or more years.

Kapil Dhingra, M.B.B.S. has served as a member of our Board since December 2015. Dr. Dhingra currently serves as the Managing Member of KAPital Consulting, LLC, a healthcare consulting firm that he founded in 2008. Dr. Dhingra has over 30 years of experience in oncology clinical research and drug development. From 1999 to 2008, Dr. Dhingra worked at F. Hoffmann-La Roche & Co., where he served in roles of increasing responsibility, most recently as Vice President, Head of the Oncology Disease Biology Leadership Team and Head of Oncology Clinical Development. From 2000 to 2008, he held a Clinical Affiliate appointment at Memorial Sloan Kettering Cancer Center. From 1996 to 1999, Dr. Dhingra worked at Eli Lilly where he served in roles of increasing responsibility, most recently as Senior Clinical Research Physician. Dr. Dhingra also served as a Clinical Associate Professor of Medicine at the Indiana University School of Medicine from 1997 to 1999. Prior to Eli Lilly, Dr. Dhingra was a member of the faculty of M.D. Anderson Cancer Center from 1989 to 1996. Dr. Dhingra currently serves on the board of directors of Median Technologies Inc., Autolus Therapeutics plc and Replimune Group, Inc. Dr. Dhingra previously served as a member of the board of directors of Micromet, Inc., until its acquisition by Amgen, Advanced Accelerator Applications S.A., until its acquisition by Novartis, and YM Biosciences Inc., until its acquisition by Gilead Sciences, Inc., or Gilead, each of which was a public company during Dr. Dhingra's service as a director. Dr. Dhingra received his M.B.B.S. from the All India Institute of Medical Sciences in New Delhi, India. He completed his residency in internal medicine at Lincoln Medical and Mental Health Center and New York Medical College and completed his fellowship in hematology and oncology at Emory University School of Medicine. We believe that Dr. Dhingra's experience in executive positions at several pharmaceutical companies and in the clinical development of pharmaceuticals in several therapeutic areas, including in oncology, and his service as a director of other publicly traded life science companies give him the qualifications and skills to serve on our Board.

Garry Nicholson has served as a member of our Board since May 2017. Mr. Nicholson served as President and Chief Executive Officer of XTuit Pharmaceuticals, Inc. from September 2015 to October 2016. From May 2008 to March 2015, Mr. Nicholson served at Pfizer as President, Pfizer Oncology. Prior to joining Pfizer, Mr. Nicholson worked at Eli Lilly where he held roles of increasing responsibility, most recently as the Global Oncology Platform Leader. Mr. Nicholson currently serves on the board of directors of G1 Therapeutics, Inc., a public pharmaceutical company. Mr. Nicholson previously served as a member of the board of directors of Tesaro, Inc., which was a public company until it was acquired by GlaxoSmithKline plc. Mr. Nicholson received a B.S. in Pharmacy from the University of North Carolina at Chapel Hill and an M.B.A. from the University of South Carolina. We believe that Mr. Nicholson's experience serving in executive positions with public and private biopharmaceutical companies, his experience serving on the board of directors of a public company and his business and operations experience give him the qualifications, skills and financial expertise to serve on our Board.

[Table of Contents](#)

Sheila Gujrathi, M.D. has served as a member of our Board since December 2015. Dr. Gujrathi currently serves as President and Chief Executive Officer of Gossamer Bio, Inc., a biopharmaceutical company that Dr. Gujrathi co-founded in 2017. Dr. Gujrathi served as the Chief Medical Officer of Receptos, Inc., or Receptos, from June 2011 to August 2015, when Receptos was acquired by Celgene Corporation. From 2008 to 2011, Dr. Gujrathi served as Vice President of the Global Clinical Research Group in Immunology at Bristol-Myers Squibb Company, or BMS. Prior to joining BMS, Dr. Gujrathi worked at Genentech, Inc., or Genentech, from 2002 to 2008, where she held roles of increasing responsibility in the Immunology, Tissue Growth and Repair clinical development group. From 1999 to 2002, Dr. Gujrathi served as a management consultant at McKinsey & Company in the healthcare practice, where she provided strategic advice on a variety of projects in the healthcare and pharmaceutical industries. Dr. Gujrathi received her B.S. in Biomedical Engineering and M.D. from Northwestern University in its accelerated honors program in Medical Education. She completed her internal medicine internship and residency at Brigham and Women's Hospital, Harvard Medical School. Dr. Gujrathi received additional training at the University of California, San Francisco and Stanford University in their Allergy and Immunology Fellowship Program. We believe that Dr. Gujrathi's experience in executive positions at several pharmaceutical companies and in the clinical development of pharmaceuticals in various therapeutic areas give her the qualifications, skills and financial expertise to serve on our Board.

Peder K. Jensen, M.D. has served as a member of our Board since July 2011. Dr. Jensen is currently President of Bay Way Consultants, LLC, a consulting firm founded by Dr. Jensen in 2010 that advises pharmaceutical and biotechnology companies. Dr. Jensen has over 24 years of global drug development experience in both pharmaceutical and biotechnology companies and has been responsible for more than 40 new drug approvals in the U.S., Europe and Japan during his career. Dr. Jensen's experience includes over 20 years with Schering-Plough Corporation, or Schering-Plough, a global pharmaceutical company, and then Merck & Co., Inc., or Merck, after the merger of Schering-Plough with Merck in 2009. Dr. Jensen most recently served at Schering-Plough as Corporate Senior Vice President, and General Manager, R&D for Japan and Asia/Pacific from 2006 to 2010. Dr. Jensen has also served at British Biotech plc and Chiron in clinical development executive positions and earlier in his career at CIBA-GEIGY Limited. Dr. Jensen is also a member of the board of directors of Acorda Therapeutics, Inc., a public biotechnology company. Dr. Jensen previously served as a member of the board of directors of BioCryst Pharmaceuticals, Inc., which was a public pharmaceutical company during Dr. Jensen's service as a director. Dr. Jensen received an M.D. from the University of Copenhagen, where he also completed his post-graduate medical training in neurology and internal medicine. We believe that Dr. Jensen's experience in executive positions at several pharmaceutical companies, in the clinical development of pharmaceuticals in several therapeutic areas and his service as a director of other publicly traded and privately held life science companies give him the qualifications, skills and financial expertise to serve on our Board.

Aron M. Knickerbocker has served as our Chief Executive Officer since January 2018 and as a member of our Board since October 2013. Mr. Knickerbocker also served as our Chief Operating Officer from September 2016 to December 2017, Executive Vice President from August 2015 to September 2016, Chief Business Officer from April 2012 to September 2016, Senior Vice President from April 2012 to August 2015, and Vice President, Business Development from September 2009 to April 2012. From 2001 to September 2009, Mr. Knickerbocker served at Genentech in positions of increasing responsibility, most recently as Senior Director, Business Development from 2005 to September 2009. Prior to 2001, Mr. Knickerbocker served as Director of Commercial Development at ALZA Corporation, a pharmaceutical company acquired by Johnson & Johnson, as Senior Manager, Corporate Development at Amgen, Inc., or Amgen, a public biotechnology company, and as a scientist at BMS, a public biopharmaceutical company. Mr. Knickerbocker received an A.B. in biology from Washington University in St. Louis and an M.B.A. from the University of Michigan. We believe that Mr. Knickerbocker's experience in drug commercialization and business development and in managerial positions with several pharmaceutical companies give him the qualifications, skills and financial expertise to serve on our Board.

Table of Contents

Information About Our Executive Officers Who Are Not Directors

The following table sets forth certain information about our executive officers who are not also directors.

Executive Officers	Age(1)	Position(s) Held
David V. Smith(2)	59	Executive Vice President and Chief Financial Officer
Bryan Irving, Ph.D.(3)	59	Executive Vice President and Chief Scientific Officer
Helen Collins, M.D.	57	Senior Vice President and Chief Medical Officer
Francis W. Sarena	48	Chief Strategy Officer and Secretary

(1) Ages as of April 29, 2019.

(2) Mr. Smith became our Executive Vice President and Chief Financial Officer on November 26, 2018.

(3) Dr. Irving became our Executive Vice President and Chief Scientific Officer on May 15, 2018.

The principal occupation, business experience and education of each executive officer who is not also a director are set forth below.

David V. Smith has served as our Executive Vice President and Chief Financial Officer since November 2018. From May 2012 until its acquisition by Thermo Fisher Scientific Inc. in March 2018, Mr. Smith served as Chief Operating Officer of IntegenX, Inc., a biotechnology company. From December 2006 to July 2011, Mr. Smith served as Executive Vice President and Chief Financial Officer of Thoratec Corporation, a public medical device company that was later acquired by St. Jude Medical. From 1999 until its acquisition by Novartis International AG in 2006, Mr. Smith served in positions of increasing responsibility at Chiron, most recently as Vice President and Chief Financial Officer. From 1997 until its acquisition by Corixa Corporation in 1999, Mr. Smith served as Vice President, Finance and Chief Financial Officer of Anergen, Inc., a public biotechnology company. Prior to Anergen, Mr. Smith served in various roles at Genentech, IBM Corporation and Syntex Corporation. Mr. Smith currently serves as a member of the board of directors and chair of the audit and finance committees of Codexis, Inc., a public biotechnology company. Mr. Smith previously served as a member of the board of directors of OncoGenex Pharmaceuticals Inc., a public biotechnology company. Mr. Smith received an M.B.A., Finance from Golden Gate University and a B.A. in Economics and History from Willamette University.

Bryan Irving, Ph.D. has served as our Executive Vice President and Chief Scientific Officer since May 2018, and served as our Senior Vice President, Research from September 2017 to May 2018. From December 2013 to August 2017, Dr. Irving served in positions of increasing responsibility at CytomX Therapeutics, Inc., most recently as Vice President, Cancer Immunology. From September 2001 to November 2013, Dr. Irving served as a scientist at Genentech, where his research focused in both areas of inflammation and immuno-oncology. Prior to joining Genentech, Dr. Irving served as a Postdoctoral Fellow at both Harvard University and the University of California, San Francisco. Dr. Irving received a Ph.D. in Immunology from the University of California, San Francisco and a B.A. in Physiology from the University of California, Berkeley.

Helen Collins, M.D. has served as our Senior Vice President and Chief Medical Officer since March 2017. She also served as our Vice President of Clinical Development from June 2016 to March 2017. From June 2013 to June 2016, Dr. Collins held positions of increasing responsibility at Gilead, most recently as Program and Clinical Lead for Gilead's GS-5829 (BET inhibitor) and GS-4059 (BTK inhibitor) programs. From November 2009 to May 2013, Dr. Collins held positions of increasing responsibility at Amgen, most recently as Global Lead, Oncology Biosimilars. Prior to joining Amgen, Dr. Collins practiced as a medical oncologist and hematologist for 12 years at Redwood Regional Medical Group, or RRMG, and served as President of RRMG from 2006 to 2009. In 2005, Dr. Collins co-founded the non-profit North Bay Cancer Alliance, whose mission is to increase local access to education and cancer care in counties in the northern San Francisco Bay Area. Dr. Collins received a A.B. in Chemistry from Bryn Mawr College and an M.D. from The Johns Hopkins University School of Medicine. Dr. Collins completed her residency in internal medicine at The Johns Hopkins Hospital and completed her fellowship at Stanford University School of Medicine, where she concentrated in gastrointestinal cancer. Dr. Collins is board certified in both oncology and internal medicine.

[Table of Contents](#)

Francis W. Sarena has served as our Chief Strategy Officer since September 2016 and as Secretary since December 2010. He also served as Executive Vice President from August 2015 to September 2016, as our General Counsel from December 2010 to September 2016, as Senior Vice President from January 2013 to August 2015 and as Vice President from December 2010 to January 2013. From December 2008 to July 2010, Mr. Sarena served as Vice President, General Counsel and Secretary of Facet Biotech Corporation, a public biotechnology company that was spun off from PDL BioPharma, Inc., or PDL BioPharma, in December 2008 and that was later acquired by Abbott Laboratories in April 2010. From April 2006 to December 2008, Mr. Sarena served at PDL BioPharma in positions of increasing responsibility, most recently as Vice President, General Counsel and Secretary from June 2008 to December 2008. Prior to April 2006, Mr. Sarena served as an associate at Bingham McCutchen LLP where he represented public and private life science and high-tech clients primarily in merger and acquisition transactions, corporate and securities law matters and equity financing transactions. Mr. Sarena received a B.S. in Finance from San Francisco State University and a J.D. from the University of California, Berkeley.

Corporate Governance

Board of Directors

Our Board oversees our business and monitors the performance of our management. In accordance with our corporate governance procedures, our Board does not involve itself in our day-to-day operations. Our executive officers and management oversee our day-to-day operations. Our directors fulfill their duties and responsibilities by attending meetings of our Board, which are held from time to time, and the respective committees of our Board on which they serve. The independent directors meet in executive sessions without management or any non-independent directors at least quarterly. The purpose of these executive sessions is to promote open and candid discussion among our non-employee directors.

Our Board held eight meetings during the year ended December 31, 2018. Each incumbent director attended at least 75% of the total meetings of (i) our Board held during the period for which he or she has been a director and (ii) the committee(s) on which that particular director served during the period for which he or she has been a member of such committee(s).

It is our policy to encourage our directors to attend the Annual Meeting. All of our then-current directors attended our 2018 annual meeting of stockholders.

Board Evaluation Processes

Our Board's evaluation processes, which are overseen by the nominating and corporate governance committee of our Board, include evaluations at the Board, committee, and individual level to ensure the effectiveness of the Board as a whole and its respective committees.

Prior to 2018, the Board undertook an evaluation at the end of each calendar year, during which each Board member assessed the Board and its committees and evaluated whether and to what extent the Board possessed the core competencies we have identified as desirable and relevant to the success of our business. This evaluation process was intended to identify the Board's strengths and to identify specific areas, if any, that required improvement. Upon completion of the individual assessments, the nominating and corporate governance committee reviewed each member's assessment and provided a consolidated report to the full Board.

In early 2018, the nominating and corporate governance committee reviewed its annual evaluation process and determined that it would be appropriate to retain a third-party consulting firm to manage the evaluation process for 2018. The nominating and corporate governance committee believed that using an outside consulting firm would enhance the evaluation process by allowing for more candid discussions with individual Board members. The goals of this review included the following:

- identifying strengths and development areas for the Board as a whole, including with respect to Board composition, leadership, effectiveness, performance and communications;

Table of Contents

- identifying key skills and competencies for each individual member of the Board;
- assessing and prioritizing the key skills and competencies desired for the Board in order to promote development of the current Board and to assist in identifying nominees for the Board in the future; and
- assessing the alignment between the Board and management with respect to the company's strategy.

As part of this review, the consulting firm conducted interviews with each member of our Board, as well as certain members of management, and presented a report of its findings to the nominating and corporate governance committee, as well as the full Board, in May 2018. The consulting firm also provided individual Board members with feedback regarding their respective strengths and opportunities for development. The nominating and corporate governance committee plans to conduct a Board evaluation process in the second half of 2019 incorporating elements of the self-evaluation process used in previous years as well as the assessment conducted by the consulting firm in 2018.

The Board uses the results of its Board evaluations to make improvements at each of the Board, committee and individual levels. At the Board level, the Board uses the results to identify the desired core competencies for director nominees based on the current and anticipated future needs of the company. At the committee level, each committee uses the results to refine the issues that such committee discusses and addresses during the course of the following year. Finally, at the director level, the results are used to identify individual strengths and development areas, including identifying ways in which directors can contribute most meaningfully to the company.

Continuing Education

We believe it is important for members of our Board to be knowledgeable about our company and our business and to also be familiar with the duties and responsibilities of directors of public companies and emerging practices in corporate governance. Accordingly, we encourage all members of our Board to participate in seminars, conferences and other continuing education programs designed for directors of public companies, including accredited director education programs, as well as to attend other programs and become members of organizations related to our industry, corporate governance and Board and committee membership generally, including membership in the National Association of Corporate Directors. We reimburse expenses associated with such participation, attendance and membership. We also provide our Board with other forms of continuing education, including presentations and other materials developed or provided by subject matter experts within the company and by third parties.

Board of Directors Independence

Rule 5605 of the Nasdaq Listing Rules requires that independent directors comprise a majority of a listed company's board of directors. In addition, the Nasdaq Listing Rules require that, subject to specified exceptions, each member of a listed company's audit, compensation and nominating and corporate governance committees be independent and that audit committee members also satisfy independence criteria set forth in Rule 10A-3 under the Exchange Act. Under Nasdaq Listing Rule 5605(a)(2), a director will only qualify as an "independent director" if, in the opinion of a listed company's board of directors, that person does not have a relationship that would interfere with the exercise of independent judgment in carrying out the responsibilities of a director. In order to be considered independent for purposes of Rule 10A-3 under the Exchange Act, a member of an audit committee of a listed company may not, other than in his or her capacity as a member of such audit committee, the board of directors, or any other board committee: (i) accept, directly or indirectly, any consulting, advisory, or other compensatory fee from the company or any of its subsidiaries; or (ii) be an affiliated person of the company or any of its subsidiaries. In addition to satisfying general independence requirements under the Nasdaq Listing Rules, members of a company's compensation committee must also satisfy additional independence requirements set forth in Rule 10C-1 under the Exchange Act and Nasdaq Listing Rule 5605(d)(2). Pursuant to Rule 10C-1 under the Exchange Act and Nasdaq Listing Rule 5605(d)(2), in affirmatively determining the independence of a member of a compensation committee of a listed company, the board of directors must consider all factors specifically relevant to determining whether that member has a relationship with the company that is material to that member's ability to be independent from management in connection with the duties of a compensation committee member, including: (a) the source of compensation of such member, including any consulting, advisory or other compensatory fee paid by the company to such member; and (b) whether such member is affiliated with the company, a subsidiary of the company or an affiliate of a subsidiary of the company.

Our Board undertook a review of the composition of our Board and its committees and the independence of each director. In reviewing the independence of our directors, our Board considered the relationships that each non-employee director has with our company and all other facts and circumstances our Board deemed relevant in determining independence, including the beneficial ownership of our capital stock by each non-employee director. Based upon information requested from and provided by each director concerning his or her background, employment and affiliations, including family and other relationships, including those relationships described under "Transactions with Related Persons," our Board affirmatively determined that all of our directors satisfy general independence requirements under the Nasdaq Listing Rules, other than Mr. Knickerbocker and Dr. Williams. Our Board also determined that Mr. McDade satisfied general independence requirements under the Nasdaq Listing Rules during the period in which he served as a director, which ended in November 2018. In making this determination, our Board found that none of our directors, other than Mr. Knickerbocker and Dr. Williams, had a material or other disqualifying relationship with us that would interfere with the exercise of independent judgment in carrying out the responsibilities of a director, and that each director, other than Mr. Knickerbocker and Dr. Williams, is "independent" as that term is defined under Rule 5605(a)(2) of the Nasdaq Listing Rules. Our Board determined that Mr. Knickerbocker, our President and Chief Executive Officer, is not an independent director by virtue of his employment with us, and that Dr. Williams, our former President, Chief Executive Officer and Executive Chairman, is not an independent director because he was employed by the company within the last three years. Our Board also determined that each member of our audit, compensation and nominating and corporate governance committees satisfies the independence standards for such committees established by the SEC and the Nasdaq Listing Rules, as applicable.

Committees of the Board of Directors

Our Board has four standing committees: an audit committee, a compensation and management development committee, or the compensation committee, a nominating and corporate governance committee and a research and development committee.

[Table of Contents](#)

The following table provides membership and meeting information for the year ended December 31, 2018 for each committee.

Name	Audit Committee	Compensation and Management Development Committee	Nominating and Corporate Governance Committee	Research and Development Committee
Franklin M. Berger, CFA**	X†		X	
Fred E. Cohen, M.D., D.Phil.††				
Kapil Dhingra, M.B.B.S.				X*
Sheila Gujrathi, M.D.		X‡		X
Peder K. Jensen, M.D.		X*	X ^o	X
Aron M. Knickerbocker				
Mark D. McDade‡‡		X‡‡		
Garry Nicholson	X*	X ^{oo}		
William Ringo	X	X ^{oo}	X*	
Lewis T. Williams, M.D., Ph.D.				
Total committee meetings in 2018	4	7	6	4

* Current Chairman

** Financial Expert

† Mr. Berger served as Chairman of our audit committee until May 2018.

†† Dr. Cohen resigned from our Board effective upon the expiration of his three-year term in connection with our 2018 annual meeting of stockholders.

‡ Dr. Gujrathi served as Chairman and a member of our compensation committee until May 2018.

‡‡ Mr. McDade served as a member of our compensation committee until May 2018 and resigned from our Board effective November 30, 2018.

^o Dr. Jensen served as Chairman of our nominating and corporate governance committee until May 2018 and continued as a member of the nominating and corporate governance committee thereafter.

^{oo} Messrs. Nicholson and Ringo commenced their service on our compensation committee in May 2018.

Below is a description of each committee of our Board.

Audit Committee

Our audit committee is responsible for assisting our Board in its oversight of the integrity of our financial statements, the qualifications and independence of our independent auditors, and our internal financial and accounting controls. Our audit committee has direct responsibility for the appointment, compensation, retention (including termination) and oversight of our independent auditors, and our independent auditors report directly to our audit committee. Our audit committee also prepares the audit committee report that the SEC requires to be included in our annual proxy statement. Our audit committee has authority to engage legal counsel and other consultants, accountants, experts and advisors, as it deems appropriate to carry out its responsibilities.

[Table of Contents](#)

Messrs. Berger, Nicholson and Ringo served as members of our audit committee in 2018, with Mr. Berger serving as the chairman until May 2018 and Mr. Nicholson serving as the chairman thereafter. All members of our audit committee qualify as independent directors under the corporate governance standards of the Nasdaq Listing Rules and the independence requirements of Rule 10A-3 of the Exchange Act. In addition, our Board has determined that each member of our audit committee is financially literate and that Mr. Berger qualifies as an “audit committee financial expert,” as such term is currently defined in Item 407(d)(5) of Regulation S-K. In making this determination, our Board considered Mr. Berger’s formal education and the nature and scope of Mr. Berger’s previous experience, coupled with his past and present service on various audit committees. Our audit committee operates under a written charter that satisfies the applicable standards of the SEC and the Nasdaq Listing Rules, which is available in the “Corporate Governance” section of our investor relations website at investor.fiveprime.com/corporate-governance. The inclusion of our website address here and elsewhere in this proxy statement does not include or incorporate by reference the information on our website into this proxy statement.

Audit Committee Report(1)

Our Board has determined that all members of our Audit Committee currently meet the independence and qualification standards for audit committee membership set forth in the listing standards and rules of Nasdaq and the SEC, including the heightened independence standards under Exchange Act Rule 10A-3. The audit committee has reviewed and discussed the audited financial statements for the fiscal year ended December 31, 2018 with management and the company’s independent registered public accounting firm, Ernst & Young LLP. The audit committee has discussed with Ernst & Young LLP the matters required to be discussed by the applicable requirements of the Public Company Accounting Oversight Board, or PCAOB, and the SEC. The audit committee has also received the written disclosures and the letter from Ernst & Young LLP required by applicable requirements of the PCAOB regarding Ernst & Young LLP’s communications with the audit committee concerning independence and has discussed with Ernst & Young LLP its independence. The audit committee has also considered whether Ernst & Young LLP’s provision of non-audit services to the company is compatible with its independence and concluded that Ernst & Young LLP is independent from the company and its management.

Based on the foregoing, the audit committee recommended to the Board that the company’s audited financial statements be included in the company’s Annual Report on Form 10-K for the fiscal year ended December 31, 2018 for filing with the SEC.

**Five Prime Therapeutics, Inc.
Audit Committee**

*Garry Nicholson, Chairman
Franklin M. Berger, CFA
William Ringo*

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- (1) The material in this report is not “soliciting material,” is not deemed “filed” with the SEC and is not incorporated by reference in any filing we make under either the Securities Act of 1933, as amended, or the Securities Act, or the Exchange Act, whether made before or after the date hereof and irrespective of any general incorporation language in any such filing, except to the extent that we specifically incorporate this information by reference, and shall not otherwise be deemed filed under such acts.

Compensation Committee

Our compensation committee approves our compensation objectives and approves the compensation of our Chief Executive Officer and other executives. Our compensation committee reviews all components of the compensation of our executive officers, including base salary, bonus, equity compensation, benefits and other perquisites. In determining or making recommendations regarding the compensation and other terms of employment of our executive officers, other than our Chief Executive Officer, our compensation committee may, in its sole discretion, consider the recommendations of our Chief Executive Officer. In fulfilling its responsibilities, our compensation committee may delegate any or all of its responsibilities to a subcommittee of our compensation committee, but only to the extent consistent with our certificate of incorporation, our bylaws, Section 162(m) of the U.S. Internal Revenue Code of 1986, as amended, or the Code, the Nasdaq Listing Rules, and other applicable law.

Mr. McDade and Drs. Gujrathi and Jensen served as members of our compensation committee, with Dr. Gujrathi serving as the chairman, until May 2018. Beginning in May 2018, Dr. Jensen and Messrs. Nicholson and Ringo served as members of our compensation committee, with Dr. Jensen serving as the chairman. Each member of our compensation committee is a non-employee director within the meaning of Rule 16b-3 of the rules promulgated under the Exchange Act, each is an outside director as defined by Section 162(m) of the Code, and each is an independent director under the corporate governance standards of the Nasdaq Listing Rules and the independence requirements of Rule 10C-1 of the Exchange Act. Our compensation committee operates under a written charter that satisfies the applicable standards of the SEC and the Nasdaq Listing Rules, which is available in the “Corporate Governance” section of our investor relations website at investor.fiveprime.com/corporate-governance.

Pursuant to its charter, our compensation committee has the sole authority to retain compensation consultants to assist in its evaluation of executive and director compensation. Our compensation committee utilized information, including peer data, regarding the compensation of our directors and senior executive officers provided by Radford, an AON Hewitt company, or Radford, a national executive compensation consulting firm, in evaluating, recommending and determining compensation levels. Our compensation committee also has authority to engage legal counsel and other consultants, accountants, experts and advisors as it deems appropriate to carry out its responsibilities.

Compensation Committee Interlocks and Insider Participation

None of the members of our compensation committee has ever been an officer or employee of the company, including during the fiscal year ended December 31, 2018. None of our executive officers serves, or has served during the last three years, as a member of the board of directors, compensation committee or other board committee performing equivalent functions of any entity that has one or more of its executive officers serving as one of our directors or as a member of our compensation committee. Further, no member of our compensation committee during the fiscal year ended December 31, 2018 had any relationship requiring disclosure by the company under Item 404 of Regulation S-K.

Compensation Committee Report⁽¹⁾

The Compensation and Management Development 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 and Management Development Committee recommended to our Board that the Compensation Discussion and Analysis be included in this proxy statement and incorporated into our Annual Report on Form 10-K for the fiscal year ended December 31, 2018.

The foregoing report has been furnished by the Compensation and Management Development Committee.

Respectfully submitted,

The Compensation and Management Development Committee of the Board of Directors

Peder K. Jensen, M.D., Chairman

Garry Nicholson

William Ringo

Nominating and Corporate Governance Committee

Our nominating and corporate governance committee is responsible for making recommendations to our Board regarding candidates for directorship and the structure and composition of our Board and its committees. In addition, our nominating and corporate governance committee is responsible for considering nominations by stockholders of candidates for election to our Board, developing and recommending to our Board corporate governance guidelines applicable to the company and advising our Board on corporate governance matters. Our nominating and corporate governance committee also has authority to engage legal counsel and other consultants, accountants, experts and advisors as it deems appropriate to carry out its responsibilities.

Dr. Jensen and Messrs. Berger and Ringo served as members of our nominating and corporate governance committee in 2018, with Dr. Jensen serving as the chairman until May 2018 and Mr. Ringo serving as the chairman thereafter. Each member of our nominating and corporate governance committee is an independent director under the corporate governance standards of the Nasdaq Listing Rules. Our nominating and corporate governance committee operates under a written charter that satisfies the applicable standards of the Nasdaq Listing Rules, which is available in the “Corporate Governance” section of our investor relations website at investor.fiveprime.com/corporate-governance.

- (1) The material in this report is not “soliciting material,” shall not be deemed “filed” with the SEC and is not incorporated by reference by any general statement incorporating by reference this proxy statement into any filing under the Securities Act or the Exchange Act, whether made before or after the date hereof and irrespective of any general incorporation language in any such filing, except to the extent that we specifically incorporate this information by reference, and shall not otherwise be deemed filed under such acts.

[Table of Contents](#)

It is the policy of our nominating and corporate governance committee to select nominees for director that ensure that our Board as a whole collectively possesses a broad range of skills, expertise, industry and other knowledge, and business and other experience that will enhance Board effectiveness and strengthen our Board's ability to carry out its oversight role on behalf of stockholders. Though we do not have a specific policy with respect to Board diversity, our nominating and corporate governance committee considers diversity as one of many relevant factors in evaluating potential directors. Our nominating and corporate governance committee considers diversity broadly and may consider the following criteria when considering candidates for our Board, among others that our nominating and corporate governance committee deems appropriate: (i) diversity of personal background, perspective and experience; (ii) personal and professional integrity, ethics and values; (iii) experience in corporate management, such as serving as an officer or former officer of a publicly traded company, and a general understanding of marketing, finance and other elements relevant to the success of a publicly traded company; (iv) experience relevant to our industry and with relevant social policy concerns; (v) experience as a board member or executive officer of another publicly traded company; (vi) relevant academic expertise; (vii) practical and mature business judgment, including ability to make independent analytical inquiries; and (viii) promotion of a diversity of business or career experience relevant to our success.

In addition, qualifications, skills and experience in the following areas comprise the core competencies that our Board believes are desirable and relevant to the success of our business:

Core Competencies	
<ul style="list-style-type: none">• Strategic plan development and implementation• Executive leadership• Business development, mergers and acquisitions and licensing • Discovery research• Clinical development• Manufacturing• Commercialization and marketing• Financing and capital markets• Financial audit	<ul style="list-style-type: none">• Public and investor relations• Corporate operations• Human resources, organizational development, compensation and talent acquisition• Risk management• Regulatory and quality• International experience• Legal and compliance• Board and corporate governance

While each of our current directors possesses one or more of the core competencies listed above, and our nominating and corporate governance committee considers these core competencies in the director nomination process, these core competencies do not encompass all the qualifications, skills and experience that are represented on our Board. In addition, our nominating and corporate governance committee retains the right to modify these core competencies from time to time as it deems appropriate.

In the case of any incumbent director whose term of office is set to expire, the nominating and corporate governance committee reviews such director's overall service to the company during his or her term, including the number of meetings attended, level of participation, quality of performance and any other relationships or transactions that might impair such director's independence. The nominating and corporate governance committee also considers the results of the Board's self-evaluations, as described above under the section titled "Board Evaluation Process," to assess and determine the function and needs of the Board.

In the case of a new director candidate, the nominating and corporate governance committee also determines whether the nominee is independent for Nasdaq purposes, which determination is based upon applicable Nasdaq Listing Rules, applicable SEC rules and regulations and the advice of counsel, if necessary. The nominating and corporate governance committee often uses its network of contacts to compile a list of potential candidates and also often engages a professional search firm to identify and screen additional candidates and coordinate and advise on candidate search and selection efforts. The nominating and corporate governance committee evaluates the background and qualifications of candidates, conducts interviews of selected candidates, and then selects a nominee for recommendation to the full Board by majority vote.

[Table of Contents](#)

In accordance with our bylaws and the charter of our nominating and corporate governance committee, nominations and recommendations of individuals for election to our Board at an annual meeting of stockholders may be made by any stockholder of record entitled to vote for the election of directors at such meeting who provides timely notice in writing to our Secretary at our principal executive offices. See the section above titled “Questions and Answers About the Annual Meeting” for additional information on the requirements for stockholder proposals.

Director nominees identified and submitted by stockholders are analyzed by our nominating and corporate governance committee in the same manner as nominees identified by our nominating and corporate governance committee. If our nominating and corporate governance committee believes a candidate would be a valuable addition to our Board, it will recommend that candidate’s election to the full Board.

Given that our Board members can provide valuable perspectives and leadership across different areas, our nominating and corporate governance committee periodically reviews and, if and when appropriate, makes recommendations to the Board to reconstitute the membership of its committees and to rotate which member of the Board serves as chair of each committee. At our May 2018 meeting of the Board, our nominating and corporate governance committee recommended to the Board and our Board agreed to reconstitute the membership of our compensation committee and to appoint new chairpersons of the audit, nominating and corporate governance and compensation committees, as described above.

Research and Development Committee

Our research and development committee is responsible for reviewing the strategy, substance and execution of our research and development programs, the quality and performance of our scientific management and the suitability and effectiveness of our research and development process. In addition, our research and development committee is responsible for identifying and keeping our Board apprised of significant emerging science, technology, research and development issues and trends that relate to our business. Drs. Dhingra, Gujrathi and Jensen served as members of our research and development committee in 2018, with Dr. Dhingra serving as the chairman.

Board Leadership Structure

Prior to 2018, our then-President and Chief Executive Officer, Lewis T. Williams, served as Chairman of the Board, and Mark McDade served as our Lead Independent Director. Our Board determined that the combined roles of Chief Executive Officer and Chairman of the Board, along with a strong Lead Independent Director, provided the appropriate leadership and oversight of the company to facilitate effective functioning of both our Board and management.

Our Board separated the positions of Chief Executive Officer and Chairman of the Board effective January 1, 2018 in connection with Aron M. Knickerbocker’s promotion to President and Chief Executive Officer of the company and Dr. Williams’ transition into the role of Executive Chairman. We elected at that time to continue having Mr. McDade serve as Lead Independent Director. Our Board believes that the separation of the positions of Chief Executive Officer and Chairman of the Board reinforces the independence of the Board from management, creates an environment that encourages objective oversight of management’s performance and enhances the effectiveness of our Board as a whole. Though it does not have current plans to do so, our Board may combine the roles of Chief Executive Officer and Chairman of the Board again in the future if it believes that would be in the best interest of the company and its stockholders.

Table of Contents

Effective November 30, 2018, Mr. McDade resigned from our Board. At that time, the Board appointed William Ringo as our Lead Independent Director. Effective January 1, 2019, Dr. Williams transitioned from his role as Executive Chairman to Board member, and Mr. Ringo became Chairman of the Board. As our current Chairman of the Board, Mr. Ringo presides over meetings of our Board and holds such other powers and carries out such other duties as are customarily carried out by the chairman of the board of directors of a company. Mr. Ringo also presides over portions of regularly scheduled meetings at which only our independent directors are present. Mr. Ringo serves as a liaison between management and the independent directors and works in conjunction with the Chief Executive Officer to plan and set schedules and agendas for Board meetings.

Our independent directors meet alone in executive session at no less than four regular meetings of our Board each year. The Chairman of the Board may call additional executive sessions of the independent directors at any time, and the Chairman of the Board must call an executive session at the request of a majority of the independent directors. The purpose of these executive sessions is to promote open and candid discussion among non-employee directors.

Role of the Board in Risk Oversight

Risk is inherent with every business, and how well a business manages risk can ultimately determine its success. We face a number of risks. Our Board believes that risk management is an important part of establishing, updating and executing on our business strategy. Our Board, as a whole and at the committee level, has oversight responsibility relating to risks that could affect our corporate strategy, business objectives, compliance, operations, financial condition and performance. Our Board focuses its oversight on the most significant risks facing the company and on its processes to identify, prioritize, assess, manage and mitigate those risks. Our Board and its committees receive regular reports from members of our senior management on areas of material risk to us, including strategic, operational, financial, legal and regulatory risks. While our Board has an oversight role, management is principally tasked with direct responsibility for management and assessment of risks and the implementation of processes and controls to mitigate their effects on the company.

Our audit committee, as part of its responsibilities, oversees the management of financial risks, including accounting matters, liquidity and credit risks, corporate tax positions, insurance coverage, and cash investment strategy and results. Our audit committee is also responsible for overseeing the management of risks relating to the performance of our internal audit function, if required, and our independent registered public accounting firm, as well as our systems of internal controls and disclosure controls and procedures and risks related to data privacy and cybersecurity. For example, relevant members of management periodically report to our audit committee regarding data privacy and cybersecurity risks and related policies and initiatives that the company has implemented to address such risks, including risks related to the collection and handling of personal data obtained from subjects participating in our clinical trials. Additionally, pursuant to its charter, the audit committee may retain, as necessary, subject matter experts and advisers to assist in its oversight of risk management within the company, including with respect to data privacy and cybersecurity risk.

Our compensation committee is responsible for overseeing the management of risks relating to our executive compensation and overall compensation and benefit strategies, plans, arrangements, practices and policies. Our nominating and corporate governance committee oversees the management of risks associated with our overall compliance and corporate governance practices and the independence and composition of our Board. Our research and development committee oversees the management of risks associated with our research and development programs, processes and strategies. Each committee of our Board provides regular reports, on at least a quarterly basis, to the full Board. Our Board may also create additional committees in the future to assist in risk oversight.

Code of Business Conduct and Ethics

We have adopted a code of business conduct and ethics that applies to all our employees, officers and directors, including those officers responsible for financial reporting. The code of business conduct and ethics is available on our website at investor.fiveprime.com/corporate-governance.

[Table of Contents](#)

We intend to satisfy the disclosure requirement under Item 5.05 of Form 8-K regarding an amendment to, or a waiver from, any provision of our 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, by posting such information on our website at the Internet address set forth above. We did not amend or grant any waivers of a provision of our code of business conduct and ethics during 2018.

Hedging and Pledging Policies

Our trading compliance policy expressly prohibits each of our directors, officers and employees from engaging in any speculative transaction designed to decrease the risks associated with holding our securities, including hedging or similar transactions. We also prohibit any pledging of our securities as collateral for loans and the holding of our securities in margin accounts. An exception from such policies must be approved by our Chief Strategy Officer and Secretary, who serves as our compliance officer, in consultation with our Board or an independent committee of our Board.

Stockholder Communications with Our Board of Directors

Stockholders wishing to communicate directly with our Board may send correspondence to our Secretary, c/o Five Prime Therapeutics, Inc., 111 Oyster Point Boulevard, South San Francisco, California 94080. All comments will be forwarded directly to our Board.

PROPOSAL 2

ADVISORY VOTE ON EXECUTIVE COMPENSATION

General

Pursuant to the Dodd-Frank Wall Street Reform and Consumer Protection Act, or the Dodd-Frank Act, and Section 14A of the Exchange Act, we are asking stockholders to cast an advisory vote to approve the compensation of our named executive officers, as disclosed in this proxy statement pursuant to Item 402 of Regulation S-K.

While this vote is advisory and not binding on the company, it will provide information to our Board and our compensation committee regarding investor sentiment about our executive compensation philosophy, policies and practices. Our Board and our compensation committee value the opinions of our stockholders and, to the extent there is any significant vote against the compensation of our named executive officers as disclosed in this proxy statement, we will consider our stockholders' concerns and our compensation committee will evaluate whether any actions are necessary to address those concerns. Our current policy is to provide our stockholders with an opportunity to approve the compensation of our named executive officers each year at the annual meeting of stockholders. Accordingly, we anticipate that the next such vote will occur at the 2020 Annual Meeting.

In considering their vote, stockholders should review with care the information on our compensation policies and decisions regarding our named executive officers contained in the "Compensation Discussion and Analysis" section of this proxy statement. As discussed there, our Board believes that our long-term success depends in large measure on the talent of our employees. Our compensation system plays a significant role in our ability to attract, retain and motivate the highest quality workforce. Our Board believes that its current compensation program achieves the desired goals of aligning our executive compensation structure with our stockholders' interests and current market practices.

Accordingly, our Board is asking our stockholders to indicate their support for the compensation of our named executive officers as described in this proxy statement by casting a non-binding advisory vote "For" the following resolution:

"RESOLVED, that the 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, executive compensation tables and accompanying narrative discussion, is hereby APPROVED."

This vote is not intended to address any specific component of compensation, but rather the overall compensation of our named executive officers and our philosophy, policies and practices with respect to executive compensation described in this proxy statement.

Vote Required

The advisory vote to approve the compensation of our named executive officers requires the affirmative vote of the majority of the votes cast at the Annual Meeting by the holders of shares present in person or represented by proxy and entitled to vote on the proposal. Abstentions and broker non-votes will have no effect on the outcome of the vote.

Our Recommendation

OUR BOARD UNANIMOUSLY RECOMMENDS THAT YOU VOTE "FOR" THE APPROVAL, ON AN ADVISORY BASIS, OF THE COMPENSATION OF OUR NAMED EXECUTIVE OFFICERS.

PROPOSAL 3

RATIFICATION OF APPOINTMENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

General

Our audit committee has appointed Ernst & Young LLP to act as our independent registered public accounting firm and to audit our financial statements for the fiscal year ending December 31, 2019. Ernst & Young LLP has served as our independent registered public accounting firm and audited our financial statements since 2003.

To help ensure auditor independence, our audit committee reviews Ernst & Young LLP's independence and performance on an annual basis as part of its decision whether to continue to engage Ernst & Young LLP as the company's independent auditor. In the course of its reviews, our audit committee considers, among other things, the following factors:

- Ernst & Young LLP's historical and recent performance on the company's audit;
- Ernst & Young LLP's institutional knowledge and expertise regarding the company's business, accounting policies and practices and internal control over financial reporting;
- the professional qualifications of relevant Ernst & Young LLP personnel, including its lead audit partner;
- the quality and candor of Ernst & Young LLP's communications with our audit committee and management;
- Ernst & Young LLP's disclosures regarding audit quality and performance;
- the appropriateness of Ernst & Young LLP's audit fees, including fees for non-audit services; and
- the potential impact to the company of changing our independent registered public accounting firm.

In addition, our audit committee is responsible for the oversight of the process to select, review and evaluate Ernst & Young LLP's lead audit partner, including by meeting with the candidate for lead audit partner (or candidates for lead audit partner in connection with the rotation of the lead audit partner) and engaging in discussions with company management.

Neither our bylaws nor other governing documents or law require stockholder ratification of the selection of Ernst & Young LLP as our independent registered public accounting firm. However, our audit committee is presenting this proposal to the stockholders for ratification as a matter of good corporate governance. In the event that this appointment is not ratified by our stockholders, our audit committee will consider that fact when it selects our independent auditors for the following fiscal year.

We expect that representatives of Ernst & Young LLP will attend the Annual Meeting. We will provide these representatives an opportunity to make a statement at the Annual Meeting if they desire to do so and they will be available to respond to appropriate questions from stockholders.

Vote Required

The proposal to ratify the appointment of Ernst & Young LLP as our independent registered public accounting firm for the year ending December 31, 2019 requires the affirmative vote of the majority of the votes cast at the Annual Meeting by the holders of the shares represented in person or represented by proxy and entitled to vote on the proposal. Abstentions and broker non-votes will have no effect on the vote.

[Table of Contents](#)

Our Recommendation

OUR BOARD UNANIMOUSLY RECOMMENDS A VOTE “FOR” THE RATIFICATION OF THE APPOINTMENT OF ERNST & YOUNG LLP AS OUR INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM FOR THE FISCAL YEAR ENDING DECEMBER 31, 2019.

Pre-Approval Policies and Procedures

Our audit committee pre-approves the fees and other compensation we pay to Ernst & Young LLP for audit services and non-audit services, which may include audit-related services, tax services and other services.

Our audit committee may delegate to one or more designated members of our audit committee the authority to grant required pre-approvals. The decisions of any member to whom authority is delegated to pre-approve services of Ernst & Young LLP must be presented to our full audit committee at its next scheduled meeting. All fees and other compensation for non-audit services provided to us by Ernst & Young LLP in the fiscal years ended December 31, 2018 and December 31, 2017 were approved by our audit committee in accordance with the pre-approval policies and procedures described above and applicable SEC rules and regulations.

Independent Registered Public Accounting Firm Fees and Services

During the fiscal years ended December 31, 2018 and 2017, we retained Ernst & Young LLP to provide audit and other services. The following table represents aggregate fees billed or to be billed to us by Ernst & Young LLP for services performed for the fiscal years ended December 31, 2018 and 2017.

Fees	2018	2017
Audit Fees(1)	\$ 1,592,100	\$ 1,298,400(2)
Audit-Related Fees	—	—
Tax Fees(3)	—	—
All Other Fees(4)	\$ 1,420	\$ 1,980
Total	<u>\$ 1,593,520</u>	<u>\$ 1,300,380</u>

- (1) This category consisted of fees for professional services rendered for the audit of our annual financial statements, audit of the effectiveness of our internal control over financial reporting, review of interim financial statements, assistance with registration statements filed with the SEC and other services that are normally provided by an independent registered public accounting firm in connection with statutory and regulatory filings or engagements.
- (2) Ernst & Young LLP finalized and provided us with the final invoice for our 2017 audit after the date on which we finalized our 2018 proxy statement. Accordingly, the amount of audit fees that we reported for 2017 was based on our estimate of such fees as of March 12, 2018. The amount shown for audit fees for 2017 was \$110,000 higher than the amount of such fees that we reported in our 2018 proxy statement.
- (3) This category consisted of fees for the preparation and filing our tax returns and related general tax advice.
- (4) This category consisted of fees related to accessing Ernst & Young LLP’s online research database.

PROPOSAL 4

APPROVAL OF THE STOCK OPTION EXCHANGE PROGRAM

General

On April 2, 2019, our Board authorized a stock option exchange program, or the Option Exchange, pursuant to which we would give eligible employees the opportunity to exchange eligible stock options for new stock options with an exercise price equal to the fair market value of our common stock at the time the new stock options are granted. An eligible stock option generally includes any stock option held by an eligible employee that has an exercise price equal to or greater than \$18.00 per share and was granted on or prior to June 6, 2018 pursuant to our 2013 Omnibus Incentive Plan, or our 2013 Plan, or our 2010 Equity Incentive Plan, or our 2010 Plan, and together with our 2013 Plan, our Equity Plans. **Members of our Board and our named executive officers are not eligible to participate in the Option Exchange.**

As of March 31, 2019, we had outstanding stock options held by employees, other than our named executive officers, to purchase 1,049,042 shares of our common stock with a weighted average exercise price of \$26.62 per share. Of these stock options, there were 623,458 shares with an exercise price equal to or greater than \$18.00 per share with a weighted average exercise price of \$36.40 that would be considered eligible for purposes of the Option Exchange.

The Board believes that the Option Exchange is in the best interests of our stockholders and the company, as we believe that new stock options granted under the Option Exchange will provide a better incentive and motivation to employees than the underwater options they currently hold and would surrender. Receipt of new options at a lower exercise price will increase the retention of our talented employees, reduce the costs and disruptions associated with employee resignations and better ensure our performance as a company. As an alternative to increased cash compensation, the Option Exchange will allow us to devote more of our cash resources toward advancing our research and development programs and moving our product candidates into and through the clinic. In addition, it will provide the opportunity to reduce the “overhang” of outstanding stock options, many of which are well out of the money.

Rationale for Option Exchange

We evaluated several alternatives to the Option Exchange for remaining competitive within our industry and with our employees, including granting additional stock options or restricted stock awards, exchanging underwater options for full value shares or exchanging underwater options for a cash payment. While equity awards and cash compensation are part of our overall compensation packages, we do not believe that relying exclusively on such approaches is an ideal use of our resources. For example, granting additional stock options or restricted stock awards would cause dilution to our current stockholders, and increasing cash compensation would reduce the cash resources we can devote to our research and development programs. Accordingly, we determined that the Option Exchange was the most attractive alternative for stockholders for the reasons set forth below.

Performance Incentives

We face significant competition for experienced and talented personnel in our industry, and stock options are an important part of our incentive compensation. The price of our common stock has significantly decreased over the last few years. While we have made significant progress in advancing our product candidates into and through the clinic and remain optimistic regarding our growth potential, the price of our common stock remains relatively low. On March 29, 2019, the closing price of our common stock on The Nasdaq Global Select Market was \$13.40 per share, resulting in approximately 63.7% of our outstanding stock options held by employees, other than our named executive officers, being underwater, which means that the stock option exercise price exceeded the market price of our common stock on such date. Our compensatory stock options cannot be sold. They can either be voluntarily exercised when there is a positive spread between the exercise price and the market price of our common stock or they will expire unexercised. Underwater stock options are not effective as performance incentives because they provide less or no perceived value to employee option holders. In addition, because many of our options are significantly underwater, the likelihood that there will be a positive spread between their exercise prices and the near-term price of our common stock is too low to provide meaningful incentive to employee option holders.

Employee Retention

We designed the Option Exchange to restore equity value, increase retention and motivation in a competitive labor market, provide non-cash compensation incentives and better align our employee and stockholder interests for long-term growth. Underwater stock option awards are of limited benefit in motivating and retaining our employees. Through the Option Exchange, we believe that we will be able to enhance long-term stockholder value by increasing our ability to retain experienced and talented employees and by better aligning the interests of these individuals with the interests of our stockholders. As of March 29, 2019, 63.7% of the stock options held by our employees, excluding our named executive officers, were underwater and, for a large number of such employees, significantly so. As a result, we may face a considerable challenge in retaining our employees, and there is a possibility that our competitors may be able to offer equity incentives that are more attractive and that, in some cases, could make the terms of employment at a new employer more attractive than what we offer to our existing employees. The Option Exchange is designed to address these concerns as well as improve morale among our employees generally and reinvigorate a culture where equity compensation is a key component of our overall compensation package.

As discussed in more detail below, none of the new stock options issued under the Option Exchange will be vested on the date of grant. Stock options issued in the Option Exchange will vest in equal monthly amounts over either a one- or three-year period from the grant date of such new stock options, depending on whether such options are already vested at the time we implement the Option Exchange. The stock options eligible to be exchanged are generally subject to a four-year vesting schedule, in which twenty-five percent of shares vest after one year and the remaining shares vest in equal monthly installments thereafter. Our compensation committee believes that implementing a new extended vesting schedule is appropriate because it encourages retention of employees over the next one to three years, which will be an important period for the company.

Impact on Compensation Expense

The value of the stock options eligible for exchange was based on the then fair market value of our common stock on the applicable grant date. Under applicable accounting rules, we will recognize a total of approximately \$14.7 million in non-cash compensation expense related to eligible underwater stock options, \$8.7 million of which has already been expensed as of March 31, 2019 and \$6.0 million of which we will continue to be obligated to expense, even if these stock options are never exercised because they remain underwater, except to the extent any such options are cancelled due to termination of service of any eligible employee prior to vesting. Replacing current stock options that have little or no retention or incentive value with new stock options that will provide both retention and incentive value while not creating significant additional compensation expense will make efficient use of our resources.

[Table of Contents](#)

Reduce Stock Overhang

Under the Option Exchange, eligible participants will receive new stock options covering a smaller number of shares than are covered by the surrendered stock options. Therefore, if we implement and eligible employees participate in the Option Exchange, we would meaningfully reduce the number of outstanding stock options. The number of shares covered by the new stock options are based on exchange ratios developed by using a Black-Scholes calculation that values the old grant relative to the projected value of the new grant, such that the new stock options will have a fair value, on an aggregate basis, proportionate to the fair value of the eligible stock options they replace. Our compensation committee, in consultation with Radford, established the exchange ratios, which vary based on the original exercise price of the eligible stock option, as described further in the section titled “Exchange Ratios” below.

As of March 31, 2019, we had a total of 1,049,042 shares of common stock subject to outstanding stock options under our Equity Plans, which range in exercise prices from \$1.23 per share to \$59.39 per share. As a result, we have developed a significant stock option “overhang” consisting of outstanding but unexercised options that are not serving their intended purposes of motivating and retaining employees. Not only do the underwater stock options have diminished employee retention value, but also they cannot be removed from our equity award overhang until they are exercised, expire or otherwise cancelled (for example, upon termination of an employee’s service with the company). Significant overhang may portend additional dilution to existing and potential stockholders and may therefore have the effect of inhibiting additional investment in our common stock, which can have a negative impact on stock price and trading volume. By replacing stock options through the Option Exchange, we estimate that we can reduce our overhang of outstanding stock options by as much as 0.8% of our outstanding common stock.

Alternatives Considered

Our compensation committee considered alternatives to the Option Exchange to provide meaningful performance and retention incentive to our employees, including providing new option or restricted stock awards to employees, exchanging underwater options for full value shares or exchanging underwater options for a cash payment. After careful consideration, our compensation committee determined that, compared to other alternatives, the Option Exchange provides better performance and retention incentives at a lower cost to the company and with less dilution to stockholders.

Structure of the Option Exchange

The Board authorized the Option Exchange on April 2, 2019, subject to stockholder approval. We currently plan to commence the Option Exchange on a date as soon as practicable following June 30, 2019, or the Commencement Date. At the start of the Option Exchange, employees holding eligible stock options will receive a written exchange offer that will set forth the terms of the Option Exchange. The written offer will be governed by the tender offer rules of the SEC. At or before the Commencement Date, we will file the offer to exchange and other related documents with the SEC as part of a tender offer statement on Schedule TO. We will give eligible option holders at least 20 business days to elect to participate in the Option Exchange. Eligible option holders may choose which eligible option grants they wish to exchange and may choose to not exchange portions of eligible option grants. Set forth below is a description of the key features of the Option Exchange.

[Table of Contents](#)

Eligible Participants

The Option Exchange will be available to employees, excluding our named executive officers, who on the Commencement Date are employed by us and hold outstanding eligible stock options. **Members of our Board and our named executive officers are not eligible to participate in the Option Exchange.** As of March 31, 2019, eligible stock options were held by approximately 51.6% of our employees. Participants in the Option Exchange must continue to be employed by us on the date the surrendered options are cancelled and replacement stock options are granted. Any employee holding eligible stock options who elects to participate in the Option Exchange but whose service with us terminates for any reason before the date the new stock options are granted, including due to voluntary resignation, retirement, involuntary termination, layoff, death or disability, would retain his or her eligible options subject to their existing terms and would not be eligible to receive new stock options in the Option Exchange.

Eligible Stock Options

As of March 31, 2019, we had outstanding eligible stock options to purchase 623,458 shares of common stock under our Equity Plans at a weighted-average exercise price of \$36.40 per share and with a weighted-average remaining life of 7.65 years. These eligible stock options represent approximately 1.7% of the issued and outstanding shares of our common stock as of March 31, 2019. If all of these eligible stock options are exchanged and replaced by new stock options in accordance with the exchange ratios described below under the section heading "Exchange Ratios," the number of outstanding stock options under our Equity Plans would be reduced by 289,206 shares, representing approximately 0.8% of our common stock issued and outstanding as of March 31, 2019.

Exchange Ratios; Exercise Price of New Options

The Option Exchange is not a one-for-one exchange. We designed the exchange ratios for the Option Exchange to result in a fair value of the new stock options that will be proportionate, on an aggregate basis, to the fair value of the eligible stock options that employees would surrender (based on valuation assumptions made when the design of the Option Exchange was approved by our compensation committee). We established the exchange ratios by grouping together eligible stock options with similar exercise prices. At the time the compensation committee approved the general design of the Option Exchange, including the exchange ratios, the fair market value of our common stock was \$11.97 per share (the closing price of our common stock on The Nasdaq Global Select Market on February 25, 2019). The exchange ratios are based on the fair value of the eligible stock options (calculated using the Black-Scholes model) within the relevant grouping. Calculation of fair value takes into account variables such as the volatility of our stock, the expected term of a stock option and interest rates. As illustrated in the table below, the applicable exchange ratios will vary based on the exercise price of the eligible stock option.

<u>Exercise Price Range per Share</u>	<u>Number of Outstanding Eligible Options</u>	<u>Exchange Ratio (Surrendered Stock Options to New Stock Options)</u>
\$18.00 to \$24.99	181,980	1.50 to 1
\$25.00 to \$34.99	57,500	1.75 to 1
\$35.00 to \$44.99	168,628	2.00 to 1
\$45.00 and above	215,350	2.25 to 1

[Table of Contents](#)

The total number of shares of common stock issuable upon exercise of new stock options will be determined by dividing the number of shares underlying the surrendered stock option by the applicable exchange ratio and rounding up to the nearest whole share. For purposes of illustration, if an employee holds a stock option to purchase 10,000 shares of common stock with an exercise price of \$45 per share, the employee would be entitled to exchange that option for a replacement stock option to purchase 4,445 shares of common stock after applying the applicable 2.25:1 exchange ratio. For further illustration, an eligible employee who holds an option to purchase 10,000 shares of common stock with an exercise price of \$20 per share could exchange that option for a replacement stock option to purchase 6,667 shares of common stock after applying the applicable 1.5:1 exchange ratio. All replacement stock options granted based on the foregoing exchange ratios will have an exercise price equal to the fair market value of our common stock at the time we grant replacement options at the end of the exchange period.

Vesting Schedules for New Options

New stock option awards will not be vested on the date of grant. Eligible stock options that are vested as of the exchange date may be exchanged for new stock options with a new one-year vesting schedule, and eligible stock options that are not vested as of the exchange date may be exchanged for new stock options with a new three-year vesting schedule, in each case vesting in equal monthly amounts over the vesting term, subject to the applicable employee's continued service through each vest date. These new vesting schedules support the nature of stock options as an incentive vehicle, recognize the prior services and contributions of eligible employees and provide us with valuable additional years of employee retention during an important time for the company.

Term for New Options

The new stock options will expire seven years following the date we grant the new stock options.

Intended Implementation of the Option Exchange As Soon As Practicable Following June 30, 2019

We currently plan to commence the Option Exchange as soon as practicable after June 30, 2019. Our Board reserves the right in its discretion to amend, postpone or, under certain circumstances, cancel the Option Exchange once it has commenced, but the Option Exchange will not be materially amended in a manner that is more beneficial to eligible participants without first seeking additional stockholder approval.

Impact of Option Exchange on Surrendered Options

Assuming all eligible employees participate in the Option Exchange with respect to 100% of their eligible stock options, we estimate that there will be 289,206 shares of common stock underlying stock options that are surrendered under the Option Exchange but are not replaced by new stock options. These shares will be returned to the share reserve of the 2013 Plan and will be available for future grant of equity awards under the 2013 Plan.

Option Exchange Process

Additional information regarding how we expect to conduct the Option Exchange, provided it is approved by stockholders, is set forth below. While the terms of the Option Exchange are expected to conform to the material terms described in this Proposal 4, we may find it necessary or appropriate to change the terms of the Option Exchange to take into account our administrative needs, accounting rules, or company policy decisions or to comply with any comments we receive from the SEC. We may decide not to implement the Option Exchange even if we obtain stockholder approval, or we may delay, amend or terminate the Option Exchange once it is in progress. The final terms of the Option Exchange will be described in the exchange offer documents that will be filed with the SEC and available at www.sec.gov.

[Table of Contents](#)**Overview of the Option Exchange Process**

Upon commencement of the Option Exchange, those individuals holding eligible stock options will receive a written offer setting forth the terms of the Option Exchange and may voluntarily elect to participate. All employees, excluding our named executive officers, who are employed by us on the Commencement Date, are still employed by us on the grant date of the new stock options, and hold eligible stock option awards may participate in the Option Exchange. We will give eligible participants at least 20 business days to elect to surrender eligible stock options in exchange for a smaller number of new stock options. Upon completion of the Option Exchange, surrendered stock options will be cancelled and new stock options will be granted. The shares of our common stock underlying the cancelled options will then be available for future grant under the 2013 Plan.

The 2013 Plan will govern all terms and conditions of new stock options not specifically addressed by the Option Exchange described in this proxy statement. Additionally, it is anticipated that new options will be non-qualified stock options.

Election to Participate

Eligible employees will receive a tender offer document and will be able to voluntarily elect to participate in the Option Exchange. If you are both a stockholder and an eligible employee holding stock options that may be subject to the Option Exchange, please note that voting to approve the Option Exchange pursuant to this Proposal 4 does not constitute an election to participate in the Option Exchange. The written exchange offer documents described above will be provided if and when the Option Exchange is commenced, and you can only elect to participate after that time.

Impact of Option Exchange on Number of Options Issued

Our compensation committee established exchange ratios that will result in the issuance of a lesser number of stock options through the Option Exchange than the number of stock options originally granted to eligible employees. The exchange ratios have been grouped together based on similar exercise prices. The following table illustrates the impact of the Option Exchange on the number of stock options outstanding as of March 31, 2019, assuming that 100% of employees eligible to participate as of March 31, 2019 exchange 100% of their eligible stock options in the Option Exchange.

Exercise Price Range per Share	Outstanding Eligible Options			Exchange	
	Number of Existing Options (shares)	Weighted Average Exercise Price (\$)	Exchange Ratio	Total New Options Granted (shares)	Potential Net Shares Recaptured
\$18.00 to \$24.99	181,980	\$ 19.41	1.50 to 1	121,339	60,641
\$25.00 to \$34.99	57,500	\$ 29.77	1.75 to 1	32,861	24,639
\$35.00 to \$44.99	168,628	\$ 42.90	2.00 to 1	84,317	84,311
\$45.00 and above	215,350	\$ 48.73	2.25 to 1	95,735	119,615
Totals	623,458	\$ 36.40		334,252	289,206

As described above under the section titled “Exchange Ratios,” the total number of shares of common stock issuable upon exercise of new stock options that a participating employee will receive with respect to a surrendered stock option will be determined by dividing the number of shares surrendered by the applicable exchange ratio and rounding up to the nearest whole share.

[Table of Contents](#)

Effect on Stockholders

Under the terms of the Option Exchange, the new stock options are meant to have a fair value that will be proportionate, on an aggregate basis, to the fair value of the cancelled stock options they would replace. While we cannot predict how many employees will elect to participate in the Option Exchange, assuming that 100% of employees eligible as of March 31, 2019 participate in the Option Exchange, and based on the exchange ratios established by our compensation committee, eligible stock options to purchase approximately 623,458 shares of common stock may be surrendered and cancelled in the Option Exchange, which would result in the company issuing stock options for approximately 334,252 shares of common stock and would result in a net reduction in our stock option overhang of approximately 289,206 shares of common stock.

Accounting Impact

The incremental compensation expense associated with the Option Exchange will be measured as the excess, if any, of the fair value of each award of new stock option granted to participants in the Option Exchange, measured as of the date the new stock options are granted, over the fair value of the stock options surrendered in exchange for the new stock options, measured immediately prior to the cancellation. We do not expect the incremental compensation expense, if any, to be material. We will recognize any such incremental compensation expense ratably over the vesting period of the new stock options.

Material U.S. Federal Income Tax Consequences of the Option Exchange

The exchange of stock options pursuant to the Option Exchange should be treated as a non-taxable exchange because the new stock options will have an exercise price equal to or greater than the fair market value of our common stock on the grant date. Neither the company nor the participants in the Option Exchange should recognize any income for U.S. federal income tax purposes upon the grant of the new stock options. New stock options granted under the Option Exchange will be non-qualified stock options for U.S. federal income tax purposes. Tax effects may vary in other countries. A more detailed summary of tax considerations will be provided to all participants in the Option Exchange documents.

Financial Statements

Our financial statements and other information required by Item 13(a) of Schedule 14A under the Exchange Act are incorporated by reference from our Annual Report on Form 10-K for the fiscal year ended December 31, 2018, filed with the SEC on February 26, 2019.

Vote Required

Approval of the Option Exchange requires the affirmative vote of the majority of the votes cast at the Annual Meeting by the holders of the shares represented in person or represented by proxy and entitled to vote on the proposal. Abstentions and broker non-votes will have no effect on the vote.

If you are both a stockholder and an eligible employee holding eligible stock options, please note that voting to approve the Option Exchange does not constitute an election to participate in the Option Exchange.

Our Recommendation

OUR BOARD UNANIMOUSLY RECOMMENDS A VOTE “FOR” THE APPROVAL OF OUR STOCK OPTION EXCHANGE PROGRAM.

EXECUTIVE COMPENSATION

Compensation Discussion and Analysis

This Compensation Discussion and Analysis describes our compensation philosophy, the material elements and objectives of our compensation programs for our named executive officers and directors, and the factors, rationale and processes used to determine compensation for our named executive officers and directors in 2018.

Our named executive officers for the year ended December 31, 2018 are as follows:

- Aron M. Knickerbocker, President and Chief Executive Officer;
- David V. Smith, Executive Vice President and Chief Financial Officer (commenced this position on November 26, 2018);
- Bryan Irving, Ph.D., Executive Vice President and Chief Scientific Officer;
- Helen Collins, M.D., Senior Vice President and Chief Medical Officer;
- Francis W. Sarena, Chief Strategy Officer and Secretary;
- Marc L. Belsky, Former Senior Vice President and Chief Financial Officer (resigned from this position, effective April 6, 2018); and
- Linda Rubinstein, Interim Chief Financial Officer (served from April 13, 2018 to November 25, 2018).

Executive Compensation Philosophy

We have a pay-for-performance focused executive compensation philosophy. We believe that compensation should be designed to drive company performance to increase stockholder value. We seek to achieve this by using different elements of compensation and a market-based approach to attract, retain and motivate a high-performing team of executive officers and by aligning most of each of our executives' compensation with the company's short- and long-term performance, as well as each such executive's individual contributions. We generally target each element of our executive compensation at the 50th percentile of our executive compensation peer group but may deliver compensation to a particular executive at levels above or below the 50th percentile depending on the particular executive's experience, knowledge and skills for the position or in order to align an element of compensation of that executive officer with other executive officers of the company. For example, for executive officers who are new to their roles and are developing the experience, knowledge and skills for the position, we may target compensation between the 25th and 50th percentile level of our executive compensation peer group for a comparable position.

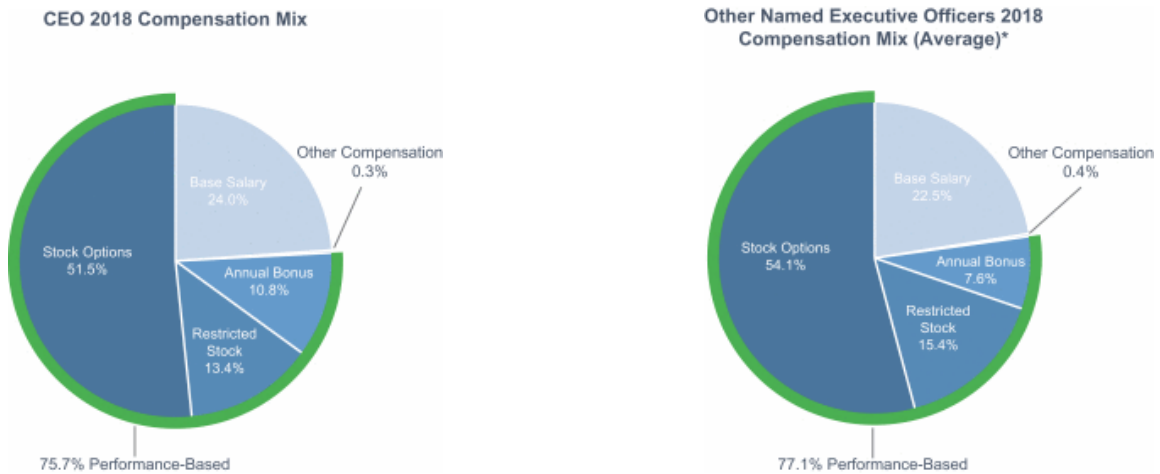
In January 2016, in response to an increase in demand during 2014 and 2015 for highly qualified clinical, scientific, technical and management personnel, in particular those with immuno-oncology experience and those located in the San Francisco Bay Area, our compensation committee believed it was appropriate to begin to target our long-term incentive compensation to deliver value at the 75th percentile of our peer group. In January 2018, however, our compensation committee conducted its annual evaluation of our executive compensation program and determined that, although the demand for highly qualified clinical, scientific, technical and management personnel remained high, it was prudent and appropriate to adjust our target long-term incentive compensation back to the 50th percentile of our peer group. Our compensation committee believes this change will still allow us to continue to attract and retain key talent and execute our strategic objectives while allowing us to sustain our long-term growth. In January 2019, our compensation committee conducted its annual evaluation of our executive compensation program and determined that because our stock price had declined over the course of 2018, it was prudent and appropriate to temporarily lower our long-term incentive compensation target to the 40th percentile in order to better manage our equity usage as we deliver long-term incentive compensation in the form of stock options and shares of restricted stock. Our compensation committee believes that our executive compensation program is consistent with the goals of our compensation philosophy.

Table of Contents

At our annual meeting of stockholders in May 2018, we held a stockholder advisory vote on the compensation we paid to our named executive officers, commonly referred to as a “say-on-pay vote,” which resulted in approval of such compensation by 93.3% of our stockholders voting on the advisory proposal. We take the views of our stockholders seriously and view this vote result as an indication that the principles guiding our executive compensation program are supported by our stockholders. As such, we have continued to maintain these principles in determining executive compensation. In addition, in 2017, our stockholders indicated their preference that we solicit a say-on-pay vote on an annual basis. Our Board has adopted a policy that is consistent with that preference and, accordingly, we are holding a say-on-pay vote at the Annual Meeting.

Our compensation committee regularly reviews the executive compensation programs and practices of the company and other companies in our industry and our executive compensation peer group as well as evolving trends in executive compensation to ensure that our programs and practices continue to reflect our philosophy and remain competitive to encourage high performance, the execution of our strategy and the advancement of our target discovery, research, preclinical and clinical programs.

We believe that it is important that performance- and equity-based compensation comprise a substantial portion of each of our executives’ total compensation in order to align our executives’ interests with those of our stockholders. The charts below illustrate the extent to which we weight compensation towards performance- and equity-based compensation.



* As described below, Linda Rubinstein served as our Interim Chief Financial Officer pursuant to a consulting agreement that we entered into with FLG Partners, LLC, or FLG Partners, a chief financial officer services and advisory board consulting firm. The compensation we paid to FLG Partners in consideration for Ms. Rubinstein’s services does not reflect our standard practices with respect to our executive compensation program. Accordingly, this chart with respect to our other named executive officers does not reflect such compensation.

Listed below are some of the compensation practices we employ in our executive compensation program that reinforce or are reflective of our philosophy.

What we do:

- ✓ **Performance metrics tied to company performance.** The performance metrics for our annual incentive plan are tied to company performance, aligning the interests of our executives with those of our stockholders.
- ✓ **Multi-year vesting requirements.** The equity awards we grant to our executive officers generally vest over multi-year periods, consistent with current market practice and our retention objectives.
- ✓ **Double-trigger termination rights.** Our executive severance agreements require both a change-in-control and a termination of employment for full severance benefits to be triggered.
- ✓ **Stock ownership guidelines.** Our stock ownership guidelines require our executive officers to maintain ownership of a minimum number of shares of our common stock, representing a meaningful equity interest in the company, in order to align our executive officers' interests with our stockholders' interests.
- ✓ **Independent compensation committee.** Our compensation committee is comprised solely of independent members of our Board.
- ✓ **Independent compensation consultant.** Our compensation committee uses an independent compensation consultant that provides no other material services to the company.

What we do not do:

- ✗ **No tax gross-ups.** None of our executive severance benefits agreements or other employment-related agreements provide for excise tax "gross-ups."
- ✗ **No special perquisites.** We do not provide our executives with perquisites or other personal benefits that differ materially from those available to employees generally.
- ✗ **No retirement plans other than 401(k).** We do not provide any pension or other retirement benefits to our executive officers, except that we offer all employees the right to participate in a company-sponsored 401(k) plan under which we match 50% of employee contributions up to \$6,000 per year.
- ✗ **No special health or welfare benefits.** We do not provide our executives with any special health or welfare benefits. Our executive officers participate in the same broad-based company-sponsored health and welfare benefits programs offered to our other full-time, salaried employees.
- ✗ **Hedging and pledging prohibited.** Our trading compliance policy prohibits our executive officers and directors from hedging or pledging our securities.

Executive Summary

We are a clinical-stage biotechnology company focused on discovering and developing innovative protein therapeutics to improve the lives of patients with serious diseases. Each of our product candidates has an innovative mechanism of action and addresses patient populations for which better therapies are needed. Our primary focus is on researching and developing immuno-oncology and targeted cancer therapies. In addition, we use companion diagnostics where appropriate to allow us to select patients most likely to benefit from treatment with our product candidates.

[Table of Contents](#)

2018 Business Highlights

We made significant progress in 2018 as we and our partners continued to advance our therapeutic programs into and through the clinic. We started 2018 with two therapeutic candidates, bemarituzumab and cabiralizumab, in clinical development. During 2018, we advanced FPA150 and FPT155 and Bristol-Myers Squibb Company, or BMS, advanced BMS-986258 into clinical development. Accordingly, we completed 2018 with five assets from our pipeline in clinical development. We also continued to build out our clinical development capabilities and operations to meet the needs of our growing and advancing pipeline of therapeutic candidates. We believe our achievements in 2018 position us to continue to achieve our strategic objectives. The following is a summary of some of our significant achievements and developments in 2018.

- **Bemarituzumab (FPA144; FGFR2b antibody).** We completed the Phase 1 safety lead-in of our global registrational trial evaluating bemarituzumab in combination with 5-fluorouracil, or 5-FU, leucovorin, and oxaliplatin, a regimen known as mFOLFOX6, as front-line treatment for patients with gastric or gastroesophageal, or GEJ, cancer whose tumors overexpress FGFR2b, or the FIGHT trial, and initiated the Phase 3 portion of the FIGHT trial. In addition, we completed a Phase 1 clinical trial in Japan evaluating bemarituzumab monotherapy to treat patients with gastric or GEJ cancer. The data from this Phase 1 trial enabled us to obtain approval from Japanese regulatory authorities to include Japanese patients in our Phase 3 FIGHT trial.
- **FPA150 (B7-H4 antibody).** In March 2018, we initiated the dose escalation portion of our Phase 1a/1b clinical trial evaluating FPA150 as a potential therapy in patients with a variety of cancers. In October 2018, we completed a Phase 1a dose escalation cohort testing a dose that has shown efficacy in preclinical models and initiated patient dosing at this dose in an exploratory cohort of the trial. We completed the Phase 1a monotherapy dose escalation portion of the trial in January 2019, which enabled us to begin enrolling patients in the Phase 1b portion of the trial in February 2019.
- **FPT155 (CD80-Fc fusion protein).** In November 2018, we initiated the dose escalation portion of our Phase 1a/1b clinical trial evaluating FPT155 in patients with solid tumors.
- **Cabiralizumab (FPA008; CSF1-R antibody).** We completed enrollment in our ongoing Phase 1a/1b clinical trial testing cabiralizumab in combination with *Opdivo*[®] (nivolumab) as a potential treatment for various cancers. Clinical data from the cohort of patients with advanced pancreatic cancer from this Phase 1a/1b clinical trial suggest that the combination of cabiralizumab and *Opdivo* may benefit patients with pancreatic cancer. Based on this data, in January 2018, our partner, BMS, began enrolling patients in a randomized, controlled, multi-arm Phase 2 clinical trial to determine the efficacy of cabiralizumab in combination with *Opdivo*, with and without chemotherapy, as a treatment for patients with second-line pancreatic cancer. We earned a \$25 million milestone payment from BMS upon the dosing of the first patient in this trial. Data presented in a poster presentation at the 2018 American Society of Clinical Oncology annual meeting along with other data obtained from the trial thus far support further clinical development of cabiralizumab in combination with *Opdivo* in multiple indications, including pancreatic cancer. Accordingly, BMS has expanded its development of cabiralizumab within pancreatic cancer and in other tumor settings.
- **BMS-986258 (TIM-3 antibody).** BMS initiated a Phase 1/2 clinical trial of BMS-986258, its anti-T cell immunoglobulin and mucin domain-3, or TIM-3, antibody, both as a single agent and in combination with *Opdivo* in patients with advanced malignant tumors (NCT03446040). BMS-986258 is BMS's first clinical candidate arising from our March 2014 immuno-oncology research collaboration with BMS. We received a \$5 million milestone payment in connection with BMS's filing of an investigational new drug application, or IND, for BMS-986258 in January 2018.
- **Discovery Collaborations.** BMS elected to extend, for the second time, the research term of our March 2014 discovery collaboration for an additional year from March 2018 to March 2019 to continue work to advance antibody drug candidates targeting TIM-3 and two additional immuno-oncology related pathways.

[Table of Contents](#)

- **Public Offering.** We closed an upsized public offering of 5,897,435 shares of our common stock that included 769,230 shares sold upon the underwriters' full exercise of their option to purchase additional shares, which resulted in aggregate gross proceeds to us of \$115 million and estimated net proceeds of approximately \$107.6 million, after deducting discounts, commissions and expenses.

Governance of Executive Compensation Program

Role of Compensation Committee

Our compensation committee is responsible for fulfilling our Board's responsibility to oversee the compensation of our executive officers, including our Chief Executive Officer, and directors. This responsibility includes oversight of the plans, policies and programs that apply to evaluating the performance and development of and compensating our executive officers and the processes for consideration and determination of executive and director compensation. Our compensation committee also oversees the preparation of the Compensation Discussion and Analysis that we include in our proxy statement and reviews and assesses the results of our stockholder advisory say-on-pay votes and our stockholder advisory vote to determine the frequency with which we hold say-on-pay votes in order to recommend appropriate actions to the Board. Our Board has ultimate oversight responsibility over executive officer compensation matters and may exercise final approval of any executive officer compensation decision, except as may be otherwise required under applicable law. However, our compensation committee may recommend compensation for our executive officers, and our Board delegated all decision-making responsibility to our compensation committee for 2018 executive compensation-related matters, including with respect to the evaluation of the company's performance against our 2018 corporate goals and the performance of our executive officers. Our compensation committee's charter is available in the "Corporate Governance" section of our investor relations website at investor.fiveprime.com/corporate-governance.

Our compensation committee periodically reviews and evaluates the components and effectiveness of our executive compensation program to ensure that our executive compensation program is consistent with our goals and aligned with our executive compensation peer group and the marketplace in which we compete for executive talent. In conducting these reviews and evaluations, our compensation committee utilizes the services of an independent compensation consultant to provide advice regarding executive compensation, including with respect to the composition of our peer group, gather peer group and other relevant executive compensation information and trends, and analyze this information.

Our compensation committee generally reviews and approves the base salary and annual cash bonus for our executive officers at the beginning of each calendar year. From time to time, our compensation committee may review and make changes to annual base salary or target bonus rates at other times during the year as needed (for example, in connection with a mid-year promotion). Our compensation committee also reviews and approves annual long-term equity incentive awards on an annual basis, which generally concludes in the February or March timeframe each year.

[Table of Contents](#)

Role of Management

Our compensation committee works with and receives information and analyses from our Chief Executive Officer and other members of the company's management team, including within our Human Resources, Finance and Legal departments, and considers such information and analyses in determining the structure and amount of compensation to be paid to our executive officers. Our management team provides information to our compensation committee regarding executive officer performance, market and peer group data and information, and management's recommendations and proposals regarding executive officer compensation programs and decisions affecting base salaries, cash bonuses, long-term equity incentive compensation and other compensation-related matters. From time to time, our compensation committee also solicits input from independent members of our Board, in particular in evaluating the performance of our Chief Executive Officer. Members of management, including certain of our executive officers, attend portions of our compensation committee's meetings; however, executive officers are not present during decisions regarding their respective compensation.

Our Human Resources department periodically purchases third-party compensation benchmark surveys and prepares and provides analyses to assist our compensation committee's evaluation and comparison of each element of executive compensation.

Role of Compensation Consultant

Our compensation committee has the sole authority and right, at our expense, to engage independent external compensation and other consultants and advisors to assist the committee in performing its responsibilities, including to obtain information, analysis and advice regarding our executive compensation program and decision-making. Our compensation committee has engaged Radford to assist it in this regard and sets the compensation for and oversees the work of Radford.

During 2018, Radford attended meetings of and provided the following services to our compensation committee, including with respect to evaluations and decisions regarding 2018 and 2019 executive officer and director compensation:

- reviewing and recommending revisions to the executive compensation peer group we used in 2018 and the peer group we are using in 2019;
- providing compensation information for our peer group companies and competitive data for our executive officers and members of our Board;
- providing competitive market data based on the compensation peer group for the non-employee members of our Board and evaluating the compensation we pay our non-employee directors;
- reviewing the base salaries, annual cash incentive award opportunities and long-term incentive compensation opportunities of our executive officers;
- evaluating how our executive compensation compares to our performance and to the executive compensation of the companies in our peer group;
- providing guidance on trends in executive officer and director compensation, corporate governance and regulatory issues and developments;
- reviewing our peer group and market equity compensation practices, including burn rate and overhang;
- reviewing equity ownership guidelines and best practices;
- consulting with our compensation committee chairman periodically between compensation committee meetings; and
- reviewing the "Compensation Discussion and Analysis" section of our proxy statement.

Table of Contents

Our compensation committee has reviewed the independence of Radford, including the six independence factors adopted by the SEC and The Nasdaq Stock Market, and determined that Radford is independent and that its work for our compensation committee did not raise any conflicts of interest.

At the request of our management, we also engaged Radford during 2018 to assist with evaluating and designing the stock option exchange program we are proposing for stockholder approval at the Annual Meeting as well as an overall employee retention program. For purposes of minimizing any potential conflicts of interest, we disclose to our compensation committee any services we plan to have Radford provide to management prior to the commencement of such services. Although management notified our compensation committee of these additional services, our compensation committee did not review and approve such services as these services were reviewed and approved by management in the ordinary course of business, and our compensation committee did not believe that there was any potential conflict of interest raised by such services.

Peer Group Selection and Benchmarking

To inform executive compensation decisions and ensure the competitiveness of our executive compensation programs and decisions, our compensation committee benchmarks our executive compensation against the executive compensation of a peer group of companies. Our compensation committee selects companies to include in our executive compensation peer group that on balance generally meet the following criteria at the time of selection:

- companies whose stage of product development, therapeutic focus, market capitalization and number of employees are similar to ours; and
- companies that are headquartered in the San Francisco Bay Area or another significant biotechnology market (e.g., Boston or San Diego).

Our stage of development, market capitalization and number of employees may change year over year, and the companies within our peer group may undergo similar changes, get acquired or, in some instances, change therapeutic focus. Accordingly, our compensation committee annually reviews and, as appropriate, revises our peer group composition to ensure it continues to represent companies that meet our criteria. Our compensation committee receives input in this review process from Radford as well as our management.

[Table of Contents](#)

In August 2017, our compensation committee worked with Radford to evaluate our peer group. During their review, our compensation committee and Radford considered that, since they had evaluated our peer group in November 2016, our market capitalization meaningfully declined, and we experienced an increase in our headcount from approximately 150 employees to over 200 employees. In addition, given that we continued to advance our product candidates through clinical trials in 2017 and filed an Investigational New Drug Application, or IND, for FPA150, our compensation committee and Radford determined that we should consider pre-commercial organizations for inclusion in our peer group as well as early- and late-stage companies while continuing to emphasize companies engaged in developing oncology therapeutics. As a result, as of August 2017, a number of companies that had comprised our peer group no longer met our market capitalization or headcount criteria. Radford noted that due to the generally greater volatility in the market capitalization of biotechnology companies of our size, turnover in our peer group year-over-year is not unexpected and that revising our peer group in response to these changes would better ensure the continued competitive positioning of our compensation programs. Based on the factors listed above and in consultation with Radford and the company's management, in August 2017, our compensation committee modified our peer group to include companies with a market capitalization and headcount more similar to ours and selected the companies listed below as our executive compensation peers. Our compensation committee used this peer group, or our 2018 Peer Group, to make executive compensation decisions following August 2017.

2018 Peer Group

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| <ul style="list-style-type: none">• Acceleron Pharma Inc.• Achaogen, Inc.*• Achillion Pharmaceuticals, Inc.• Aduro Biotech, Inc.• Agenus Inc.• Agios Pharmaceuticals, Inc.• Alder BioPharmaceuticals, Inc. | <ul style="list-style-type: none">• Array BioPharma Inc.• CytomX Therapeutics, Inc.*• Dermira, Inc.• Dynavax Technologies Corporation• Epizyme, Inc.• FibroGen, Inc.• Jounce Therapeutics, Inc.* | <ul style="list-style-type: none">• Juno Therapeutics, Inc.• MacroGenics, Inc.• Prothena Corporation plc• Radius Health, Inc.• Spark Therapeutics, Inc.• Ultragenyx Pharmaceutical Inc.• Xencor, Inc. |
|--|--|---|

* The companies marked with an asterisk were added to our previous peer group to determine our 2018 Peer Group. The following companies were removed from our previous peer group to determine our 2018 Peer Group for the reasons described above: bluebird bio, Inc., Cemptra, Inc., Kite Pharma, Inc., Merrimack Pharmaceuticals, Inc., Ophthotech Corporation, and Portola Pharmaceuticals, Inc.

Table of Contents

In August 2018, our compensation committee worked with Radford to re-evaluate our peer group. During their review, our compensation committee and Radford considered that, since they had evaluated our peer group in August 2017, our market capitalization meaningfully declined. As a result, as of August 2018, a number of companies that had comprised our 2018 Peer Group no longer met our market capitalization criteria. In addition, a number of companies that comprised our 2018 Peer Group received approval for one or more product candidates in 2018 and, as commercial entities, no longer met the criteria for being in a similar stage of development as us. Finally, given that we became publicly traded in 2013, our compensation committee and Radford determined that it was no longer necessary to focus our peer group on companies that had become publicly traded within the past five years. Based on the factors listed above and in consultation with Radford and management, in August 2018, our compensation committee modified our peer group to include pre-commercial companies with a market capitalization more similar to ours and selected the companies listed below as our executive compensation peers. Our compensation committee used this peer group, or our 2019 Peer Group, to make executive compensation decisions following August 2018 and is continuing to use our 2019 Peer Group to make executive compensation decisions in 2019.

2019 Peer Group

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|--|---|---|
| <ul style="list-style-type: none">• Acceleron Pharma Inc.• Achillion Pharmaceuticals, Inc.• Aduro Biotech, Inc.• Agenus Inc.• Alder BioPharmaceuticals, Inc.• Atara Biotherapeutics, Inc.*• Audentes Therapeutics, Inc.* | <ul style="list-style-type: none">• CytomX Therapeutics, Inc.• Denali Therapeutics Inc.*• Dynavax Technologies Corporation• Epizyme, Inc.• Fate Therapeutics, Inc.*• GlycoMimetics, Inc.*• ImmunoGen, Inc.* | <ul style="list-style-type: none">• Inovio Pharmaceuticals, Inc.*• Iovance Biotherapeutics, Inc.*• Jounce Therapeutics, Inc.• Kura Oncology, Inc.*• MacroGenics, Inc.• Xencor, Inc.• ZIOPHARM Oncology, Inc.* |
|--|---|---|

* The companies marked with an asterisk were added to our 2018 Peer Group to determine our 2019 Peer Group. The following companies were removed from our 2018 Peer Group to determine our 2019 Peer Group for the reasons described above: Achaogen, Inc., Agios Pharmaceuticals, Inc., Array BioPharma Inc., Dermira Inc., FibroGen, Inc., Juno Therapeutics, Inc., Prothena Corporation plc, Radius Health, Inc., Spark Therapeutics, Inc., and Ultragenyx Pharmaceutical Inc.

In addition to reviewing the executive compensation programs and practices of our peer group, because we compete for executive talent with many companies throughout the biopharmaceutical and biotechnology industries, our compensation committee also reviews and considers the executive compensation practices of companies in the broader biopharmaceutical and biotechnology sector as reported by Radford through industry surveys and proxy analyses.

Executive Compensation Elements

The primary elements of our executive compensation program for 2018 were:

- base salary;
- annual performance-based cash incentives;
- long-term equity incentive awards; and
- severance and change in control benefits.

In addition to these primary elements of executive compensation, we also offer our executive officers broad-based health and welfare benefits and 401(k) plan benefits consistent with the benefits we provide to our other full-time, salaried employees.

[Table of Contents](#)

Base Salary

The purpose of base salary compensation is to provide each executive with a competitive level of fixed cash compensation that is paid regularly throughout the year. The amount of base salary we pay each executive is determined by our compensation committee primarily based upon the range of salaries for similar positions at peer companies and takes into consideration the executive officer's experience, knowledge, skills, education, performance and contributions to the company. Base salary is the only element of compensation that is fixed; the remainder and majority of each executive officer's potential compensation is composed of variable compensation that is designed to incentivize shorter-term (annual) or longer-term performance of the company.

In assessing what the market would pay as base salary for a given executive officer position, our compensation committee relies on compensation information from our executive compensation peer group as well as compensation benchmark surveys we purchase (see the section titled "Peer Group Selection and Benchmarking" above). Our compensation committee currently targets the 50th percentile of market for executive officer base salary compensation. An individual executive officer's base salary, however, may vary from the 50th percentile peer group-level for the officer's position based on the officer's experience, knowledge, skills, education, performance and contributions to the company. For example, an executive officer that has extensive experience and greater knowledge and skills for the relevant position or has significantly contributed to our performance may have a base salary that is significantly greater than the 50th percentile level of our executive compensation peer group for a comparable position. Alternatively, an executive officer that is new to his or her role and is developing experience, knowledge and skills for the position may have a base salary that is at or closer to the 25th percentile level of our executive compensation peer group for a comparable position. We do not provide any automatic base salary increases to our executive officers.

Our compensation committee, with input from our Chief Executive Officer, reviews and evaluates each executive officer's base salary during the first quarter of each year. In connection with this review and evaluation, our compensation committee may adjust an executive officer's base salary, if appropriate, based on the officer's individual performance and contributions during the preceding year, changes or expected changes in the scope of the officer's responsibilities, including as a result of a promotion, changes in the base salary range of compensation at our peer group companies, the growth of or changes in our operations and the expected ease or difficulty of replacing the executive with a well-qualified replacement. Our compensation committee also takes into consideration general compensation trends within the biotechnology and biopharmaceutical industries.

2018 Annual Base Salaries

In June 2017, Lewis T. Williams, who then served as our President, Chief Executive Officer and Chairman of the Board, notified the Board that he planned to transition in 2018 from his position as our President, Chief Executive Officer and Chairman of the Board to Executive Chairman. Following Dr. Williams' notice of his planned transition, the Board formed a CEO search committee to commence a comprehensive search for a candidate to replace Dr. Williams as our President and Chief Executive Officer and appointed Drs. Gujrathi and Jensen and Messrs. Berger and McDade as its members. The CEO search committee engaged a third-party executive search firm to assist it in identifying and evaluating potential external candidates and also evaluated potential internal candidates. Following extensive evaluations of a number of highly-qualified candidates, on October 20, 2017, the Board appointed Aron M. Knickerbocker to the position of President and Chief Executive Officer, effective January 1, 2018.

In connection with his appointment, our compensation committee evaluated Mr. Knickerbocker's annual base salary in comparison to peer data for the chief executive officer position as well as in comparison to other executive officers of the company, taking into consideration Mr. Knickerbocker's experience, knowledge, skills, education, performance and contributions to the company, and approved, effective January 1, 2018, an increase in his annual base salary from \$435,000 to \$500,000, a 14.9% increase, which was at the 25th percentile for the chief executive officer position, and an increase in his annual target bonus from 45% to 50% of his annual base salary, which was at the 25th percentile for the chief executive officers of our peers.

[Table of Contents](#)

In February 2018, our compensation committee reviewed and evaluated the base salaries of our other executive officers and approved the annual base salary for each of our named executive officers shown in the below table.

<u>Executive Officer</u>	<u>2017 Annual Base Salary</u>	<u>2018 Annual Base Salary</u>	<u>% Increase</u>
Marc L. Belsky	\$ 381,500	\$ 389,776	2.2%
Francis W. Sarena	\$ 435,000	\$ 451,494	3.8%
Helen Collins, M.D.	\$ 410,000	\$ 440,000	7.3%

The compensation committee reviewed the base salary that it had previously approved for Mr. Knickerbocker in connection with Mr. Knickerbocker's appointment to the position of President and Chief Executive Officer, as described above, and determined that such amount was appropriate for Mr. Knickerbocker's 2018 base salary.

In April 2018, Mr. Belsky resigned as our Senior Vice President and Chief Financial Officer. Following his resignation, we entered into a consulting agreement with Mr. Belsky, pursuant to which Mr. Belsky would provide up to 25 hours of consulting services to the company at a rate of \$500 per hour of services. We paid Mr. Belsky an aggregate of \$4,750 for services Mr. Belsky provided in 2018 under this consulting agreement.

In April 2018, following Mr. Belsky's resignation as our Senior Vice President and Chief Financial Officer, we appointed Linda Rubinstein, a partner at FLG Partners, to serve as our Interim Chief Financial Officer as we conducted our search for a new Chief Financial Officer to replace Mr. Belsky. We retained Ms. Rubinstein as our Interim Chief Financial Officer pursuant to a consulting agreement with FLG Partners, under which we agreed to pay FLG Partners at a rate of \$400 per hour for Ms. Rubinstein's services. We paid an aggregate of \$530,171 for services Ms. Rubinstein provided in 2018 under this consulting agreement. Neither Ms. Rubinstein nor FLG Partners were eligible for any additional compensation for Ms. Rubinstein's services aside from such amount.

In May 2018, we promoted Bryan Irving from Senior Vice President, Research to Executive Vice President and Chief Scientific Officer. In connection with his promotion, our compensation committee evaluated Dr. Irving's annual base salary in light of peer data for the chief scientific officer position as well as the annual base salaries of other executive officers of the company, taking into consideration Dr. Irving's experience, knowledge, skills, education, performance and contributions to the company, and approved an increase in his annual base salary from \$364,748 to \$400,000, a 9.7% increase, which was between the 25th and 50th percentile for the chief scientific officer position of our peers, and an increase in his annual target bonus from 35% to 40% of his annual base salary, which was at the 50th percentile for the chief scientific officer position of our peers.

In November 2018, we appointed David Smith as our Executive Vice President and Chief Financial Officer. In determining Mr. Smith's annual base salary, our compensation committee evaluated peer data for the chief financial officer position as well as the annual base salaries of other executive officers of the company, taking into consideration Mr. Smith's experience, knowledge, skills and education. After considering the foregoing, our compensation committee approved an annual base salary for Mr. Smith of \$430,000, which was at the 75th percentile for the chief financial officer position of our peers, and an annual target bonus of 40% of his annual base salary, which was at the 50th percentile for the chief financial officer positions of our peers.

[Table of Contents](#)

2019 Annual Base Salaries

In February 2019, our compensation committee reviewed and evaluated the base salaries of our executive officers and approved the annual base salaries for the named executive officers shown in the table below.

Executive Officer	2018 Annual Base Salary	2019 Annual Base Salary	% Increase
Aron M. Knickerbocker	\$ 500,000	\$ 515,000	3.0%
David V. Smith	\$ 430,000	\$ 430,000	0.0%
Bryan Irving, Ph.D.	\$ 400,000	\$ 412,800	3.2%
Helen Collins, M.D.	\$ 440,000	\$ 455,840	3.6%
Francis W. Sarena	\$ 451,494	\$ 451,494	0.0%

The compensation committee reviewed the base salary that it had previously approved for Mr. Smith in connection with his appointment in November 2018 to the position of Executive Vice President and Chief Financial Officer, as described above, and determined that such base salary continued to be appropriate for Mr. Smith's 2019 base salary. In addition, although Mr. Sarena's performance largely met or exceeded expectations, the compensation committee determined that it was appropriate and prudent to not increase his annual base salary for 2019 because his annual base salary is meaningfully above the 75th percentile of the annual base salary for comparable positions in our current peer group.

Annual Performance-Based Cash Compensation

The purpose of our annual cash incentive program is to provide short-term variable cash compensation to incentivize and reward our executive officers to achieve or exceed our annual corporate goals as well as each officer's annual personal goals. This element of compensation reinforces our pay-for-performance philosophy and incentivizes shorter-term (annual) performance. Each executive officer is eligible for a target bonus determined as a percentage of his or her annual base salary. Our compensation committee determines these target bonus percentages for each executive officer position primarily based on the range of target bonus percentages for similar positions at peer companies. Our compensation committee periodically reviews and evaluates each executive officer's target bonus percentage. Because target bonus percentages by position tend not to be as dynamic as base salary compensation, changes to an executive officer's target bonus percentage tend to occur less frequently than changes in base salary, and changes that are made to an officer's target bonus percentage are often a result of changes to the executive officer's position, including as a result of a promotion.

In August 2017, our Board adopted an Annual Bonus Plan, or the Bonus Plan, which the Board subsequently amended effective January 1, 2018. The purpose of the Bonus Plan is to govern the determination and payment of annual bonus amounts to certain of the company's employees, including our executive officers. Under the Bonus Plan, if the company achieves at least 50% of its corporate goals for a Bonus Plan year, each eligible employee is eligible to receive an annual bonus based on a bonus target established by the company for such employee, with the bonus target for each executive officer established by the compensation committee.

Table of Contents

In accordance with the Bonus Plan, for annual incentive bonus determinations, we vary the weighting of personal and corporate goal performance by level within the company, with greater emphasis placed on corporate performance for executive officers and a greater emphasis on personal performance for non-executive officer employees of the company. The weighting varies even among our executive officers, with greater weight attributed to corporate goal performance for more senior executive officers. We believe this better aligns our executive officers' performance with the company as a whole while still incentivizing personal performance, which is generally more aligned with the performance of the functional area that each executive officer leads. In addition, our executives have a greater opportunity to significantly impact our corporate goal performance given their positions and responsibilities. The target bonus percent and weighting for each of our named executive officers for 2018 is shown in the table below.

<u>Executive Officer</u>	<u>Total Target Bonus (%)</u>	<u>Corporate Goal Weighting</u>	<u>Personal Goal Weighting</u>
Aron M. Knickerbocker	50%	100%	0%
David V. Smith	40%	80%	20%
Bryan Irving, Ph.D.	38.1%(1)	80%	20%
Helen Collins, M.D.	40%	70%	30%
Francis W. Sarena	45%	80%	20%

- (1) Dr. Irving's target bonus was prorated based on an increase in his annual base salary from \$364,748 to \$400,000 and an increase in his annual target bonus from 35% to 40%, both of which became effective May 15, 2018.

Each component of an employee's bonus target is subject to a multiplier for each Bonus Plan year. The multiplier for corporate goal achievement is based on the company's overall achievement of its corporate goals, among other considerations deemed relevant by the compensation committee, and may be up to a maximum of 175% of each employee's bonus target with respect to corporate goals. The multiplier for personal goal achievement is based on each employee's achievement of his or her personal goals, among other considerations deemed relevant by management, or with respect to the executive officers, by the compensation committee, and may be up to a maximum of 175% of the respective employee's bonus target with respect to personal goals.

Our 2018 corporate goals were as follows:

- generate clinical data and decide whether to advance the clinical development of cabiralizumab in diffuse pigmented villonodular synovitis, or PVNS, towards a pivotal trial in 2019;
- complete analysis of certain data from our Phase 1a/1b clinical trial evaluating the combination of cabiralizumab and *Opdivo* for the treatment of various cancers to support BMS's development efforts;
- submit to BMS a protocol synopsis for clinical development of cabiralizumab in certain additional indications;
- advance our clinical development of bemarituzumab to be on track to timely complete enrollment in our FIGHT trial, including by:
 - completing enrollment of the Phase 1 safety lead-in for the FIGHT trial and identifying a recommended dose for the Phase 3 FIGHT trial;
 - enrolling the first patient in the Phase 3 FIGHT trial and enrolling the first patient in China by the end of 2018;
 - completing enrollment of the Phase 1 clinical trial of bemarituzumab monotherapy in Japan in unselected patients with gastric or GEJ cancer to generate the data necessary to enable enrollment of Japanese patients in the FIGHT trial in 2019;
- decide whether to advance the clinical development of bemarituzumab in additional indications or lines of therapy;
- enroll the first patient in our Phase 1a/1b clinical trial evaluating FPA150 as a potential therapy in patients with advanced solid tumors;

[Table of Contents](#)

- complete validation of a lab-developed immunohistochemistry assay for B7-H4 to enable the selection of B7-H4 overexpressing patients in the Phase 1a/1b clinical trial of FPA150;
- develop a combination strategy for FPA150 to enable patient enrollment in a combination trial or cohort in 2019;
- select indications and file an IND or its foreign equivalent for FPT155;
- enroll the first patient in our Phase 1a/1b clinical trial evaluating FPT155 in patients with solid tumors;
- advance our preclinical pipeline to have a certain number of programs on track for IND filings;
- advance our research program to initiate a certain number of therapeutic antibody campaigns (or fusion protein equivalents) in 2018;
- implement a new discovery screen in immuno-oncology and create a new screening library with certain characteristics;
- create a centralized database and tissue repository for biomarker analysis;
- develop a strategic and financial plan and vision for the company;
- increase our corporate brand and profile;
- achieve certain business development objectives; and
- preserve and enhance our company culture as we grow.

These goals were intended to be challenging and rigorous. In January 2019, our compensation committee reviewed and evaluated our performance against our 2018 corporate goals and the performance of each executive officer's 2018 personal goals. Our compensation committee determined that we had largely achieved each of our corporate goals in 2018, except in certain instances in which we did not meet our goals as originally anticipated or surpassed our goals, including as described below.

- We initially enrolled and treated 31 patients in our Phase 2 clinical trial of cabiralizumab monotherapy in diffuse PVNS with dosing once every two weeks. Although we observed efficacy, many of these patients did not tolerate this dosing schedule. We amended the Phase 2 trial to add a second cohort to test a less frequent and more flexible dosing regimen in an effort to improve tolerability and optimize the therapeutic index of cabiralizumab in this chronic, non-fatal disease. Although we observed efficacy in this second cohort, the frequency of dose interruptions and discontinuations suggested that the revised dosing schedule was unlikely to be optimal for a pivotal trial in PVNS. Accordingly, we suspended enrollment in the trial and decided not to advance cabiralizumab into a pivotal trial in PVNS in 2019.
- We enrolled our first patient in the Phase 3 FIGHT trial of bemarituzumab in China ahead of schedule and, although our early site initiation efforts in the FIGHT trial were a bit slower than anticipated, those efforts accelerated through the end of the year.
- We made progress in our efforts to increase our corporate brand and profile, including through media placements, increased social media efforts and outreach, revamping our website and positive public mentions by our collaborators.
- While we engaged in business development discussions with various potential partners throughout 2018, we decided not to execute any significant transactions in order to focus our resources in ways we believed would better allow us to advance our product pipeline for the longer-term benefit of our stockholders.
- Based on the results of a 2017 company-wide employee engagement survey, we implemented various initiatives to improve employee engagement and enhance our corporate culture.

Table of Contents

Based on a consideration of our performance against our 2018 corporate goals and additional factors, our compensation committee approved a corporate goal multiplier of 90% for our 2018 Bonus Plan.

In accordance with our Bonus Plan, the annual cash incentive bonus for each executive officer, except for Mr. Knickerbocker, was also subject to a personal goal multiplier based on such executive officer's achievement of his or her personal goals, among other considerations deemed relevant by our compensation committee. Based on each executive officer's individual performance and respective contributions to the company in 2018, our compensation committee approved personal goal multipliers of 100%, 110% and 98%, respectively, for Drs. Irving and Collins and Mr. Sarena. Since Mr. Smith joined the company in November 2018, he was not eligible for a cash incentive bonus for his 2018 performance.

Taking into consideration the individual performance of our named executive officers and applying the corporate goal multiplier of 90%, our compensation committee approved the 2018 cash incentive payments to our named executive officers shown in the table below.

Executive Officer	2018 Target Bonus		2018 Actual Bonus	
	% of Base Salary	(\$)	(\$)	% of Target Bonus
Aron M. Knickerbocker	50%	\$250,000	\$225,000	90.0%
Bryan Irving, Ph.D.	38.1%(1)	\$147,460	\$135,580	91.9%
Helen Collins, M.D.	40%	\$176,000	\$168,960	96.0%
Francis W. Sarena	45%	\$203,172	\$186,110	91.6%

(1) Dr. Irving's target bonus was prorated based on an increase in his annual base salary from \$364,748 to \$400,000 and an increase in his annual target bonus from 35% to 40%, both of which became effective May 15, 2018.

Long-Term Incentive Compensation

Long-term incentive compensation is generally the largest portion of each executive's overall compensation and is variable and at-risk. Because the drug development process is lengthy, generally taking many years and requiring long-term investments that have a substantial risk of failure, we believe it is appropriate that this element of compensation represents the largest potential portion of each executive's overall compensation to focus our executive officers on long-term success. This element of compensation is comprised of equity awards that we grant in connection with the start of each executive officer's employment and annual grants of long-term incentive equity awards. These equity awards generally vest over several years to focus our executives on the company's success over a multi-year period and promote the retention of our executive officers.

We also design our long-term equity awards to remain competitive in the recruitment and retention of executives and other employees. We generally target our annual awards of long-term incentive compensation at the 50th percentile of our peer group. In January 2016, in response to an increase in demand in 2014 and 2015 for highly qualified clinical, scientific, technical and management personnel, in particular those with immuno-oncology experience, our compensation committee believed it was appropriate to begin to target our long-term incentive compensation to deliver value at the 75th percentile of our peer group. In January 2018, however, our compensation committee conducted its annual evaluation of our executive compensation program and determined that, although the demand for highly qualified clinical, scientific, technical and management personnel remained high, it was prudent and appropriate to again begin targeting long-term incentive compensation at the 50th percentile of our peer group. Our compensation committee believes this change will still allow us to continue to attract and retain key talent and execute our strategic objectives while allowing us to sustain our long-term growth. In January 2019, our compensation committee conducted its annual evaluation of our executive compensation program and determined that, because our stock price had declined over the course of 2018, it was prudent and appropriate to lower our long-term incentive compensation target to the 40th percentile in order to better manage our equity usage as we deliver long-term incentive compensation in the form of stock options and shares of restricted stock. Like short-term incentive compensation, no executive is guaranteed to receive any equity awards or awards of a certain value.

Table of Contents

Historically, we have used options to purchase shares of our common stock as the primary equity award instrument for long-term incentive compensation. This practice is consistent with the long-term incentive compensation practices of our peer group. We grant options with an exercise price equal to the fair market value of our common stock on the date of grant and generally provide that the option will vest over a four-year period. We believe these features provide an appropriate long-term incentive and reward the option holder only to the extent that our stock price increases and stockholder value increases.

As with the other elements of compensation, our compensation committee approves the amount and composition of long-term incentive compensation for our executive officers. In evaluating the target size of equity grant awards for executive officers, our compensation committee takes into consideration market and peer group data regarding long-term incentive compensation to ensure our grants are competitive with the target to deliver value at the 50th percentile. We balance this with a consideration of the aggregate number of share-based awards we expect to grant during the calendar year as compared to the total number of shares outstanding, or our burn rate, and the number of share-based incentive awards outstanding as compared to the total number of shares outstanding, or our overhang. Our compensation committee also takes into consideration each executive officer's performance and contributions to the company, the recommendations of our Chief Executive Officer (except with respect to his own long-term incentive compensation) and the amount of the executive officer's owned, vested and unvested equity holdings.

In 2016, we began to deliver a portion of the annual long-term incentive compensation we award in the form of restricted stock awards. For our executives, our compensation committee determined it was appropriate to target approximately 75% of the value of long-term incentive compensation in the form of stock options and the remaining approximately 25% of the value in the form of restricted stock awards. We believe that restricted stock awards help us to retain our executive officers and reward them for long-term stock price appreciation while at the same time providing some value even if the market price of our common stock declines. After considering the factors described above, in February 2018, our compensation committee approved annual grants to our named executive officers of the stock options and restricted stock awards shown in the table below.

Executive Officer	Options to Purchase Common Stock		Restricted Stock Awards	
	(number of shares)	(grant date fair value)(1)	(number of shares)	(grant date fair value)(1)
Aron M. Knickerbocker	90,000	\$1,073,484	15,000	\$ 280,350
Bryan Irving, Ph.D.	35,000	\$ 417,466	6,000	\$ 112,140
Helen Collins, M.D.	50,000	\$ 596,380	7,000	\$ 130,830
Francis W. Sarena	45,000	\$ 536,742	7,000	\$ 130,830
Marc L. Belsky	18,000	\$ 214,697	3,000	\$ 56,070

(1) For more information on how we determined the grant date fair value of these equity awards, see footnote 2 of the table titled "Grants of Plan-Based Awards" below.

The stock option awards set forth in the table above vest and become exercisable at the rate of 1/48 of the total number of shares subject to the applicable option each month after the February 26, 2018 grant date, subject to the executive officer's continuous service to the company through each vest date. The restricted stock awards set forth in the table above vested with respect to 1/3 of the shares subject to the applicable award on February 26, 2019 and will vest with respect to 1/3 of the remaining shares subject to the applicable award on each of February 26, 2020 and 2021, subject to the executive officer's continuous service to the company through each vest date.

[Table of Contents](#)

In May 2018, we promoted Dr. Irving from Senior Vice President, Research to Executive Vice President and Chief Scientific Officer. In connection with his promotion, our compensation committee approved the grant to Dr. Irving of an option to purchase 22,500 shares of our common stock and 3,750 shares of restricted common stock. Dr. Irving's stock option award vests with respect to 1/48 of the shares subject to the option each month following his May 15, 2018 grant date, subject to his continuous service to the company through each vest date. Dr. Irving's restricted stock award will vest with respect to 1/3 of the shares subject to the award on each of May 15, 2019, 2020 and 2021, subject to his continuous service to the company through each vest date.

In November 2018, we appointed David Smith as our Executive Vice President and Chief Financial Officer. In connection with his appointment, our compensation committee approved new hire grants to Mr. Smith of an option to purchase 185,000 shares of our common stock and 40,000 shares of restricted stock. Mr. Smith's stock option award will vest with respect to 1/4 of the shares subject to the option on November 26, 2019 and 1/48 of the shares subject to the option each month thereafter, subject to his continuous service to the company through each vest date. Mr. Smith's restricted stock award will vest with respect to 1/3 of the shares subject to the award on each of November 26, 2019, 2020 and 2021, subject to his continuous service to the company through each vest date.

Severance and Change in Control Benefits

We believe that offering reasonable and competitive severance benefits as part of an overall compensation package is necessary to effectively compete for and attract and retain executive talent. We have entered into executive severance benefits agreements, or severance agreements, with each of our named executive officers, under which we have agreed to provide our named executive officers with severance benefits after a termination of employment in certain circumstances, including in connection with a change in control. The change in control benefits under our severance agreements are intended to focus our executive officers on maximizing stockholder value through any actual or potential change in control transaction, including when such a transaction may result in the elimination of an executive officer's position or other adverse changes in the officer's job conditions, responsibility or authority. This better aligns the interests of our executive officers with our stockholders. Without these benefits, executive officers may be inclined to terminate their employment prior to the closing of a change in control. Any such departures could jeopardize the consummation of the transaction or our interests if the transaction does not close and we remain independent. Our compensation committee believes that these severance benefits promote stability and continuity, serve to enhance stockholder value in actual or threatened change in control transactions and align our executive officers' interests with those of our stockholders in change in control transactions.

These severance agreements provide that, in the event we terminate the executive's employment without "cause," as defined in the severance agreements, at any time or we terminate the executive's employment without cause or the executive resigns for "good reason," as defined in the severance agreements, within three months prior to or 12 months following a change in control of the company, the executive officer will be entitled to receive the severance benefits described below, subject to executing a general release of claims in favor of the company and complying with the provisions of his or her severance agreement, as described below.

[Table of Contents](#)

In the event of a termination of employment that triggers severance benefits under a named executive officer's severance agreement, the named executive officer would be entitled to: (i) severance payments following termination equal to the number of months of base salary and pro-rata annual bonus (calculated based on the higher of (x) the named executive officer's target annual bonus at the time of termination or (y) the average of the actual cash bonus amounts paid to such named executive officer for the three years preceding the date of termination) set forth in the table below, less applicable withholdings; (ii) acceleration of the vesting of all unvested shares subject to outstanding options to purchase our common stock held by the named executive officer, as set forth in the table below; (iii) lapse of our reacquisition or repurchase rights with respect to certain unvested shares of common stock issued or issuable pursuant to any other stock award granted to the named executive officer pursuant to an equity incentive plan, as set forth in the table below; and (iv) if elected by the named executive officer, payment or reimbursement of COBRA premiums through the earlier of the number of months after termination set forth in the table below or the date the named executive officer and his or her covered dependents, if any, become eligible for group health insurance through another employer.

	Cash Severance and COBRA Premium Reimbursement		Acceleration of Vesting of Equity Awards	
	No Change in Control	Change in Control Related	No Change in Control ⁽¹⁾	Change in Control Related
Chief Executive Officer	12 months	24 months	50%	100%
Other Named Executive Officers	9 months	18 months	50%	100%

(1) There will be no acceleration of vesting or lapse of our reacquisition rights with respect to retention restricted stock awards in the event of termination of employment in the absence of a change in control.

In addition, the severance agreements provide that in the event that the severance and other benefits provided for or otherwise payable to the executive constitute "parachute payments" within the meaning of Section 280G of the Code and are subject to the excise tax imposed by Section 4999 of the Code, then we will pay (i) the executive's severance benefits under the severance agreement in full if the quotient obtained by dividing (a) the excess of (1) the full payment, over (2) the largest payment possible without the imposition of the excise tax, or the reduced payment, by (b) the reduced payment, is greater than 10%, or (ii) the reduced payment, if such quotient is less than or equal to 10%.

Each severance agreement requires that the executive officer execute a general release of claims in favor of us to mitigate any potential liability or dispute or the initiation of any litigation with the departing executive officer and also require the departing executive officer to comply with, among other things, the confidentiality, non-compete and non-solicit provisions of his or her severance agreement following employment termination.

The table titled "Potential Payments Upon Termination or Change in Control" below sets forth estimates of the value of the severance payments and benefits that would be made or provided to our named executive officers pursuant to the severance agreements under specified termination circumstances.

[Table of Contents](#)

Other Benefits

All our named executive officers, except for Ms. Rubinstein and Mr. Belsky, are eligible to receive our standard employee benefits, including our 401(k) plan, medical, dental, vision, short- and long-term disability, group life insurance and our ESPP (as defined below in the section of this proxy statement titled “2013 Employee Stock Purchase Plan”), in each case on the same basis as our other employees, including the matching contributions provided under our 401(k) plan. Our 401(k) plan provides that each participant may contribute up to 100% of his or her pre-tax compensation, up to a statutory limit of \$18,500 in 2018 and \$19,000 in 2019. We provide a company match equal to 50% of the amount contributed by an employee, up to a maximum amount of \$6,000 per year, and pay all company matches in cash. Participants who are at least 50 years old can also make “catch-up” contributions, which in 2018 and 2019 may be up to an additional \$6,000 above the statutory limit. Our 401(k) plan also permits us to make discretionary contributions, subject to established limits and a vesting schedule. To date, we have not made any discretionary contributions to the plan on behalf of participating employees. Our compensation committee periodically reviews the levels of benefits provided to executive officers to ensure they remain reasonable and consistent with its compensation philosophy.

Given that Ms. Rubinstein was not an employee of the company, Ms. Rubinstein was not eligible to receive any benefits that we provide to our employees, including the benefits described above. Mr. Belsky was eligible to receive the benefits described above during his employment by the company.

Perquisites

We do not as a general practice provide perquisites or other personal benefits to our executive officers that differ materially from those available to employees generally. We have in the past provided certain executive officers with relocation and mortgage assistance benefits that we negotiated as part of these executives’ new hire offer packages.

Employment Arrangements

We entered into employment offer letter agreements with each of our named executive officers, except for Ms. Rubinstein. Each of the offer letters with our named executive officers provides for “at will” employment and sets forth the initial compensation arrangements for the executive officer, including with respect to the executive officer’s initial base salary, annual target cash bonus opportunity (each of which have been superseded by the salaries and target cash bonus opportunities disclosed in more detail in this Compensation Discussion and Analysis) and new hire equity awards (each of which is disclosed in more detail in the table below titled “Outstanding Equity Awards at Fiscal Year-End,” to the extent it was not exercised by the applicable executive officer (with respect to option awards) or vested (with respect to restricted stock awards) as of December 31, 2018). The terms and conditions of each offer letter agreement were negotiated by our then-current Chief Executive Officer and were approved by either our Board or compensation committee. The material compensation-related actions arising from the offer letter agreements with our named executive officers were performed prior to 2018, except that our offer letter agreements with Mr. Knickerbocker, with respect to his position as President and Chief Executive Officer, and Mr. Smith, with respect to his position as Executive Vice President and Chief Financial Officer, contain provisions with respect to which actions were taken in 2018 or could be taken in the future, which provisions are summarized below.

Mr. Knickerbocker’s Offer Letter Agreement

In October 2017, our Board appointed Mr. Knickerbocker to succeed Dr. Williams as our President and Chief Executive Officer, effective January 1, 2018. In connection with his appointment, we entered into an offer letter with Mr. Knickerbocker in October 2017, pursuant to which we agreed to increase Mr. Knickerbocker’s annual base salary to \$500,000 and set his target annual cash bonus opportunity at 50% of his annual base salary, effective January 1, 2018.

[Table of Contents](#)

In addition, our compensation committee granted to Mr. Knickerbocker an option to purchase 150,000 shares of our common stock. The option began to vest with respect to 1/48 of the shares subject to the option on November 20, 2017 and vest with respect to 1/48 of the shares subject to the option monthly thereafter, subject to Mr. Knickerbocker's continued service to the company through each vest date.

Mr. Smith's Offer Letter Agreement

In November 2018, we appointed Mr. Smith as our Executive Vice President and Chief Financial Officer, effective November 26, 2018. In connection with his appointment, we entered into an offer letter with Mr. Smith, pursuant to which we agreed to pay Mr. Smith an initial annual base salary of \$430,000 and set his target annual cash bonus opportunity at 40% of his annual base salary.

In addition, our compensation committee granted to Mr. Smith of an option to purchase 185,000 shares of our common stock and 40,000 shares of restricted stock. Mr. Smith's stock option award vests with respect to 1/4 of the shares subject to the option on November 26, 2019 and 1/48 of the shares subject to the option each month thereafter, subject to his continuous service to the company through each vest date. Mr. Smith's restricted stock award will vest with respect to 1/3 of the shares subject to the award on each of November 26, 2019, 2020 and 2021, subject to his continuous service to the company through each vest date.

Consulting Agreement with Marc Belsky

In April 2018, following his resignation as our Senior Vice President and Chief Financial Officer, we entered into a consulting agreement with Mr. Belsky, pursuant to which Mr. Belsky agreed to provide up to 25 hours of consulting services to the company at a rate of \$500 per hour of services. We paid an aggregate amount of \$4,750 to Mr. Belsky for services he provided in 2018. The material compensation-related actions arising from the consulting agreement were taken in 2018.

Consulting Agreement with FLG Partners

In April 2018, we appointed Ms. Rubinstein, a partner at FLG Partners, as our Interim Chief Financial Officer as we conducted our search for a new Chief Financial Officer. We retained Ms. Rubinstein as our Interim Chief Financial Officer in April 2018 pursuant to a consulting agreement with FLG Partners, under which we agreed to pay FLG Partners at a rate of \$400 per hour for Ms. Rubinstein's services. We paid an aggregate amount of \$530,171 to FLG Partners for services Ms. Rubinstein provided in 2018. The material compensation-related actions arising from the consulting agreement were taken in 2018 and prior to the expiration of the consulting agreement in April 2019.

No Tax Gross-Ups

We do not provide any tax gross-up payments to our named executive officers.

[Table of Contents](#)

Accounting and Tax Considerations

Section 162(m). Section 162(m) of the Code generally provides that publicly traded companies may not deduct compensation paid to certain of their top executive officers to the extent that such compensation exceeds \$1 million per officer in any year. In connection with recently-enacted tax reform legislation, the exemption from the deduction limit under Section 162(m) of the Code for “performance-based compensation” has been repealed, such that compensation paid to our “covered employees” in excess of \$1 million will not be deductible unless it qualifies for transition relief applicable to certain “grandfathered” arrangements in place as of November 2, 2017. We will continue to monitor and review related guidance from the Internal Revenue Service as it becomes available. In determining the form and amount of compensation for our named executive officers, our compensation committee may continue to consider all elements of the cost of such compensation. While our compensation committee considers the deductibility of awards as one factor in determining executive compensation, our compensation committee may also look at other factors in making its decisions and retains the flexibility to award compensation that it determines to be consistent with the goals of our executive compensation program even if the compensation is not deductible by us for tax purposes.

Section 409A. Our compensation committee also takes into account whether components of our compensation program may be subject to the penalty tax associated with Section 409A of the Code and aims to structure the elements of compensation to comply with or be exempt from Section 409A to avoid such potential adverse tax consequences.

Sections 4999 and 280G. Section 4999 of the Code imposes a 20% excise tax on certain “excess parachute payments” made to “disqualified individuals.” Under Section 280G of the Code, such excess parachute payments are also nondeductible to the payer. If payments that are contingent on a change in control to a disqualified individual (which terms include our named executive officers) exceed three times the individual’s “base amount,” they constitute “excess parachute payments” with respect to any amount exceeding one times the individual’s “base amount.”

We have entered into agreements with each of our named executive officers, pursuant to which we will cap the payments to these executives if needed to avoid application of Sections 4999 and 280G, but only if the officer is better off on a net after-tax basis by at least 10%, as described in “Severance and Change in Control Benefits” above. We would not be permitted to claim a federal income tax deduction for the portion of the change of control payment that constitutes an “excess parachute payment.” Our compensation arrangements do not provide for any Section 280G excise tax gross-up payments to our executive officers.

ASC 718. In addition, we account for equity compensation paid to our employees in accordance with ASC 718, which requires us to estimate and record an expense over the service period of the award. We record cash compensation as an expense at the time the obligation is accrued. The accounting impact of our compensation programs is one of many factors that we consider in determining the size and structure of our programs.

Risk Analysis

Our management assesses and discusses with our compensation committee our compensation policies and practices for our employees as they relate to our risk management. Based on this assessment, as well as Radford’s holistic review of all company compensation programs, we do not believe that any risks arise from such policies and practices that are reasonably likely to have a material adverse effect on us in the future.

Stock Ownership Guidelines

We have adopted stock ownership guidelines that we believe will further align our executive officers' and Board members' interests with those of our stockholders. Pursuant to our stock ownership guidelines, we require that our Chief Executive Officer and each executive officer and non-employee member of our Board achieve by the later of December 2021 or five years after the date the executive officer or non-employee member of our Board is appointed, and maintain thereafter, ownership of shares of common stock or vested options to purchase shares of our common stock as set forth below:

- for our Chief Executive Officer, share and vested option ownership with a value of at least five times the Chief Executive Officer's annual base salary;
- for each executive officer other than our Chief Executive Officer, share and vested option ownership with a value of at least three times the executive officer's annual base salary; and
- for each non-employee member of our Board, share and vested option ownership with a value of at least three times the regular annual retainer for non-employee members of our Board.

Summary Compensation Table

The following table shows information regarding the compensation of our named executive officers during the fiscal years ended December 31, 2018, 2017 and 2016. To the extent that any of our named executive officers for the fiscal year ended December 31, 2018 were not named executive officers during either of the previous periods, we provided information with respect to such executive officer's compensation for only the fiscal years during which he or she was a named executive officer.

Name and Principal Position	Year	Salary (\$)	Bonus (\$)(1)	Option Awards (\$)(2)	Stock Awards (\$)(2)	Non-Equity Incentive Plan Compensation (\$)(3)	All Other Compensation (\$)(4)	Total (\$)
Aron M. Knickerbocker	2018	\$500,000	—	\$1,073,484	\$280,350	\$225,000	\$6,072	\$2,084,906
<i>President and Chief Executive Officer</i>	2017	\$433,750	\$107,500	\$5,586,258	\$809,859	\$190,860	\$6,000	\$7,134,227
	2016	\$418,333	\$155,700	\$3,182,872	\$932,500	\$215,000	\$6,000	\$4,910,405
David V. Smith(5)	2018	\$44,103	—	\$1,474,432	\$498,800	—	\$1,075	\$2,018,409
<i>Executive Vice President and Chief Financial Officer</i>	2017	—	—	—	—	—	—	—
	2016	—	—	—	—	—	—	—
Bryan Irving, Ph.D.(6)	2018	\$383,489(7)	—	\$671,379	\$178,703	\$135,580	\$6,072	\$1,375,223
<i>Executive Vice President and Chief Scientific Officer</i>	2017	—	—	—	—	—	—	—
	2016	—	—	—	—	—	—	—
Helen Collins, M.D.(8)	2018	\$435,000	—	\$596,380	\$130,830	\$168,960	\$6,036	\$1,337,206
<i>Senior Vice President and Chief Medical Officer</i>	2017	\$400,208	—	\$801,299	\$1,371,737	\$170,050	\$6,000	\$2,749,294
	2016	—	—	—	—	—	—	—
Francis W. Sarena	2018	\$448,745	—	\$536,742	\$130,830	\$186,110	\$6,072	\$1,308,499
<i>Chief Strategy Officer and Secretary</i>	2017	\$428,099	\$100,800	\$1,267,839	\$809,859	\$192,080	\$6,000	\$2,804,677
	2016	\$392,188	\$145,550	\$2,719,072	\$783,880	\$201,600	\$6,000	\$4,248,290
Marc L. Belsky(9)	2018	\$138,260(10)	—	\$214,697	\$56,070	—	\$6,000	\$415,027
<i>Former Senior Vice President and Chief Financial Officer</i>	2017	\$380,125	\$87,500	\$633,920	\$672,190	\$144,210	\$9,457(11)	\$1,927,402
	2016	\$361,667	\$92,450	\$818,436	\$218,550	\$165,000	\$6,000	\$1,662,103
Linda Rubinstein(12)	2018	\$530,171	—	—	—	—	—	\$530,171
<i>Former Interim Chief Financial Officer</i>	2017	—	—	—	—	—	—	—
	2016	—	—	—	—	—	—	—

- (1) Amounts shown for 2017 and 2016 consist of retention bonuses approved by our compensation committee. In addition, Mr. Belsky received a \$5,000 spot bonus for his 2017 services in connection with our office relocation.
- (2) Amounts reflect the grant date fair value of equity awards determined in accordance with ASC 718. For information regarding other assumptions underlying the value of equity awards, see Note 2 to our financial statements and the discussion under "Management's Discussion and Analysis of Financial Condition and Results of Operations – Critical Accounting Policies and Use of Estimates – Stock-Based Compensation" included in our Annual Report on Form 10-K for the fiscal year ended December 31, 2018. These amounts do not correspond to the actual value that our named executive officers will recognize.

Table of Contents

- (3) Consists of amounts earned under our Bonus Plan based on the achievement of company and individual performance goals and other factors deemed relevant by our compensation committee. For additional information, see the “Compensation Discussion and Analysis – Executive Compensation Elements – Annual Performance-Based Cash Compensation” section of this proxy statement.
- (4) Amount includes compensation received by certain named executive officers as a company match under our 401(k) plan.
- (5) Mr. Smith commenced employment as our Executive Vice President and Chief Financial Officer on November 26, 2018.
- (6) Dr. Irving was not a named executive officer of the company prior to 2018. Dr. Irving was promoted from his position as Senior Vice President, Research to Executive Vice President and Chief Scientific Officer effective May 15, 2018.
- (7) The amount of salary that we paid to Dr. Irving in 2018 was lower than his base salary for 2018 because Dr. Irving received an increase in his base salary in May 2018 in connection with his promotion from Senior Vice President, Research to Executive Vice President and Chief Scientific Officer.
- (8) Dr. Collins was not a named executive officer of the company prior to 2017. Dr. Collins was promoted from her position as Vice President of Clinical Development to Senior Vice President and Chief Medical Officer effective March 20, 2017.
- (9) Mr. Belsky resigned from his position as Senior Vice President and Chief Financial Officer effective April 6, 2018.
- (10) Amount includes compensation for accrued vacation time in connection with Mr. Belsky’s resignation and amounts paid to Mr. Belsky pursuant to his consulting agreement with the company. For additional information about Mr. Belsky’s consulting agreement, see the “Compensation Discussion and Analysis – Executive Compensation Elements – 2018 Annual Base Salaries” section of this proxy statement.
- (11) In connection with the spot bonus to Mr. Belsky for his 2017 services in connection with our office relocation, we paid a \$3,457 tax “gross-up” on Mr. Belsky’s behalf.
- (12) Ms. Rubinstein served as our Interim Chief Financial Officer following Mr. Belsky’s resignation on April 6, 2018 until the commencement of Mr. Smith’s employment as our Executive Vice President and Chief Financial Officer on November 26, 2018. We engaged Ms. Rubinstein pursuant to a consulting agreement that we entered into with FLG Partners, and we paid FLG Partners the amounts set forth in this table as compensation for Ms. Rubinstein’s services. For additional information, see the “Compensation Discussion and Analysis – Executive Compensation Elements – 2018 Annual Base Salaries” section of this proxy statement.

Grants of Plan-Based Awards

The following table sets forth information concerning each grant of an award made to a named executive officer during the fiscal year ended December 31, 2018 under any plan, contract, authorization or arrangement pursuant to which cash, securities, similar instruments or other property may be received.

Name	Award Type	Grant Date	Date of Compensation Committee or Board Approval	Estimated Future Payouts Under Non-Equity Incentive Plan Awards(1)		Other Stock Awards: Number of Shares of Stock or Units (#)	All Other Awards: Number of Securities Underlying Options (#)	Exercise or Base Price of Option Awards (\$/Sh)	Grant Date Fair Value of Stock and Option Awards (\$)(2)
				Target (\$)	Maximum (\$)				
Aron M. Knickerbocker	Annual Cash	—	—	250,000	437,500	—	—	—	—
	Annual RSA	2/26/2018	2/26/2018	—	—	15,000(3)	—	—	280,350
David V. Smith	Annual Option	2/26/2018	2/26/2018	—	—	—	90,000(3)	18.69	1,073,484
	Initial RSA	11/26/2018	10/24/2018	—	—	40,000(4)	—	—	498,800
Bryan Irving, Ph.D.	Initial Option	11/26/2018	10/24/2018	—	—	—	185,000(4)	12.47	1,474,432
	Annual Cash	—	—	147,460	258,055	—	—	—	—
Helen Collins, M.D.	Annual RSA	2/26/2018	2/26/2018	—	—	6,000(3)	—	—	112,140
	Annual Option	2/26/2018	2/26/2018	—	—	—	35,000(4)	18.69	417,466
	Promotion RSA	5/15/2018	5/9/2018	—	—	3,750(5)	—	—	66,563
	Promotion Option	5/15/2018	5/9/2018	—	—	—	22,500(5)	17.75	253,913
Francis W. Sarena	Annual Cash	—	—	176,000	308,000	—	—	—	—
	Annual RSA	2/26/2018	2/26/2018	—	—	7,000(3)	—	—	130,830
Marc L. Belsky	Annual Option	2/26/2018	2/26/2018	—	—	—	50,000(3)	18.69	596,380
	Annual Cash	—	—	203,172	355,552	—	—	—	—
Linda Rubinstein	Annual RSA	2/26/2018	2/26/2018	—	—	7,000(3)	—	—	130,830
	Annual Option	2/26/2018	2/26/2018	—	—	—	45,000(3)	18.69	536,742
Linda Rubinstein	Annual RSA	2/26/2018	2/26/2018	—	—	3,000(3)	—	—	56,070
	Annual Option	2/26/2018	2/26/2018	—	—	—	18,000(3)	18.69	214,697

Table of Contents

- (1) These columns set forth the target and maximum annual performance bonus amounts for each named executive officer, except for Mr. Smith, Mr. Belsky and Ms. Rubinstein, for the year ended December 31, 2018. Target bonuses were set as a percentage of each named executive officer's base salary compensation for the year ended December 31, 2018 and were 50%, 38.1%, 40%, and 45%, respectively, of 2018 base salary compensation for Mr. Knickerbocker, Dr. Irving, Dr. Collins, and Mr. Sarena. Dr. Irving's target bonus amount was prorated to account for a change in his base salary and annual target bonus over the course of 2018. Mr. Smith commenced employment with the company on November 26, 2018 and was not eligible to participate in the Bonus Plan with respect to his 2018 service. Mr. Belsky resigned from his position as Senior Vice President and Chief Financial Officer effective April 6, 2018 and was not eligible to receive a bonus under the Bonus Plan for his 2018 service. Ms. Rubinstein was engaged as our Interim Chief Financial Officer through our consulting agreement with FLG Partners and was not eligible to participate in the Bonus Plan. We do not establish thresholds or maximum annual performance bonus amounts under our Bonus Plan, except that the maximum bonus amount each employee is eligible to receive is 175% of such employee's target bonus. The amounts set forth in these columns do not represent either additional or actual compensation earned by the named executive officers for the year ended December 31, 2018. The dollar value of the actual bonus award earned for the year ended December 31, 2018 for each named executive officer, if any, is set forth in the Summary Compensation Table above. For additional information, see "Compensation Discussion and Analysis – Executive Compensation Elements – Annual Performance-Based Cash Compensation."
- (2) Amounts reflect the grant date fair value of equity awards granted in 2018 in accordance with ASC 718. For information regarding other assumptions underlying the value of equity awards, see Note 2 to our financial statements and the discussion under "Management's Discussion and Analysis of Financial Condition and Results of Operations – Critical Accounting Policies and Use of Estimates – Stock-Based Compensation," included in our Annual Report on Form 10-K for the fiscal year ended December 31, 2018. These amounts do not correspond to the actual value that the named executive officers will recognize.
- (3) On February 26, 2018, our compensation committee approved annual restricted stock awards and stock grants to our executive officers.
- (4) On October 24, 2018, our compensation committee approved a restricted stock award and option grant to Mr. Smith in connection with his commencement of employment as Executive Vice President and Chief Financial Officer.
- (5) On May 9, 2018, our compensation committee approved a restricted stock award and option grant to Dr. Irving in connection with his promotion to Executive Vice President and Chief Scientific Officer.

[Table of Contents](#)

Outstanding Equity Awards at Fiscal Year-End

The following table provides information regarding equity awards held by our named executive officers that were outstanding as of December 31, 2018.

Name	Option Awards				Stock Awards	
	Number of Securities Underlying Unexercised Options Exercisable (#)	Number of Securities Underlying Unexercised Options Unexercisable (#)(1)	Option Exercise Price (\$/Sh)	Option Expiration Date	Number of Shares or Units of Stock that Have Not Vested (#)(1)	Market Value of Shares or Units of Stock that Have Not Vested (\$)(2)
Aron M. Knickerbocker	4,186	—	8.49	1/1/2022	—	—
	11,357	—	5.54	7/15/2022	—	—
	14,735	—	7.26	7/18/2023	—	—
	33,360	—	11.14	8/21/2024	—	—
	60,816	12,500(3)	19.25	8/16/2025	—	—
	35,000	25,000(4)	43.71	8/24/2026	—	—
	28,125	21,875(5)	49.54	9/7/2026	—	—
	18,333	21,667(6)	45.38	2/6/2027	—	—
	43,750	106,250(7)	46.80	10/19/2027	—	—
	18,750	71,250(8)	18.69	2/25/2028	—	—
	—	—	—	—	3,334(9)	31,006
	—	—	—	—	3,334(9)	31,006
	—	—	—	—	6,874(10)	63,928
—	—	—	—	5,767(11)	53,633	
—	—	—	—	15,000(12)	139,500	
David V. Smith	—	185,000(13)	12.47	11/25/2028	—	—
—	—	—	—	40,000(14)	372,000	
Bryan Irving, Ph.D.	25,000	55,000(15)	34.34	8/31/2027	—	—
	7,291	27,709(8)	18.69	2/25/2028	—	—
	3,281	19,219(16)	17.75	5/14/2028	—	—
	—	—	—	—	10,000(17)	93,000
	—	—	—	—	6,000(8)	55,800
—	—	—	—	3,750(18)	34,875	
Helen Collins, M.D.	37,500	22,500(19)	37.89	6/26/2026	—	—
	4,125	4,875(6)	45.38	2/6/2027	—	—
	9,843	12,657(20)	39.21	3/19/2027	—	—
	10,416	39,584(8)	18.69	2/25/2028	—	—
	—	—	—	—	1,000(9)	9,300
	—	—	—	—	11,531(11)	107,238
	—	—	—	—	3,750(10)	34,875
	—	—	—	—	2,500(21)	23,250
—	—	—	—	834(21)	7,756	
—	—	—	—	7,000(12)	65,100	
Francis W. Sarena	4,747	—	8.49	1/1/2022	—	—
	9,142	—	5.54	7/15/2022	—	—
	12,063	—	7.26	7/18/2023	—	—
	3,209	—	10.77	11/4/2023	—	—
	25,521	—	11.14	8/21/2024	—	—
	62,500	12,500(3)	19.25	8/16/2025	—	—
	35,000	25,000(4)	43.71	8/24/2026	—	—
	19,687	15,313(5)	49.54	9/7/2026	—	—
	20,625	24,375(6)	45.38	2/6/2027	—	—
	9,375	35,625(8)	18.69	2/25/2028	—	—
	—	—	—	—	3,334(9)	31,006
	—	—	—	—	2,334(9)	21,706
	—	—	—	—	5,767(11)	53,633
	—	—	—	—	6,874(10)	63,928
—	—	—	—	7,000(12)	65,100	
Marc L. Belsky	509	—	5.54	4/6/2019(22)	—	—
	5,082	—	7.26	4/6/2019(22)	—	—
	14,486	—	11.14	4/6/2019(22)	—	—
	26,010	—	19.25	4/6/2019(22)	—	—
	11,875	—	43.71	4/6/2019(22)	—	—
	6,093	—	45.38	4/6/2019(22)	—	—
—	—	—	—	375	—	
375	—	18.69	4/6/2019(22)	—	—	
Linda Rubinstein(23)	—	—	—	—	—	—

Table of Contents

- (1) For information on vesting acceleration of the equity awards described in this table upon a named executive officer's termination of employment, see the "Compensation Discussion and Analysis – Executive Compensation Elements – Severance and Change in Control Benefits" and "Potential Payments Upon Termination or Change in Control" sections in this proxy statement.
- (2) The market value of stock awards is based on the closing market price of our common stock of \$9.30 per share on December 31, 2018.
- (3) The shares underlying this option vest over four years in equal monthly installments following the grant date of August 17, 2015.
- (4) The shares underlying this option vest over four years in equal monthly installments following the grant date of August 25, 2016.
- (5) The shares underlying this option vest over four years in equal monthly installments following the grant date of September 8, 2016.
- (6) The shares underlying this option vest over four years in equal monthly installments following the grant date of February 7, 2017.
- (7) The shares underlying this option vest over four years in equal monthly installments following the grant date of October 20, 2017.
- (8) The shares underlying this option vest over four years in equal monthly installments following the grant date of February 26, 2018.
- (9) One-third of the shares subject to this grant vested on each of September 1, 2017 and September 1, 2018, and the remainder will vest on September 1, 2019.
- (10) One-third of the shares subject to this grant vested on each of February 5, 2018 and February 5, 2019, and the remainder will vest on February 5, 2020.
- (11) These shares represent 75% of the shares subject to a retention restricted stock award granted to certain executive officers on February 7, 2017. One-third of the shares subject to this portion of the award vested on February 5, 2019 and the remainder will vest on February 5, 2020. The remaining 25% of the shares subject to this award were subject to performance conditions, which were achieved on September 28, 2018.
- (12) One-third of the shares subject to this grant vested on February 26, 2019, and the remainder will vest in equal installments on each of February 26, 2020 and 2021.
- (13) 25% of the shares underlying this option will vest on November 26, 2019, and the remainder will vest over three years thereafter in equal monthly installments.
- (14) One-third of the shares subject to this grant will vest on each of November 26, 2019, 2020 and 2021.
- (15) 25% of the shares underlying this option vested on September 1, 2018, and the remainder vests over three years thereafter in equal monthly installments.
- (16) The shares underlying this option vest over four years in equal monthly installments following the grant date of May 15, 2018.
- (17) One-third of the shares subject to this grant vested on September 1, 2018, and the remainder will vest in equal installments on each of September 1, 2019 and 2020.
- (18) One-third of the shares subject to this grant will vest on each of May 15, 2019, 2020 and 2021.
- (19) 25% of the shares underlying this option vested on June 20, 2017, and the remainder vests over three years thereafter in equal monthly installments.
- (20) The shares underlying this option vest over four years in equal monthly installments following the grant date of March 20, 2017.
- (21) One-third of the shares subject to this grant vested on each of March 20, 2018 and March 20, 2019, and the remainder will vest on March 20, 2020.
- (22) In connection with Mr. Belsky's resignation from his position as Senior Vice President and Chief Financial Officer of April 6, 2018, the company entered into an Amendment to Stock Options Agreement, pursuant to which the company extended the exercisability for Mr. Belsky's vested options until April 6, 2019.
- (23) We did not grant any equity to Ms. Rubinstein or FLG Partners in connection with our engagement of Ms. Rubinstein as our Interim Chief Financial Officer.

[Table of Contents](#)

Option Exercises and Stock Vested

The following table sets forth information concerning option exercises and stock vested for each of our named executive officers during the fiscal year ended December 31, 2018.

Name	Options Award		Stock Awards	
	Number of Shares Acquired on Exercise (#)	Value Realized on Exercise (\$)(1)	Number of Shares Acquired on Vesting (#)	Value Realized on Vesting (\$)
Aron M. Knickerbocker(2)	8,084	24,204	12,025	183,383(3)
David V. Smith	—	—	—	—
Bryan Irving, Ph.D.	—	—	5,000	70,000(4)
Helen Collins, M.D.	—	—	10,885	172,585(5)
Francis W. Sarena	—	—	11,025	169,383(6)
Marc L. Belsky	—	—	1,875	34,538(7)
Linda Rubinstein	—	—	—	—

- (1) The value realized when the stock options were exercised represents the excess of the fair market value of the shares at the time of the exercise over the exercise price of the stock options.
- (2) In addition to the information provided in this table with respect to stock options exercised and stock awards vested, in 2018, Mr. Knickerbocker transferred to his former spouse, pursuant to a domestic relations order, beneficial ownership of 1,155 shares of restricted common stock and options to purchase 6,930 shares of common stock from equity grants made to Mr. Knickerbocker in 2018. Mr. Knickerbocker did not realize a specific dollar amount upon these transfers, as such transfers were made in connection with a mutually agreed allocation of and release of claims with respect to marital property.
- (3) The value realized on vesting is based on the closing market price of our common stock of (i) \$18.42 per share on February 5, 2018 with respect to 3,436 of the stock awards, (ii) \$14.00 per share on September 1, 2018 with respect to 6,666 of the stock awards, and (iii) \$13.92 per share on September 28, 2018 with respect to 1,923 of the stock awards.
- (4) The value realized on vesting is based on the closing market price of our common stock of \$14.00 per share on September 1, 2018.
- (5) The value realized on vesting is based on the closing market price of our common stock of (i) \$18.42 per share on February 5, 2018 with respect to 1,875 of the stock awards, (ii) \$16.26 per share on March 20, 2018 with respect to 1,666 of the stock awards, (iii) \$17.38 per share on June 23, 2018 with respect to 2,500 of the stock awards, (iv) \$14.00 per share on September 1, 2018 with respect to 1,000 of the stock awards, and (v) \$13.92 per share on September 28, 2018 with respect to 3,844 of the stock awards.
- (6) The value realized on vesting is based on the closing market price of our common stock of (i) \$18.42 per share on February 5, 2018 with respect to 3,436 of the stock awards, (ii) \$14.00 per share on September 1, 2018 with respect to 5,666 of the stock awards, and (iii) \$13.92 per share on September 28, 2018 with respect to 1,923 of the stock awards.
- (7) The value realized on vesting is based on the closing market price of our common stock of \$18.42 per share on February 5, 2018.

[Table of Contents](#)

Potential Payments Upon Termination or Change in Control

Payments After Giving Effect to Severance Plan. We are party to severance agreements with each of our named executive officers, except for Mr. Belsky and Ms. Rubinstein. The severance agreements provide for certain severance benefits in the event of a termination of the applicable named executive officer's employment by us without cause or by such employee for "good reason," as defined in the severance agreements, within three months prior to or 12 months following a change in control of the company. Accordingly, the following table sets forth potential payments upon termination and change in control that would be made to our named executive officers pursuant to such severance agreements, assuming that such termination or change in control occurred on December 31, 2018. In addition to the amounts shown in the table below, each named executive officer, except for Mr. Belsky and Ms. Rubinstein, would be entitled to receive payments for base salary and vacation time accrued through the date of termination and payment for any reimbursable business expenses incurred. For a further description of the current severance benefits applicable to our named executive officers, see the "Severance and Change in Control Benefits" section of this proxy statement.

Name	Benefit	Triggering Event	
		Termination Without a Change in Control (\$)	Termination Without "Cause" or Resignation for "Good Reason" Within 3 Months Prior to or 12 Months Following a Change in Control (\$)
Aron M. Knickerbocker	Severance Payment	790,987 ⁽¹⁾	1,581,973 ⁽²⁾
	Continuation of Benefits	18,404 ⁽³⁾	36,807 ⁽⁴⁾
	Market Value of Stock Vesting ⁽⁵⁾	159,532	319,074
David V. Smith	Severance Payment	322,500 ⁽⁶⁾	645,000 ⁽⁷⁾
	Continuation of Benefits ⁽⁸⁾	—	—
	Market Value of Stock Vesting ⁽⁵⁾	186,000	372,000
Bryan Irving, Ph.D.	Severance Payment	410,523 ⁽⁶⁾	821,045 ⁽⁷⁾
	Continuation of Benefits	16,041 ⁽⁹⁾	32,082 ⁽¹⁰⁾
	Market Value of Stock Vesting ⁽⁵⁾	91,838	183,675
Helen Collins, M.D.	Severance Payment	462,000 ⁽⁶⁾	924,000 ⁽⁷⁾
	Continuation of Benefits ⁽⁸⁾	—	—
	Market Value of Stock Vesting ⁽⁵⁾	123,755	247,520
Francis W. Sarena	Severance Payment	546,203 ⁽¹¹⁾	1,092,406 ⁽¹²⁾
	Continuation of Benefits	15,044 ⁽⁹⁾	30,087 ⁽¹⁰⁾
	Market Value of Stock Vesting ⁽⁵⁾	117,682	235,374
Marc L. Belsky ⁽¹³⁾	Severance Payment	—	—
	Continuation of Benefits	—	—
	Market Value of Stock Vesting	—	—
Linda Rubinstein ⁽¹⁴⁾	Severance Payment	—	—
	Continuation of Benefits	—	—
	Market Value of Stock Vesting	—	—

- (1) Represents 12 monthly payments, each of which is equal to the sum of (i) Mr. Knickerbocker's monthly base salary as of the time of termination; and (ii) a monthly pro-rata bonus amount based on the average of the annual cash incentive bonuses paid to Mr. Knickerbocker for the three years preceding the date of such termination.
- (2) Represents 24 monthly payments, each of which is equal to the sum of (i) Mr. Knickerbocker's monthly base salary as of the time of termination; and (ii) a monthly pro-rata bonus amount based on the average of the annual cash incentive bonuses paid to Mr. Knickerbocker for the three years preceding the date of such termination.
- (3) Represents the cost of continued health and dental benefits. These benefits are payable until the earlier of 12 months following termination or the date Mr. Knickerbocker and his covered dependents become eligible for group health insurance through another employer.

[Table of Contents](#)

- (4) Represents the cost of continued health and dental benefits. These benefits are payable until the earlier of 24 months following termination or the date Mr. Knickerbocker and his covered dependents become eligible for group health insurance through another employer.
- (5) For awards that would become vested, the value of the acceleration would be equal to the number of shares multiplied by, for options, the excess of the then-current stock price over the exercise price of the options, or, for restricted stock, the then-current price of our common stock. For purposes of this table, we calculated the value of the acceleration using the closing price of our common stock on December 31, 2018, or \$9.30 per share.
- (6) Represents nine monthly payments, each of which is equal to the sum of (i) such executive's monthly base salary as of the time of termination; and (ii) a monthly pro-rata bonus amount based on such executive's target annual cash incentive bonus for 2018, if applicable.
- (7) Represents 18 monthly payments, each of which is equal to the sum of (i) such executive's monthly base salary as of the time of termination; and (ii) a monthly pro-rata bonus amount based on such executive's target annual cash incentive bonus for 2018, if applicable.
- (8) As of December 31, 2018, such executive had waived his or her right to receive health and dental benefits through the company. Accordingly, such executive would not have been entitled to any payments for continuation of such benefits upon termination.
- (9) Represents the cost of continued health and dental benefits. These benefits are payable until the earlier of nine months following termination or the date the executive and his covered dependents become eligible for group health insurance through another employer.
- (10) Represents the cost of continued health and dental benefits. These benefits are payable until the earlier of 18 months following termination or the date the executive and his covered dependents become eligible for group health insurance through another employer.
- (11) Represents nine monthly payments, each of which is equal to the sum of (i) Mr. Sarena's monthly base salary as of the time of termination; and (ii) a monthly pro-rata bonus amount based on the average amount of the annual cash incentive bonuses paid to Mr. Sarena for the three years preceding the date of such termination.
- (12) Represents 18 monthly payments, each of which is equal to the sum of (i) Mr. Sarena's monthly base salary as of the time of termination; and (ii) a monthly pro-rata bonus amount based on the average amount of the annual cash incentive bonuses paid to Mr. Sarena for the three years preceding the date of such termination.
- (13) Mr. Belsky resigned as an employee of the company effective April 6, 2018. Accordingly, he was not, as of December 31, 2018, entitled to any severance benefits or payments upon termination.
- (14) We did not enter into a severance agreement with Ms. Rubinstein or with FLG Partners for Ms. Rubinstein's services. Neither Ms. Rubinstein nor FLG Partners was entitled as of December 31, 2018 to any payments upon termination of our consulting agreement with FLG Partners for Ms. Rubinstein's services.

Pay Ratio of Chief Executive Officer to Median Employee

The following is a reasonable estimate of the ratio of the annual total compensation of our Chief Executive Officer, Mr. Knickerbocker, who served in that role for the entirety of 2018, to the annual total compensation of our median employee (determined as described below) for the period between January 1, 2018 and December 31, 2018, or our 2018 Pay Ratio:

Total 2018 Compensation of Mr. Knickerbocker	\$2,084,906
Total 2018 Compensation of Median Employee	\$201,670
Ratio of Chief Executive Officer to Median Employee Compensation	10.34 to 1

Determination of Median Employee

The applicable SEC rules require us to identify a median employee only once every three years, as long as there have been no material changes in our employee population or employee compensation arrangements that we reasonably believe would significantly impact our pay ratio. Because there have been no such changes in our employee population or employee compensation arrangements, we used the same median employee to determine our 2018 Pay Ratio that we used to determine our 2017 Pay Ratio (as defined below).

[Table of Contents](#)

Methodology for Determination of Median Employee

In our 2018 proxy statement, we were required to disclose the ratio of the annual total compensation of our then-Chief Executive Officer, Lewis T. Williams, who served in that role for the entirety of 2017, to the annual total compensation of our median employee for the period between January 1, 2017 and December 31, 2017, or our 2017 Pay Ratio. We determined the median employee for our 2017 Pay Ratio by calculating the annual compensation for each of our full-time employees (excluding Dr. Williams) as of December 31, 2017 based on the following components: base salary (annualized in the case of employees who joined the company following January 1, 2017 or who took an unpaid leave of absence for any period during 2017), overtime earnings, and the value of all option and stock awards received by each such employee in 2017. We excluded cash bonuses received by employees in 2017 for services provided in 2016 from our calculation of 2017 compensation because a significant portion of our employees joined the company following our 2016 cutoff date for eligibility to receive a cash bonus for 2016 services and therefore did not receive cash bonuses in 2017 for services provided in 2016. We also excluded any retention, hiring or other bonuses received by employees in 2017 because we did not widely distribute these bonuses, and such bonuses therefore were not representative of company-wide employee compensation.

The median employee we initially identified for our 2017 Pay Ratio using the methodology described above had anomalous compensation characteristics. As such, in order to obtain a more accurate pay ratio, we substituted another employee with substantially similar compensation, measured based on the methodology described above.

Given the different methodologies that various public companies will use to determine an estimate of their pay ratios, the estimated ratio reported above should not be used as a basis for comparison between companies.

Equity Benefit Plans

For more information on our current equity compensation program and decisions regarding the grants of equity awards in 2018 for our named executive officers, see the section of this proxy statement titled “Compensation Discussion and Analysis – Executive Compensation Elements – Annual Performance-Based Cash Compensation” and “Compensation Discussion and Analysis – Executive Compensation Elements – Long-Term Incentive Compensation.” The following is a summary of the material terms of each of our equity compensation plans.

2013 Omnibus Incentive Plan and Prior Equity Plans

General. In June 2013, our Board adopted and in September 2013, our stockholders approved the 2013 Plan for the purpose of attracting and retaining non-employee directors, executive officers and other key employees and service providers, including officers, employees and service providers of our affiliates, and to stimulate their efforts toward our continued success, long-term growth and profitability. The 2013 Plan provides for the grant of stock options, stock appreciation rights, restricted stock, unrestricted stock, stock units, dividend equivalent rights, other equity-based awards and cash bonus awards. We also maintain the 2010 Plan and 2002 Equity Incentive Plan, or together, the Prior Plans, which have been terminated and under which no future awards will be granted, but under which outstanding options have been granted. These options will continue to be governed by the terms of the applicable Prior Plan.

Authorized Shares. As of April 8, 2019, we had 2,558,495 shares of common stock reserved for issuance pursuant to the 2013 Plan. On January 1 of every year, the number of shares of common stock available for issuance under the 2013 Plan automatically increases by 4% of the total number of issued and outstanding shares of our common stock as of December 31 of the immediately preceding year. On January 1, 2019, the total number of shares available for issuance under the 2013 Plan increased by 1,425,030 shares pursuant to this provision. As of December 31, 2018, options to purchase 3,407,574 shares of our common stock and 880,030 restricted shares of common stock were outstanding under the 2013 Plan, options to purchase 273,479 shares of our common stock were outstanding under the 2010 Equity Incentive Plan, and options to purchase 29,128 shares of our common stock were outstanding under the 2002 Equity Incentive Plan.

[Table of Contents](#)

Change in Control. If we experience a change in control in which equity-based awards under the 2013 Plan that are not exercised prior to the change in control will not be assumed or continued by the surviving entity, unless otherwise provided in an award agreement: (i) all restricted shares will vest, and all stock units and dividend equivalents will vest and the underlying shares will be delivered immediately before the change in control, and (ii) at our Board's discretion, either all options and stock appreciation rights will become exercisable 15 days before the change in control and terminate upon the consummation of the change in control, or all options, stock appreciation rights, restricted shares and stock units may be cancelled before the change in control in exchange for payment of any amount in cash or securities having a value (as determined by our Board), in the case of restricted shares or stock units, equal to the formula or fixed price per share paid to our stockholders and, in the case of options and stock appreciation rights, equal to the product of the number of shares subject to the option or stock appreciation right multiplied by the amount by which the formula or fixed price paid to our stockholders exceeds the exercise price of the option or the stock appreciation right. In the case of performance shares and performance units, however, if more than half of the performance period has lapsed, we will convert the performance shares based on actual performance to date. If less than half of the performance period has lapsed, or if we cannot determine actual performance, we will convert the performance shares and performance units assuming target performance has been achieved.

2013 Employee Stock Purchase Plan

General. In August 2013, our Board adopted and in September 2013, our stockholders approved our 2013 Employee Stock Purchase Plan, or the ESPP. The purpose of the ESPP is to enable our eligible employees, through payroll deductions or cash contributions, to purchase shares of our common stock, to increase our employees' interest in our growth and success and encourage employees to remain in our employment. Any of our employees may participate in the ESPP, except: (i) an employee whose customary employment is less than 20 hours per week; and (ii) an employee who, after exercising his or her rights to purchase common stock under the ESPP, would own shares of common stock (including shares that may be acquired under any outstanding options) representing 5% or more of the total combined voting power of all classes of our capital stock. An employee must be employed on the last trading day of the purchase period to acquire common stock under the ESPP, unless the employee has retired, died or become disabled, been laid off or discharged without cause.

Authorized Shares. As of April 8, 2019, we had 1,438,887 shares of common stock reserved for purchase by our eligible employees. In addition, the number of shares of common stock available for purchase by our eligible employees under the ESPP will automatically increase annually on January 1 until (and including) January 1, 2023 in an amount equal to the lesser of (i) 1% of the total number of issued and outstanding shares of our common stock as of December 31 of the immediately preceding year, or (ii) 300,000 shares of our common stock. Notwithstanding the foregoing, our Board may act prior to January 1 of any calendar year to provide that there shall be no increase in the share reserve for such calendar year or that the increase in the share reserve for such calendar year shall be a lesser number of shares of common stock than would otherwise occur pursuant to the preceding sentence. On January 1, 2019, the total number of shares of our common stock available for issuance under the ESPP increased by 300,000 shares pursuant to this provision.

DIRECTOR COMPENSATION

Cash and Equity Compensation

We maintain a non-employee director compensation policy, pursuant to which we generally target our overall director compensation at the 50th percentile of our peer group. We target our annual base cash retainer at the 50th percentile of our peer group and our annual cash retainer for each board committee and long-term incentive compensation at the 75th percentile of our peer group.

Our director compensation policy provides that each non-employee director receives an annual base cash retainer of \$40,000. In addition, our non-employee directors receive the following cash compensation for Board services, as applicable:

- the Chairman of the Board receives an additional annual retainer of \$35,000;
- the Lead Independent Director receives an additional annual retainer of \$20,000;
- the chairman of our audit committee receives an additional annual retainer of \$20,000;
- each member of our audit committee, other than the chairman, receives an additional annual retainer of \$10,000;
- the chairman of each of our compensation, nominating and corporate governance and research and development committees receives an additional annual retainer of \$15,000; and
- each member of our compensation, nominating and corporate governance and research and development committees, other than the chairman, receives an additional annual retainer of \$7,500.

We pay all amounts in quarterly installments. We also reimburse each director for his or her travel expenses incurred in connection with attendance at Board and committee meetings.

In addition, newly appointed non-employee directors receive a one-time initial award of options to purchase 15,000 shares of our common stock, which vests in equal annual installments over a three-year period, subject to the director's continued service on our Board through each applicable vest date. Each continuing non-employee director receives an annual award of options to purchase 10,000 shares of our common stock, which vests in its entirety on the earlier to occur of (i) the one-year anniversary of the grant date and (ii) the day before the subsequent annual meeting of stockholders, subject to each such director's continued service on our Board through such vest date.

Our compensation committee periodically reviews our director compensation policy, taking into account various factors, including the director compensation practices of our peer group, to determine whether any updates to this policy are appropriate. Working with Radford, our compensation committee conducted such a review in January 2018 and determined that our director compensation program remained consistent with the goals of our compensation philosophy and, accordingly, that no adjustments were needed at this time.

Equity Grant to William Ringo

Effective January 1, 2019, William Ringo became Chairman of the Board. In connection with Mr. Ringo's appointment, our compensation committee evaluated Mr. Ringo's expanded role on our Board and the corresponding increase in his responsibilities and approved a one-time award to Mr. Ringo of 10,000 shares of restricted common stock, which will vest in its entirety on the one-year anniversary of the grant date, subject to Mr. Ringo's continued service on our Board through such vest date.

Table of Contents

Director Compensation

The following table sets forth information concerning compensation accrued or paid to our independent, non-employee directors during the year ended December 31, 2018 for their service on our Board. Directors who were also our employees in 2018 received no additional compensation for their service as directors and are not set forth in the table below.

Name	Fees Earned or Paid in Cash (\$)	Option Awards ⁽¹⁾ (2)(3) (\$)	Total (\$)
Franklin M. Berger	62,500	105,850	168,350
Fred E. Cohen, M.D., D.Phil. ⁽⁴⁾	20,000	—	20,000
Kapil Dhingra, M.B.B.S.	55,000	105,850	160,850
Sheila Gujrathi, M.D.	55,000	105,850	160,850
Peder K. Jensen, M.D.	71,250	105,850	177,100
Mark D. McDade ⁽⁵⁾	63,750	105,850	169,600
Garry Nicholson	61,667	105,850	167,517
William Ringo	70,000	105,850	175,850

- (1) Amounts reflect the grant date fair value of option awards granted in 2018 in accordance with ASC 718. For information regarding assumptions underlying the value of equity awards, see Note 2 to our financial statements and the discussion under “Management’s Discussion and Analysis of Financial Condition and Results of Operations – Critical Accounting Policies and Use of Estimates – Stock-Based Compensation” included in our Annual Report on Form 10-K for the fiscal year ended December 31, 2018. These amounts do not correspond to the actual value that the directors will recognize.
- (2) On May 10, 2018, our Board granted an option to purchase 10,000 shares of our common stock to each continuing non-employee director. The shares underlying these options will vest in their entirety on May 10, 2019, subject in each case to the applicable director’s continued service on our Board through such date.
- (3) The following table provides the total number of option shares outstanding for each current and former director as of December 31, 2018.

Name	Options Outstanding (#)
Franklin M. Berger	42,500
Fred E. Cohen, M.D., D.Phil. ⁽⁴⁾	32,500
Kapil Dhingra, M.B.B.S.	55,000
Sheila Gujrathi, M.D.	55,000
Peder K. Jensen, M.D.	55,000
Mark D. McDade ⁽⁵⁾	86,544
Garry Nicholson	25,000
William Ringo	59,100

- (4) Dr. Cohen retired from our Board at the end of his three-year term of service in connection with our 2018 annual meeting of stockholders.
- (5) Mr. McDade resigned from our Board effective November 30, 2018.

Indemnification

We entered into indemnification agreements with each of our directors and executive officers, except for Ms. Rubinstein. These indemnification agreements and our certificate of incorporation and bylaws provide for indemnification of each of our directors and executive officers to the fullest extent permitted by Delaware law.

In addition, we agreed to indemnify Ms. Rubinstein and FLG Partners with respect to Ms. Rubinstein’s services as our Interim Chief Financial Officer pursuant to our consulting agreement with FLG Partners.

TRANSACTIONS WITH RELATED PERSONS

Policies and Procedures Regarding Transactions with Related Persons

We have adopted a policy in which either (i) our audit committee (or any other committee of our Board consisting of independent directors), or (ii) the full Board reviews and approves all proposed related-person transactions. This review covers any transaction, arrangement or relationship, or any series of similar transactions, arrangements or relationships, in which we were or are to be a participant; the amount involved exceeds the lesser of \$120,000 or 1% of the average of our total assets at year end of the last two completed fiscal years; and a related person had or will have a direct or indirect material interest, including purchases of goods or services by or from a related person or entities in which the related person has a material interest, and indebtedness, guarantees of indebtedness and employment by us of a related person. A “related person” is any person who is or was one of our executive officers, directors or director nominees or is a holder of more than 5% of our common stock, or an immediate family member of or any entity owned or controlled by any of the foregoing persons.

Certain Related-Person Transactions

Since January 1, 2017, other than as described below, there have been no transactions or series of similar transactions to which we were a party or will be a party, and which qualified as a related person transaction. All of the transactions described below were reviewed and approved by either our audit committee or our Board.

Participation in Follow-On Offering

In January 2018, we entered into an underwriting agreement with Goldman Sachs & Co. LLC, J.P. Morgan Securities LLC and Leerink Partners LLC, as representatives of the several underwriters, relating to a follow-on underwritten public offering of shares of our common stock, or the follow-on offering. Pursuant to the underwriting agreement, we sold an aggregate of 5,897,435 shares of our common stock to the underwriters, including 769,230 shares of common stock that we sold pursuant to the exercise in full by the underwriters of their option to purchase additional shares in connection with the follow-on offering, at a price to the public of \$19.50 per share. Our follow-on offering closed on January 24, 2018. At the time of the follow-on offering, certain holders of more than 5% of our capital stock purchased shares of our common stock from the underwriters in the follow-on offering at the follow-on offering price of the shares to the public.

The following table sets forth the number of shares of our common stock purchased and the aggregate cash purchase price paid by each of these stockholders.

<u>Purchaser</u>	<u>Shares of Common Stock</u>	<u>Purchase Price</u>
Entities affiliated with Wellington Management Group LLP	1,000,000	\$ 19,500,000
Entities affiliated with FMR LLC	769,231	\$ 15,000,005
Entities affiliated with The Vanguard Group, Inc.	125,000	\$ 2,437,500

Consulting Agreement with FLG Partners

In April 2018, following Mr. Belsky’s resignation from his position as our Senior Vice President and Chief Financial Officer, we retained Ms. Rubinstein, a partner at FLG Partners, to serve as our Interim Chief Financial Officer pursuant to a consulting agreement with FLG Partners. Under the terms of the consulting agreement, we agreed to pay FLG Partners at a rate of \$400 per hour for Ms. Rubinstein’s services and paid an aggregate of \$530,171 for services Ms. Rubinstein provided in 2018. In addition, we agreed to indemnify Ms. Rubinstein and FLG Partners with respect to Ms. Rubinstein’s services as our Interim Chief Financial Officer.

[Table of Contents](#)

Consulting Agreement with Lewis T. Williams

On March 15, 2019, we entered into a consulting agreement, effective April 1, 2019, with Dr. Williams, a member of our Board, pursuant to which Dr. Williams will provide consulting services to us from time to time, including as Chairman of our Scientific Advisor Board, for a term ending on May 31, 2022. Pursuant to the consulting agreement, in consideration of Dr. Williams' provision of such services, we agreed to pay Dr. Williams (i) a monthly retainer of \$10,000 for up to 20 hours of services each month and (ii) at a rate of \$500 per hour for each additional hour of services he provides each month. In addition, if Dr. Williams elects to continue under COBRA health or dental insurance coverage provided through the company in connection with Dr. Williams' former employment with the company, we will pay for the monthly cost of such coverage until September 30, 2020.

Dr. Williams resigned as an employee of the company, effective March 15, 2019. Dr. Williams continues to serve as a member of our Board.

Other Transactions

We entered into various employment-related agreements and compensatory arrangements with our directors and executive officers that, among other things, provide for compensatory and certain severance and change of control benefits. For a description of these agreements and arrangements, see the sections of this proxy statement titled "Executive Compensation – Compensation Discussion and Analysis – Executive Compensation Elements – Severance and Change in Control Benefits," "Executive Compensation – Compensation Discussion and Analysis – Employment Arrangements" and "Director Compensation – Cash and Equity Compensation."

We entered into indemnification agreements with each of our current directors and executive officers, except for Ms. Rubinstein. Our consulting agreement with FLG Partners for Ms. Rubinstein's services as our Interim Chief Financial Officer provides for indemnification of both FLG Partners and Ms. Rubinstein in connection with Ms. Rubinstein's services. Our indemnification agreements and obligations with respect to our current directors and executive officers are further described in the section of this proxy statement titled "Director Compensation–Indemnification."

SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

The following table sets forth information regarding the beneficial ownership of shares of our common stock as of April 1, 2019 by (i) each named executive officer, (ii) each director and nominee for director, (iii) all directors and named executive officers as a group and (iv) each person, or group of affiliated persons, who is known by us to beneficially own more than 5% of our outstanding common stock. Other than as set forth in this table, we are not aware of any person or group that holds greater than 5% of our outstanding common stock.

Information with respect to beneficial ownership is based on information furnished to us by each director, named executive officer and stockholder who holds more than 5% of our outstanding common stock, and Schedules 13G or 13D filed with the SEC. Beneficial ownership of securities is determined according to the rules of the SEC and generally means, with respect to a security, that a person or entity possesses sole or shared voting or investment power of such security, including options and warrants that are currently exercisable or will be exercisable within 60 days of April 1, 2019. Options to purchase shares of our common stock that are exercisable within 60 days of April 1, 2019 are deemed to be beneficially owned by the person holding these options for the purpose of computing percentage ownership of that person, but they are not treated as outstanding for the purpose of computing any other person's ownership percentage. Except as indicated in the footnotes below, each of the beneficial owners named in the table below has, to our knowledge, sole voting and investment power with respect to all shares of common stock listed as beneficially owned by such beneficial owner, except for shares owned jointly with that person's spouse.

We have based our calculations of beneficial ownership on 36,064,841 shares of our common stock outstanding as of April 1, 2019.

Unless otherwise indicated, the address for each of the stockholders in the table below is c/o Five Prime Therapeutics, Inc., 111 Oyster Point Boulevard, South San Francisco, California 94080.

<u>Name and Address of Beneficial Owner</u>	<u>Amount & Nature of Beneficial Ownership</u>	<u>Percent of Class (Common Stock)</u>
5% Stockholders:		
Entities affiliated with Wellington Management Group LLP(1)	4,020,824	11.1%
Entities and individuals affiliated with FMR LLC(2)	3,707,768	10.3%
Entities affiliated with BlackRock, Inc.(3)	3,039,915	8.4%
Entities and individuals affiliated with Biotechnology Value Fund, L.P.(4)	2,781,346	7.7%
Entities and individuals affiliated with Great Point Partners, LLC(5)	2,398,409	6.7%
Named Executive Officers and Directors:		
Aron M. Knickerbocker(6)	537,267	1.5%
David V. Smith(7)	40,000	*
Bryan Irving, Ph.D.(8)	84,673	*
Helen Collins, M.D.(9)	120,043	*
Francis W. Sarena(10)	315,531	*
Marc L. Belsky(11)	43,110	*
Linda Rubinstein(12)	—	—
Franklin M. Berger(13)	127,480	*
Kapil Dhingra, M.B.B.S.(14)	55,000	*
Sheila Gujrathi, M.D.(14)	55,000	*
Peder K. Jensen, M.D.(14)	55,000	*
Garry Nicholson(14)	19,999	*
William Ringo(15)	69,100	*
Lewis T. Williams, M.D., Ph.D.(16)	1,038,261	2.8%
All executive officers and directors as a group (14 persons)	2,560,464	7.1%

* Represents beneficial ownership of less than 1% of our outstanding common stock.

Table of Contents

- (1) Includes 3,569,681 shares of common stock held by clients of one or more of certain investment advisors directly or indirectly owned by Wellington Management Group LLP, or the Wellington Investment Advisors. Wellington Investment Advisors Holdings LLP controls, directly or indirectly, the Wellington Investment Advisors. Wellington Investment Advisors Holdings LLP is owned by Wellington Group Holdings LLP. Wellington Group Holdings LLP is owned by Wellington Management Group LLP. (i) Each of Wellington Management Group LLP, Wellington Group Holdings LLP and Wellington Investment Advisors Holdings LLP has shared voting power over 3,569,681 shares of common stock and shared dispositive power over 4,020,824 shares of common stock; and (ii) Wellington Management Company LLP has shared voting power over 3,496,361 shares of common stock and shared dispositive power over 3,780,985 shares of common stock. Each of Wellington Management Group LLP, Wellington Group Holdings LLP, Wellington Investment Advisors Holdings LLP and Wellington Management Company LLP, or collectively, Wellington, disclaims beneficial ownership of the shares beneficially held by clients of any of the investment advisors directly or indirectly owned by Wellington Management Group LLP, except to the extent of their respective actual pecuniary interests therein. The address for Wellington is c/o Wellington Management Company LLP, 280 Congress Street, Boston, Massachusetts 02210. The foregoing information regarding the beneficial ownership of Wellington is based on our review of Amendment No. 8 to Schedule 13G filed with the SEC by Wellington on February 14, 2019 regarding their beneficial ownership of our common stock as of December 31, 2018.
- (2) Includes 3,707,768 shares of common stock held by clients of FMR Co., Inc., an investment advisor directly or indirectly owned by FMR LLC. FMR LLC has sole voting power over 902,632 shares of common stock and sole dispositive power over 3,707,768 shares of common stock. FMR LLC, as the direct or indirect owner of FMR Co., Inc., may be deemed to beneficially own the shares held by FMR Co., Inc. Members of the family of Abigail P. Johnson, Director, Chairman and Chief Executive Officer of FMR LLC, including Abigail P. Johnson, or collectively, the Johnson Family, are the predominant owners, directly or through trusts, of Series B voting common shares of FMR LLC, representing 49% of the voting power of FMR LLC, and may be deemed to beneficially own the shares beneficially held by FMR LLC. The Johnson Family disclaims beneficial ownership of the shares beneficially owned by FMR LLC, except to the extent of its actual pecuniary interests therein. Each of FMR LLC and the Johnson Family disclaims beneficial ownership of the shares beneficially held by clients of any of FMR Co., Inc., except to the extent of their respective actual pecuniary interests therein. The address for FMR LLC is 245 Summer Street, Boston, Massachusetts 02210. The foregoing information regarding the beneficial ownership of FMR LLC, FMR Co., Inc. and the Johnson Family is based on our review of Amendment No. 3 to Schedule 13G filed with the SEC by FMR LLC on February 13, 2019 regarding their beneficial ownership of our common stock as of December 31, 2018.
- (3) Consists of 3,039,915 shares of common stock held by clients of one or more of the following investment advisors directly or indirectly owned by BlackRock, Inc.: BlackRock International Limited; BlackRock Advisors, LLC; BlackRock (Netherlands) B.V.; BlackRock Institutional Trust Company, National Association; BlackRock Asset Management Ireland Limited; BlackRock Financial Management, Inc.; BlackRock Japan Co., Ltd.; BlackRock Asset Management Schweiz AG; BlackRock Investment Management, LLC; BlackRock Investment Management (UK) Limited; BlackRock Asset Management Canada Limited; BlackRock Investment Management (Australia) Limited; and BlackRock Fund Advisors, or collectively, the BlackRock Entities. BlackRock, Inc. has sole voting power over 2,946,090 shares of common stock and sole dispositive power over 3,039,915 shares of common stock. Each of BlackRock, Inc. and the BlackRock Entities disclaims beneficial ownership of the shares beneficially held by clients of BlackRock, Inc. and any of the BlackRock Entities, except to the extent of their respective actual pecuniary interests therein. The address for BlackRock, Inc. is 55 East 52nd Street, New York, New York 10055. The foregoing information regarding the beneficial ownership of BlackRock, Inc. and the BlackRock Entities is based on our review of Amendment No. 4 to Schedule 13G filed with the SEC by BlackRock, Inc. on February 4, 2019 regarding their beneficial ownership of our common stock as of December 31, 2018.

Table of Contents

- (4) Consists of (i) 1,348,588 shares of common stock beneficially owned by Biotechnology Value Fund, L.P., or BVF1; (ii) 1,089,797 shares of common stock beneficially owned by Biotechnology Value Fund II, L.P., or BVF2; and (iii) 191,418 shares of common stock beneficially owned by Biotechnology Value Trading Fund OS LP, or Trading Fund. BVF Partners OS Ltd., or Partners OS, as the general partner of Trading Fund, may be deemed to beneficially own the 191,418 shares beneficially owned by Trading Fund. BVF Partners L.P., or Partners, as the general partner of BVF1, BVF2, the investment manager of Trading Fund, and the sole member of Partners OS, may be deemed to beneficially own the 2,781,346 shares of common stock beneficially owned in the aggregate by BVF1, BVF2, Trading Fund, and a certain Partners managed account, or the Partners Managed Account, including 151,543 shares of common stock held in the Partners Managed Account. BVF Inc., as the general partner of Partners, may be deemed to beneficially own the 2,781,346 shares of common stock beneficially owned by Partners. Mark N. Lampert, as a director and officer of BVF Inc., may be deemed to beneficially own the 2,781,346 shares of common stock beneficially owned by BVF Inc. Partners OS disclaims beneficial ownership of the shares of common stock beneficially owned by Trading Fund. Each of Partners, BVF Inc. and Mr. Lampert disclaims beneficial ownership of the shares of common stock beneficially owned by BVF1, BVF2, Trading Fund and the Partners Managed Account. The address for each of BVF1, BVF2, Trading Fund, Partners OS, Partners, BVF Inc. and Mr. Lampert is 44 Montgomery Street, 40th Floor, San Francisco, California, 94104. The foregoing information regarding the beneficial ownership of BVF1, BVF2, Trading Fund, Partners OS, Partners, BVF Inc. and Mr. Lampert is based on our review of Amendment No. 2 to Schedule 13G filed with the SEC by such entities and persons on February 14, 2019 regarding their beneficial ownership of our common stock as of December 31, 2018.
- (5) Great Point Partners, LLC, or Great Point, may be deemed to beneficially own 2,398,409 shares of common stock. (i) Biomedical Value Fund, L.P., or BVF, is the record owner of 729,116 shares of common stock; (ii) Biomedical Offshore Value Fund, Ltd., or BOVF, is the record owner of 942,574 shares of common stock; and (iii) GEF-SMA, LP, or GEF-SMA, is the record owner of 726,719 shares of common stock. Great Point is the investment manager of each of BVF, BOVF and GEF-SMA, and by virtue of such status may be deemed to be the beneficial owner of all such shares. Each of Jeffrey R. Jay, M.D., as senior managing member of Great Point, and David Kroin, as special managing member of Great Point, has voting and investment power with respect to such shares, and therefore may be deemed to be the beneficial owner of such shares. Great Point, Dr. Jay, and Mr. Kroin disclaim beneficial ownership of such shares, except to the extent of their respective actual pecuniary interests therein. The address of the principal business office of each of Great Point, Dr. Jay, and Mr. Kroin is 165 Mason Street, 3rd Floor, Greenwich, CT 06830. The foregoing information regarding the beneficial ownership of Great Point, Dr. Jay and Mr. Kroin is based on our review of Amendment No. 1 to Schedule 13G filed with the SEC by such entities and persons on February 14, 2019 regarding their beneficial ownership of our common stock as of December 31, 2018.
- (6) Consists of (a) 48,211 shares of common stock held directly by Mr. Knickerbocker, (b) 184,471 shares of common stock held by the Aron M. Knickerbocker Revocable Trust and (c) 304,585 shares of common stock issuable upon the exercise of stock options within 60 days of April 1, 2019.
- (7) Consists solely of shares of common stock.
- (8) Consists of (a) 31,153 shares of common stock and (b) 53,520 shares of common stock issuable upon the exercise of stock options within 60 days of April 1, 2019.
- (9) Consists of (a) 39,794 shares of common stock and (b) 80,249 shares of common stock issuable upon the exercise of stock options within 60 days of April 1, 2019.
- (10) Consists of (a) 82,955 shares of common stock and (b) 232,576 shares of common stock issuable upon the exercise of stock options within 60 days of April 1, 2019.
- (11) Consists solely of shares of common stock held by the Belsky Living Trust. Information with respect to Mr. Belsky's beneficial ownership is based on information furnished to the company by Mr. Belsky as of April 10, 2019.
- (12) Ms. Rubinstein did not beneficially own any common stock on November 26, 2018, the date of termination of her tenure as our Interim Chief Financial Officer. We do not have any records regarding Ms. Rubinstein's beneficial ownership of our common stock following such date.

[Table of Contents](#)

- (13) Consists of (a) 84,980 shares of common stock and (b) 42,500 shares of common stock issuable upon the exercise of stock options within 60 days of April 1, 2019.
- (14) Consists solely of shares of common stock issuable upon the exercise of stock options within 60 days of April 1, 2019.
- (15) Consists of (a) 10,000 shares of common stock and (b) 59,100 shares of common stock issuable upon the exercise of stock options within 60 days of April 1, 2019.
- (16) Consists of (a) 462,360 shares of common stock and (b) 575,901 shares of common stock issuable upon the exercise of stock options within 60 days of April 1, 2019.

SECTION 16(a) BENEFICIAL OWNERSHIP REPORTING COMPLIANCE

Section 16(a) of the Exchange Act requires our directors, executive officers and persons who own more than 10% of our common stock to report to the SEC their initial ownership of our common stock and any subsequent changes in that ownership. The SEC has established specific due dates for these reports and we are required to disclose in this proxy statement any late filings or failures to file.

Based solely on our review of the copies of such reports furnished to us and written representations from reporting persons that no other reports were required during the fiscal year ended December 31, 2018, we believe that, during the 2018 fiscal year, all of our directors and executive officers complied with all Section 16(a) filing requirements applicable to them, except that a late Form 4 report was filed for Lewis T. Williams, a member of our Board and former Executive Chairman, on November 13, 2018 to report an event that occurred on November 5, 2018.

SECURITIES AUTHORIZED FOR ISSUANCE UNDER EQUITY COMPENSATION PLANS

The following table sets forth the aggregate information of our equity compensation plans in effect as of December 31, 2018.

Plan Category	Number of securities to be issued upon exercise of outstanding options, warrants and rights (a)	Weighted-average exercise price of outstanding options, warrants and rights (\$)(1) (b)	Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a)) (c)
Equity compensation plans approved by stockholders:			
2002 Equity Incentive Plan ⁽²⁾	29,128	6.28	—
2010 Equity Incentive Plan ⁽²⁾	273,479	6.91	—
2013 Omnibus Incentive Plan	4,287,604 ⁽³⁾	30.28	1,884,387
2013 Employee Stock Purchase Plan	—	—	1,138,877
Equity compensation plans not approved by stockholders	—	—	—
Total	4,590,211	28.37	3,023,264

- (1) Shares of restricted common stock are not included for the purpose of determining the weighted-average exercise price set forth in this column (b) because no cash consideration is required to receive these shares upon vesting.
- (2) The 2002 Equity Incentive Plan and the 2010 Equity Incentive Plan were terminated in 2013, and any shares remaining available for future grants and option forfeitures under such plans have been allocated to the 2013 Omnibus Incentive Plan.
- (3) This value includes 3,407,574 shares of common stock subject to outstanding options and 880,030 shares of restricted common stock.

HOUSEHOLDING OF PROXY MATERIALS

The SEC has adopted rules that permit companies and intermediaries (e.g., brokers) to satisfy the delivery requirements for proxy statements and annual reports with respect to two or more stockholders sharing the same address by delivering a single proxy statement addressed to those stockholders. This process, which is commonly referred to as “householding,” potentially means extra convenience for stockholders and cost savings for companies.

This year, a number of brokers with account holders who are our stockholders will be “householding” our Proxy Materials. A single set of Proxy Materials will be delivered to multiple stockholders sharing an address unless contrary instructions have been received from the affected stockholders. Once you have received notice from your broker that they will be “householding” communications to your address, “householding” will continue until you are notified otherwise or until you revoke your consent. If, at any time, you no longer wish to participate in “householding” and would prefer to receive a separate set of Proxy Materials, please notify your broker.

You may also request an additional proxy statement and Annual Report on Form 10-K for the fiscal year ended December 31, 2018 by sending a written request to:

Five Prime Therapeutics, Inc.
Attn: Francis W. Sarena, Secretary
111 Oyster Point Boulevard
South San Francisco, California 94080
(415) 365-5600

Stockholders who currently receive multiple copies of the proxy statement at their addresses and would like to request “householding” of their communications should contact their brokers.

OTHER MATTERS

We know of no other business that will be presented for consideration at the Annual Meeting other than as stated in the Notice of Annual Meeting of Stockholders. If, however, other matters are properly brought before the Annual Meeting, it is the intention of the persons named as proxies in the proxy card or voter instruction form, as applicable, to vote the shares represented thereby in accordance with the recommendation of our Board.

By Order of the Board of Directors,



Francis W. Sarena
Chief Strategy Officer and Secretary

South San Francisco, California
April , 2019

A copy of our proxy statement and Annual Report on Form 10-K for the fiscal year ended December 31, 2018 is available without charge upon written request to our Secretary, c/o Five Prime Therapeutics, Inc., 111 Oyster Point Boulevard, South San Francisco, California 94080.

FIVE PRIME THERAPEUTICS, INC.
111 OYSTER POINT BOULEVARD
SOUTH SAN FRANCISCO, CA 94080

VOTE BY INTERNET - www.proxyvote.com

Use the Internet to transmit your voting instructions and for electronic delivery of information. Vote by 11:59 P.M. Eastern Time on June 6, 2019 for shares held directly and by 11:59 P.M. Eastern Time on June 4, 2019 for shares held in the Five Prime Therapeutics, Inc. 401(k) Plan through Fidelity. Have your proxy card in hand when you access the web site and follow the instructions to obtain your records and to create an electronic voting instruction form.

ELECTRONIC DELIVERY OF FUTURE PROXY MATERIALS

If you would like to reduce the costs incurred by our company in mailing proxy materials, you can consent to receiving all future proxy statements, proxy cards and annual reports electronically via e-mail or the Internet. To sign up for electronic delivery, please follow the instructions above to vote using the Internet and, when prompted, indicate that you agree to receive or access proxy materials electronically in future years.

VOTE BY PHONE - 1-800-690-6903

Use any touch-tone telephone to transmit your voting instructions. Vote by 11:59 P.M. Eastern Time on June 6, 2019 for shares held directly and by 11:59 P.M. Eastern Time on June 4, 2019 for shares held in the Five Prime Therapeutics, Inc. 401(k) Plan through Fidelity. Have your proxy card in hand when you call and then follow the instructions.

VOTE BY MAIL

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

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

E72656-P19773

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

THIS PROXY CARD IS VALID ONLY WHEN SIGNED AND DATED.

FIVE PRIME THERAPEUTICS, INC.

The Board of Directors recommends you vote FOR the following:

1. Election of Directors

Nominees:	For	Withhold
1a. Franklin M. Berger, CFA	<input type="checkbox"/>	<input type="checkbox"/>
1b. William Ringo	<input type="checkbox"/>	<input type="checkbox"/>
1c. Lewis T. Williams, M.D., Ph.D.	<input type="checkbox"/>	<input type="checkbox"/>

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

	For	Against	Abstain
2. To approve, on an advisory basis, the compensation of the named executive officers as disclosed in the proxy statement.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. To ratify the appointment of Ernst & Young LLP as independent registered public accounting firm for the fiscal year ending December 31, 2019.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. To approve the stock option exchange program as disclosed in the proxy statement.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

NOTE: Such other business as may properly come before the meeting or any adjournment thereof.

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

Signature [PLEASE SIGN WITHIN BOX]	Date	Signature (Joint Owner)	Date

Important Notice Regarding the Availability of Proxy Materials for the Annual Meeting:
The Notice and Proxy Statement and Form 10-K are available at www.proxyvote.com.

E72657-919773

**FIVE PRIME THERAPEUTICS, INC.
Annual Meeting of Stockholders
June 7, 2019 8:00 AM
This proxy is solicited by the Board of Directors**

The stockholder hereby appoints Aron M. Knickerbocker and David V. Smith, or either of them, as proxies, each with the power to appoint their substitute, and hereby authorizes them to represent and to vote, as designated on the reverse side of this ballot, all of the shares of common stock of FIVE PRIME THERAPEUTICS, INC. that the stockholder is entitled to vote at the Annual Meeting of Stockholders to be held at 8:00 AM PDT on June 7, 2019, at FIVE PRIME THERAPEUTICS, INC., 111 Oyster Point Boulevard, South San Francisco, CA 94080, and any adjournment or postponement thereof.

This proxy, when properly executed, will be voted in the manner directed herein. If no such direction is made, this proxy will be voted FOR Items 1, 2, 3 and 4, in accordance with the Board of Directors' recommendations.

Continued and to be signed on reverse side