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

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 under § 240.14a-12

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

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

 - (3) Filing Party:

 - (4) Date Filed:

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AEGLEA BIOTHERAPEUTICS, INC.
805 Las Cimas Parkway
Suite 100
Austin, TX 78746

NOTICE OF ANNUAL MEETING OF STOCKHOLDERS TO BE HELD ON JUNE 8, 2020

Dear Stockholders:

You are cordially invited to attend the 2020 Annual Meeting of Stockholders of Aeglea BioTherapeutics, Inc. The meeting will be held on Friday, June 8, 2020, at 9:00 a.m. local time at 805 Las Cimas Parkway, Suite 100, Austin, TX 78746. We are sensitive to the public health and travel concerns our stockholders may have and recommendations that public health officials may issue in light of the evolving coronavirus (COVID-19) situation. As a result, we may impose additional procedures or limitations on meeting attendees (beyond those described herein) or may decide to hold the meeting in a different location or solely by means of remote communication (i.e., a virtual-only meeting). We plan to announce any such updates on our proxy website <http://ir.aegleabio.com/financial-information/annual-reports> and by press release and we encourage you to check both prior to the meeting if you plan to attend. It is important that you retain a copy of the control number found on the proxy card, voting instruction form or Notice, as such number will be required in order for stockholders to gain access to any meeting held solely by means of remote communication.

We are holding the meeting for the following purposes, which are more fully described in the accompanying proxy statement:

1. To elect two Class I directors of Aeglea BioTherapeutics, Inc. each to serve until the third annual meeting of stockholders following this meeting and until his or her successor has been elected and qualified or until his or her earlier resignation or removal.
2. To ratify the appointment of PricewaterhouseCoopers LLP as our independent registered public accounting firm for the fiscal year ending December 31, 2020.
3. To transact such other business as may properly come before the Annual Meeting or any adjournment or postponement thereof.

Only stockholders of record at the close of business on April 13, 2020 are entitled to notice of, and to vote at, the meeting and any adjournments thereof. This Notice and the accompanying proxy statement are being mailed out to stockholders as of the record date beginning on or about April 23, 2020.

For ten days prior to the meeting, a complete list of the stockholders entitled to vote at the meeting will be available upon request by any stockholder for any purpose germane to the meeting. Requests should be sent to:

Aeglea BioTherapeutics, Inc.
805 Las Cimas Parkway
Suite 100
Austin, Texas 78746
Attn: Corporate Secretary

If the meeting is held by means of remote communication, then the stockholder list will also be available during such virtual meeting via <http://ir.aegleabio.com/financial-information/annual-reports>.

Your vote as an Aeglea BioTherapeutics, Inc. stockholder is very important. Each share of stock that you own represents one vote. For questions regarding your stock ownership, you may contact us through our website at <http://ir.aegleabio.com> or, if you are a registered holder, our transfer agent, American Stock Transfer & Trust Company, by email through the American Stock Transfer & Trust Company website at www.amstock.com/main/nav_contactUs.asp or by phone at (800) 937-5449.

By Order of the Board of Directors,



Anthony G. Quinn, M.B Ch.B, Ph.D.
President and Chief Executive Officer

Austin, Texas
April 23, 2020

YOUR VOTE IS IMPORTANT

WE CURRENTLY PLAN TO HOLD THE ANNUAL MEETING IN PERSON. WHETHER OR NOT YOU PLAN TO ATTEND THE ANNUAL MEETING, WE ENCOURAGE YOU TO VOTE AND SUBMIT YOUR PROXY BY INTERNET, TELEPHONE OR BY MAIL. FOR ADDITIONAL INSTRUCTIONS ON VOTING BY TELEPHONE OR THE INTERNET, PLEASE REFER TO YOUR PROXY CARD. TO VOTE AND SUBMIT YOUR PROXY BY MAIL, PLEASE COMPLETE, SIGN AND DATE THE ENCLOSED PROXY CARD AND RETURN IT IN THE ENCLOSED ENVELOPE. IF YOU ATTEND THE ANNUAL MEETING, YOU MAY REVOKE YOUR PROXY AND VOTE IN PERSON. IF YOU HOLD YOUR SHARES THROUGH AN ACCOUNT WITH A BROKERAGE FIRM, BANK OR OTHER NOMINEE, PLEASE FOLLOW THE INSTRUCTIONS YOU RECEIVE FROM YOUR ACCOUNT MANAGER TO VOTE YOUR SHARES. WE PLAN TO ANNOUNCE ANY UPDATES AS TO THE LOCATION OF OUR ANNUAL MEETING VIA PRESS RELEASE POSTED TO OUR PROXY WEBSITE AND BY A BROADLY DISSEMINATED PRESS RELEASE.

IT IS IMPORTANT THAT YOU RETAIN A COPY OF THE CONTROL NUMBER FOUND ON THE PROXY CARD, VOTING INSTRUCTION FORM OR NOTICE, AS SUCH NUMBER WILL BE REQUIRED IN ORDER FOR STOCKHOLDERS TO GAIN ACCESS TO ANY MEETING HELD SOLELY BY MEANS OF REMOTE COMMUNICATION.

PROXY STATEMENT FOR 2020 ANNUAL MEETING OF STOCKHOLDERS

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AEGLEA BIOTHERAPEUTICS, INC.
805 Las Cimas Parkway
Suite 100
Austin, TX 78746

PROXY STATEMENT FOR THE 2020 ANNUAL MEETING OF STOCKHOLDERS

April 23, 2020

INFORMATION ABOUT SOLICITATION AND VOTING

The accompanying proxy is solicited on behalf of the board of directors of Aeglea BioTherapeutics, Inc. (“**Aeglea**”) for use at Aeglea’s 2020 Annual Meeting of Stockholders (“**Annual Meeting**”) to be held on June 8, 2020, at 9:00 a.m. local time, and any adjournment or postponement thereof. We currently intend to hold the annual meeting in person. However, we are sensitive to the public health and travel concerns our stockholders may have and recommendations that public health officials may issue in light of the evolving coronavirus (COVID-19) situation. As a result, we may impose additional procedures or limitations on meeting attendees (beyond those described above and herein) or may decide to hold the meeting in a different location or solely by means of remote communication (i.e., a virtual-only meeting). We plan to announce any such updates on our proxy website <http://ir.aegleabio.com/financial-information/annual-reports> and by press release and we encourage you to check both prior to the meeting if you plan to attend. It is important that you retain a copy of the control number found on the proxy card, voting instruction form or Notice, as such number will be required in order for stockholders to gain access to any meeting held solely by means of remote communication.

This Proxy Statement and the accompanying form of proxy were first mailed to stockholders on or about April 23, 2020. An annual report on Form 10-K for the year ended December 31, 2019 is enclosed with this Proxy Statement. An electronic copy of this Proxy Statement and annual report on Form 10-K are available at www.proxyvote.com.

GENERAL INFORMATION ABOUT THE ANNUAL MEETING

Purpose of the Annual Meeting

At the Annual Meeting, stockholders will act upon the proposals described in this Proxy Statement for the 2020 Annual Meeting (“**Proxy Statement**”).

Record Date; Quorum

Only holders of record of common stock at the close of business on April 13, 2020 (“**Record Date**”) will be entitled to vote at the Annual Meeting. At the close of business on the Record Date, we had 29,147,461 shares of common stock outstanding and entitled to vote.

The holders of a majority of the voting power of the shares of stock entitled to vote at the Annual Meeting as of the Record Date must be present at the Annual Meeting in order to hold the Annual Meeting and conduct business. This presence is called a quorum. Your shares are counted as present at the Annual Meeting if you are present and vote in person at the Annual Meeting or if you have properly submitted a proxy.

Voting Rights; Required Vote

In deciding all matters at the Annual Meeting, each holder of shares of common stock is entitled to one vote for each share of common stock held as of the close of business on the Record Date. We do not have cumulative voting rights for the election of directors. You may vote all shares owned by you as of the Record Date, including (i) shares held directly in your name as the stockholder of record, and (ii) shares held for you as the beneficial owner in street name through a broker, bank, trustee, or other nominee. There are no dissenter or appraisal rights relating to the matters to be acted upon at the Annual Meeting.

Stockholder of Record: Shares Registered in Your Name. If, on the Record Date, your shares were registered directly in your name with our transfer agent, American Stock Trust & Transfer Company, then you are considered the stockholder of record with respect to those shares. As a stockholder of record, you may vote at the Annual Meeting or vote by telephone, by Internet, or by filling out and returning the proxy card.

Beneficial Owner: Shares Registered in the Name of a Broker or Nominee. If, on the Record Date, your shares were held in an account with a brokerage firm, bank or other nominee, then you are the beneficial owner of the shares held in street name. As a beneficial owner, you have the right to direct your nominee on how to vote the shares held in your account, and your nominee has enclosed or provided voting instructions for you to use in directing it on how to vote your shares. However, the organization that holds your shares is considered the stockholder of record for purposes of voting at the Annual Meeting. Because you are not the stockholder of record, you may not vote your shares at the Annual Meeting unless you request and obtain a valid proxy from the organization that holds your shares giving you the right to vote the shares at the Annual Meeting.

Each director will be elected by a plurality of the votes cast, which means that the two individuals nominated for election to the board of directors at the Annual Meeting receiving the highest number of “FOR” votes will be elected. You may either vote “FOR” one or any of the nominees or “WITHHOLD” your vote with respect to one or any of the nominees. Ratification of PricewaterhouseCoopers LLP as our independent registered public accounting firm for the fiscal year ended December 31, 2020 will be obtained if the number of votes cast “FOR” the proposal at the Annual Meeting exceeds the number of votes cast “AGAINST” the proposal.

Broker non-votes occur when a broker, bank or other nominee holding shares for a beneficial owner does not vote on a particular matter because such broker, bank or other nominee does not have discretionary authority to vote on that matter and has not received voting instructions from the beneficial owner. Brokers, banks and other nominees typically do not have discretionary authority to vote on non-routine matters. Broker non-votes are counted for purposes of determining whether a quorum is present, and have no effect on the outcome of the matters voted upon. Under the rules and interpretations of The Nasdaq Stock Market Listing Rules, “non-routine” matters are matters that may substantially affect the rights or privileges of stockholders, such as mergers, stockholder proposals, elections of directors, executive compensation and certain corporate governance proposals, even if management-supported. At our Annual Meeting, only ratification of the appointment of our independent registered public accounting firm is considered a “routine” matter. Note that if you are a beneficial holder and do not provide specific voting instructions to your broker, the broker that holds your shares will not have discretionary authority to vote on the election of directors. Accordingly, we encourage you to provide voting instructions to your broker, whether or not you plan to attend the meeting.

Recommendations of the Board of Directors on Each of the Proposals Scheduled to be Voted on at the Annual Meeting

The board of directors recommends that you vote “FOR” each of the Class I directors named in this Proxy Statement (“**Proposal No. 1**”) and “FOR” the ratification of the appointment of PricewaterhouseCoopers LLP as our independent registered public accounting firm for the fiscal year ending December 31, 2020 (“**Proposal No. 2**”). None of the directors or executive officers has any substantial interest in any matter to be acted upon, other than elections to office with respect to the directors so nominated.

Voting Instructions; Voting of Proxies

If you are a stockholder of record, you may:

- vote in person—we will provide a ballot to stockholders who attend the Annual Meeting and wish to vote in person;
- vote via telephone or Internet—in order to do so, please follow the instructions shown on your proxy card; or
- vote by mail—complete, sign and date the proxy card enclosed herewith and return it before the Annual Meeting in the envelope provided.

Votes submitted by telephone or Internet must be received by 11:59 p.m. Eastern Time on June 7, 2020. Submitting your proxy, whether via the Internet, by telephone, or by mail, will not affect your right to vote in person should you decide to attend the Annual Meeting. If you are not the stockholder of record, please refer to the voting instructions provided by your nominee to direct it how to vote your shares. You may either vote “FOR” all of the nominees to the board of directors, or you may withhold your vote from any nominee you specify. For any other matter to be voted on you may vote “FOR” or “AGAINST” or “ABSTAIN” from voting. Your vote is important. Whether or not you plan to attend the Annual Meeting, we urge you to vote by proxy to ensure that your vote is counted.

In light of the evolving COVID-19 situation, we strongly recommend that you vote your shares in advance of the Annual Meeting as instructed above, even if you plan to attend the Annual Meeting.

All proxies will be voted in accordance with the instructions specified on the proxy card. If you sign a physical proxy card and return it without instructions as to how your shares should be voted on a particular proposal at the Annual Meeting, your shares will be voted in accordance with the recommendations of our board of directors stated above.

If you do not vote and you hold your shares in street name, and your broker does not have discretionary power to vote your shares, your shares may constitute “broker non-votes” (as described above) and will not be counted in determining the number of

shares necessary for approval of the proposals. However, shares that constitute broker non-votes will be counted for the purpose of establishing a quorum for the Annual Meeting.

If you receive more than one proxy card, your shares are registered in more than one name or are registered in different accounts. To make certain all of your shares are voted, please follow the instructions included on each proxy card and vote each proxy card by telephone, through the Internet or by mail. If you are voting by mail, please complete, sign and return each proxy card to ensure that all of your shares are voted.

Expenses of Soliciting Proxies

Aeglea will pay the expenses of soliciting proxies. Following the original mailing of the soliciting materials, Aeglea and its agents, including directors, officers and other employees, without additional compensation, may solicit proxies by mail, electronic mail, telephone, facsimile, by other similar means, or in person. Following the original mailing of the soliciting materials, Aeglea will request brokers, custodians, nominees and other record holders to forward copies of the soliciting materials to persons for whom they hold shares and to request authority for the exercise of proxies. In such cases, Aeglea, upon the request of the record holders, will reimburse such holders for their reasonable expenses. If you choose to access the proxy materials and/or vote through the Internet, you are responsible for any Internet access charges you may incur.

Revocability of Proxies

A stockholder who has given a proxy may revoke it at any time before it is exercised at the Annual Meeting by:

- delivering to the Corporate Secretary of Aeglea (by any means, including facsimile) a written notice stating that the proxy is revoked;
- signing and delivering a proxy bearing a later date;
- voting again by telephone or Internet; or
- attending and voting at the Annual Meeting (although attendance at the Annual Meeting will not, by itself, revoke a proxy).

Please note, however, that if your shares are held of record by a broker, bank or other nominee and you wish to revoke a proxy, you must contact that broker, bank, or other nominee to revoke any prior voting instructions.

Voting Results

Voting results will be tabulated and certified by the inspector of elections appointed for the Annual Meeting. The preliminary voting results will be announced at the Annual Meeting. The final results will be tallied by the inspector of elections and filed with the Securities and Exchange Commission (“SEC”) in a current report on Form 8-K within four business days of the Annual Meeting.

Implications of Being an “Emerging Growth Company” and “Smaller Reporting Company”

We are an “emerging growth company” as that term is used in the Jumpstart Our Business Startups Act of 2012, and a Smaller Reporting Company” as defined under Rule 405 of the Securities Act of 1933, and, as such, have elected to comply with certain reduced public company reporting requirements. These reduced reporting requirements include reduced disclosure about the company’s executive compensation arrangements and no requirement to have non-binding advisory votes on executive compensation.

**BOARD OF DIRECTORS AND COMMITTEES OF THE BOARD;
CORPORATE GOVERNANCE STANDARDS AND DIRECTOR INDEPENDENCE**

Aeglea is strongly committed to good corporate governance practices. These practices provide an important framework within which our board of directors and management can pursue our strategic objectives for the benefit of our stockholders.

Corporate Governance Guidelines

Our board of directors has adopted corporate governance guidelines that set forth the role of the board of directors, director independence standards, board structure and functions, director selection considerations, and other policies for the governance of the company (“**Corporate Governance Guidelines**”). Our Corporate Governance Guidelines are available by clicking on “Governance Highlights” in the Investors section of our website, which is located at <http://ir.aegleabio.com>. Our nominating and corporate governance committee reviews the Corporate Governance Guidelines periodically, and recommends changes to our board of directors as warranted.

Board Leadership Structure

Our Corporate Governance Guidelines provide that our board of directors shall be free to choose its chairperson in any way that it considers in the best interests of our company, and that the nominating and corporate governance committee shall periodically consider the leadership structure of our board of directors and make such recommendations to the board of directors with respect thereto as the nominating and corporate governance committee deems appropriate. Our Corporate Governance Guidelines also provide that, when the positions of chairperson and Chief Executive Officer are held by the same person, the independent directors may designate a “lead independent director.” In cases in which the chairperson and Chief Executive Officer are the same person, the chairperson schedules and sets the agenda for meetings of the board of directors in consultation with the lead independent director, and the chairperson, or if the chairperson is not present, the lead independent director, chairs such meetings. In addition, the responsibilities of the lead independent director include: presiding over executive sessions of independent directors; serving as a liaison between the chairperson and the independent directors; being available, under appropriate circumstances, for consultation and direct communication with stockholders; and performing such other functions and responsibilities as requested by the board of directors from time to time.

Our board of directors believes that Aeglea and our stockholders are best served by having an independent director serve as our non-executive Chairman. Since January 2019, Mr. Cox has served as non-executive Chairman of our board of directors. Our board of directors believes that the current board leadership structure provides effective independent oversight of management while allowing the board and management to benefit from its members’ extensive financial and business expertise in the biotechnology industry. Our board of directors believes that its independence and oversight of management is maintained effectively through this leadership structure, the composition of the board of directors and sound corporate governance policies and practices.

Our Board of Directors’ Role in Risk Oversight

Our board of directors, as a whole, has responsibility for risk oversight, although the committees of our board of directors oversee and review risk areas that are particularly relevant to them. The risk oversight responsibility of our board of directors and its committees is supported by our management reporting processes, which are designed to provide visibility to the board of directors and to our personnel that are responsible for risk assessment and information about the identification, assessment and management of critical risks and management’s risk mitigation strategies. These areas of focus include, but are not limited to, competitive, economic, operational, financial (accounting, credit, liquidity, and tax), legal, regulatory, compliance and reputational risks.

Each committee of the board of directors meets in executive session with key management personnel and representatives of outside advisors to oversee risks associated with their respective principal areas of focus. The audit committee reviews our major financial risk exposures and the steps management has taken to monitor and control such exposures, including our risk assessment and risk management policies and guidelines. The compensation committee reviews risks and exposures associated with compensation programs and arrangements, including incentive plans. The nominating and corporate governance committee, together with the audit committee, reviews our major legal compliance risk exposures and monitors the processes put in place by management to mitigate these exposures, including our legal risk assessment and legal risk management policies and guidelines.

Director Independence

Our board of directors determines the independence of our directors by applying the applicable rules, regulations and listing standards of The Nasdaq Global Market (“**Nasdaq**”). These provide that a director is independent only if the board affirmatively determines that the director does not have a relationship with the company which, in the opinion of the board of directors, would interfere with the exercise of his or her independent judgment in carrying out the responsibilities of a director. They also specify various relationships that preclude a determination of director independence. Such relationships may include employment, commercial, accounting, family and other business, professional and personal relationships.

Applying these standards, the board annually reviews the independence of our directors, taking into account all relevant facts and circumstances. In its most recent review, our board of directors considered, among other things, the relationships that each non-employee director has with our company and all other facts and circumstances our board of directors deemed relevant in determining their independence, including the beneficial ownership of our capital stock by each non-employee director.

Based upon this review, our board of directors has determined that the following members of our board are currently independent as determined under applicable rules, regulations and listing standards of Nasdaq: Mr. Russell Cox, Mr. Sandesh Mahatme, Dr. Armen Shanafelt, Dr. Ivana Magovcevic-Liebisch, Dr. Suzanne Bruhn and Dr. Bryan Lawlis. All members of our audit committee, compensation committee and nominating and corporate governance committee must be independent directors under the applicable rules, regulations and listing standards of Nasdaq, subject to Nasdaq's phase-in rules. Members of the audit committee also must satisfy the independence criteria set forth in Rule 10A-3 under the Securities Exchange Act of 1934, as amended ("Exchange Act"). Members of the compensation committee also must satisfy the independence criteria set forth in Rule 10C under the Exchange Act, and a related Nasdaq listing standard with respect to their affiliation with Aeglea and any consulting, advisory or other fees they may have received from Aeglea. Our board of directors has determined that all members of our audit committee, compensation committee and nominating and corporate governance committee are independent and satisfy the relevant SEC and Nasdaq independence requirements for such committees.

Board Committees

Our board of directors has established an audit committee, a compensation committee and a nominating and corporate governance committee. The composition and responsibilities of each committee are described below. Each of these committees has a written charter approved by our board of directors. Copies of the charters for the audit committee, compensation committee and nominating and corporate governance committee are available, without charge, upon request in writing to Aeglea BioTherapeutics, Inc., 805 Las Cimas Parkway, Suite 100, Austin, Texas 78746, Attn: Corporate Secretary or by clicking on "Governance Highlights" in the Investors section of our website at <http://ir.aegleabio.com>. Members serve on these committees until their resignations or until otherwise determined by our board of directors.

Audit Committee

Our audit committee is comprised of Mr. Mahatme, who is the chair of the audit committee, Dr. Magovcevic-Liebisch and Dr. Lawlis. The members of our audit committee meet the requirements for independence under current Nasdaq and SEC rules, regulations and listing standards. Each member of our audit committee is financially literate as required by Nasdaq listing standards. In addition, our board of directors has determined that Mr. Mahatme is an audit committee financial expert within the meaning of Item 407(d) of Regulation S-K under the Securities Act of 1933, as amended. This designation does not impose on him any duties, obligations or liabilities that are greater than those that are generally imposed on members of our audit committee and our board of directors. Our audit committee is directly responsible for, among other things:

- selecting a firm to serve as the independent registered public accounting firm to audit our consolidated financial statements;
- ensuring the independence of the independent registered public accounting firm;
- discussing the scope and results of the audit with the independent registered public accounting firm, and reviewing, with management and that firm, our interim and year-end operating results;
- establishing procedures for employees to anonymously submit concerns about questionable accounting or audit matters;
- considering the adequacy of our internal controls;
- reviewing material related party transactions or those that require disclosure; and
- approving or, as permitted, pre-approving all audit and non-audit services to be performed by the independent registered public accounting firm.

Compensation Committee

Our compensation committee is comprised of Mr. Cox, who is the chair of the compensation committee, Mr. Mahatme and Dr. Bruhn. The composition of our compensation committee meets the requirements for independence under current Nasdaq and SEC rules, regulations and listing standards. Each member of this committee is also a non-employee director, as defined pursuant to Rule 16b-3 promulgated under the Exchange Act and is "independent" as defined in Section 5605(a)(2) of the Nasdaq rules and Rule 10C-1 promulgated under the Exchange Act. The purpose of our compensation committee is to discharge the responsibilities of our board of directors relating to compensation of our executive officers. Our compensation committee is responsible for, among other things:

- reviewing and approving, or recommending that our board of directors approve, the compensation of our executive officers;
- reviewing and recommending to our board of directors the compensation of our directors;

- reviewing and recommending to our board of directors the terms of any compensatory agreements with our executive officers;
- administering our stock and equity incentive plans;
- reviewing and approving, or making recommendations to our board of directors with respect to, incentive compensation and equity plans; and
- reviewing our overall compensation philosophy.

The compensation committee has the sole authority and responsibility, subject to any approval by the board of directors which the compensation committee or legal counsel determines to be desirable or required by applicable law or the Nasdaq rules, to determine all aspects of executive compensation packages for the Chief Executive Officer and other executive officers. The compensation committee also makes recommendations to our board of directors regarding the form and amount of compensation of non-employee directors. The compensation committee may take into account the recommendations of the Chief Executive Officer with respect to compensation of the other executive officers, and the recommendations of the board of directors or any member of the board of directors with respect to compensation of the Chief Executive Officer and other executive officers.

The compensation committee engaged Compensia, a national compensation consulting firm (“**Compensia**”), to evaluate our executive compensation program, policies, and practices and provide advice and ongoing assistance on executive compensation matters for fiscal year 2019. Specifically, Compensia was engaged to:

- provide executive compensation-related data for a peer group of companies to serve as a basis for assessing competitive compensation practices;
- review and evaluate our current compensation program, policies and practices for our Chief Executive Officer and other executive officers relative to competitive market practices;
- review and evaluate our current compensation program, policies and practices for the non-employee members of our Board of Directors relative to competitive market practices;
- review and evaluate our current executive compensation program relative to market practices to identify any potential changes or enhancements to be brought to the attention of the compensation committee; and
- review market practices on employee stock purchase plans and other equity compensation programs.

Representatives of Compensia met informally with the chair of the compensation committee and attended the regular meetings of the compensation committee, including executive sessions from time to time without any members of management present. During fiscal year 2019, Compensia worked directly with the compensation committee (and not on behalf of management) to assist the committee in satisfying its responsibilities and undertook no projects for management without the committee’s prior approval. The compensation committee has evaluated Compensia’s engagement, and based on the six factors for assessing independence and identifying potential conflicts of interest that are set forth in Exchange Act Rule 10C-1(b)(4), Rule 5605(d)(3)(D) of the Nasdaq Stock Market listing rules, and such other factors as were deemed relevant under the circumstances, has determined that its relationship with Compensia and the work performed by Compensia during fiscal year 2019 on behalf of the compensation committee did not raise any conflict of interest.

Nominating and Corporate Governance Committee

Our nominating and corporate governance committee is comprised of Dr. Bruhn, who is the chair of the nominating and corporate governance committee, Dr. Magovcevic-Liebisch and Dr. Shanafelt. The composition of our nominating and corporate governance committee meets the requirements for independence under current Nasdaq and SEC rules, regulations and listing standards. Our nominating and corporate governance committee is responsible for, among other things:

- identifying and recommending candidates for membership on our board of directors;
- recommending directors to serve on board committees;
- reviewing and recommending our Corporate Governance Guidelines and policies;
- reviewing proposed waivers of the code of conduct for directors and executive officers;
- evaluating, and overseeing the process of evaluating, the performance of our board of directors and individual directors; and
- assisting our board of directors on corporate governance matters.

Compensation Committee Interlocks and Insider Participation

During 2019, Mr. Cox, Mr. Mahatme and Dr. Bruhn served on our Compensation Committee. No other member of our compensation committee in 2019 was at any time during 2019 or previously an officer or employee of Aeglea or any of its subsidiaries, and none had or have any relationships with Aeglea that are required to be disclosed under Item 404 of Regulation S-K. None of our executive officers has served as a member of the board of directors, or as a member of the compensation or similar committee, of any entity that has one or more executive officers who served on our board of directors or compensation committee during fiscal year 2019.

Code of Business Conduct and Ethics

We have adopted a Code of Conduct and Ethics that applies to all of our employees, officers and directors, including our Chief Executive Officer and other executive officers. The full text of our Code of Conduct and Ethics is available on the Investor Relations section of our website located at <http://ir.aegleabio.com> by clicking on "Governance Highlights." Any amendments or waivers of our Code of Conduct and Ethics pertaining to a member of our board of directors or one of our executive officers will be disclosed on our website at the above-referenced address.

Anti-hedging

We have adopted an Insider Trading Policy that applies to all of our employees, officers and directors, including our Chief Executive Officer and other executive officers, which prohibits such individuals from purchasing financial instruments, or otherwise engaging in transactions, that hedge or offset, or are designed to hedge or offset, any decrease in market value of our common stock, such as prepaid variable forward contracts, equity swaps, collars, forward sale contracts and exchange funds.

Board and Committee Meetings and Attendance

Our board of directors and its committees meet throughout the year on a set schedule, and also hold special meetings and act by written consent from time to time. During fiscal year 2019, our board of directors met 8 times, including telephonic meetings, the audit committee held 4 meetings, the compensation committee held 6 meetings and the nominating and corporate governance committee held 5 meetings. None of the directors attended fewer than 75% of the aggregate of the total number of meetings held by the board of directors and the total number of meetings held by all committees of the board of directors on which such director served (during the period that such director served on the board of directors and any committee).

Board Attendance at Annual Stockholders' Meeting

Our policy is to invite and encourage each member of our board of directors to be present at our annual meetings of stockholders. Dr. Quinn, Dr. Bruhn, Mr. Mahatme, Dr. Shanafelt, Mr. Cox, Dr. Magovcevic-Liebisch, and Dr. Lawlis attended the 2019 annual meeting of stockholders.

Presiding Director of Non-Employee Director Meetings

The non-employee directors meet in regularly scheduled executive sessions without management to promote open and honest discussion, led by our non-executive Chairman, Mr. Cox.

Communication with Directors

Stockholders and interested parties who wish to communicate with our board of directors, non-management members of our board of directors as a group, a committee of the board of directors or a specific member of our board of directors (including our Chairman or lead independent director, if any) may do so by letters addressed to the attention of our Compliance Officer.

All communications are reviewed by the Compliance Officer and provided to the members of the board of directors consistent with a screening policy providing that unsolicited items, sales materials, abusive, threatening or otherwise inappropriate materials and other routine items and items unrelated to the duties and responsibilities of the board of directors not be relayed on to directors. Any communication that is not relayed is recorded in a log and made available to our board of directors.

The address for these communications is:

Aeglea BioTherapeutics, Inc.
c/o Corporate Secretary
805 Las Cimas Parkway
Suite 100
Austin, TX 78746

Nomination to the Board of Directors

Candidates for nomination to our board of directors are selected by our board of directors based on the recommendation of the nominating and corporate governance committee in accordance with the committee's charter, our certificate of incorporation and bylaws, our Corporate Governance Guidelines, and the criteria adopted by the board of directors regarding director candidate qualifications. In recommending candidates for nomination, the nominating and corporate governance committee considers candidates recommended by directors, officers, employees, stockholders and others, using the same criteria to evaluate all candidates. Evaluations of candidates generally involve a review of background materials, internal discussions and interviews with selected candidates as appropriate and, in addition, the committee may engage consultants or third-party search firms to assist in identifying and evaluating potential nominees.

The nominating and corporate governance committee will consider properly submitted stockholder recommendations for candidates for our board of directors who meet the qualifications as described above. The nominating and corporate governance committee does not intend to alter the manner in which it evaluates candidates, including the criteria set forth below, based on whether or not the candidate was recommended by a stockholder. A stockholder of record can nominate a candidate for election to the board of directors by complying with the procedures in Article I, Section 1.11 of our bylaws. Submissions must include the full name of the proposed nominee, complete biographical information, a description of the proposed nominee's qualifications as a director, other information specified in our bylaws, and a representation that the nominating stockholder is a beneficial or record holder of our stock. Any such submission must be accompanied by the written consent of the proposed nominee to be named as a nominee and to serve as a director if elected. These candidates are evaluated at meetings of the nominating and corporate governance committee, and may be considered at any point during the year. If any materials are provided by a stockholder in connection with the recommendation of a director candidate, such materials are forwarded to the nominating and corporate governance committee.

Additional information regarding the process for properly submitting stockholder nominations for candidates for membership on our board of directors is set forth below under "Stockholder Proposals to Be Presented at Next Annual Meeting."

Director Qualifications

With the goal of developing a diverse, experienced and highly qualified board of directors, the nominating and corporate governance committee is responsible for developing and recommending to the board of directors the desired qualifications, expertise and characteristics of members of our board of directors, including any specific minimum qualifications that the committee believes must be met by a committee-recommended nominee for membership on the board of directors and any specific qualities or skills that the committee believes are necessary for one or more of the members of the board of directors to possess.

Since the identification, evaluation and selection of qualified directors is a complex and subjective process that requires consideration of many intangible factors, and will be significantly influenced by the particular needs of the board of directors from time to time, our board of directors has not adopted a specific set of minimum qualifications, qualities or skills that are necessary for a nominee to possess, other than those that are necessary to meet U.S. legal, regulatory and Nasdaq listing requirements and the provisions of our certificate of incorporation, bylaws, Corporate Governance Guidelines, and charters of the board committees. In addition, neither the board of directors nor the nominating and corporate governance committee has a formal policy with regard to the consideration of diversity in identifying nominees. When considering nominees, the nominating and corporate governance committee may take into consideration many factors including, among other things, a candidate's independence, integrity, skills, financial and other expertise, breadth of experience, knowledge about our business or industry and ability to devote adequate time and effort to responsibilities of the board of directors in the context of its existing composition. Through the nomination process, the nominating and corporate governance committee seeks to promote board membership that reflects a diversity of business experience, expertise, viewpoints, personal backgrounds and other characteristics that are expected to contribute to the board of directors' overall effectiveness. A nominee's self-identified diversity characteristics will also be considered by the board of directors in accordance with the factors described above. The brief biographical description of each director set forth in Proposal No. 1 below includes the primary individual experience, qualifications, attributes and skills of each of our directors that led to the conclusion that each director should serve as a member of our board of directors at this time.

ELECTION OF DIRECTORS

Our board of directors currently consists of seven directors and is divided into three classes. Each class serves for three years, with the terms of office of the respective classes expiring in successive years. Directors in Class I will stand for election at our Annual Meeting to be held on June 8, 2020. The terms of office of directors in Class II and Class III do not expire until the annual meetings of stockholders held in 2021 and 2022, respectively. At the recommendation of our nominating and corporate governance committee, our board of directors proposes that each of the two Class I nominees named below, each of whom is currently serving as a director in Class I, be elected as a Class I director for a three-year term expiring at the 2023 annual meeting of stockholders and until such director’s successor is duly elected and qualified or until such director’s earlier resignation or removal.

Shares represented by proxies will be voted “FOR” the election of each of the two nominees named below, unless the proxy is marked to withhold authority to so vote. If any nominee for any reason is unable to serve or for good cause will not serve, the proxies may be voted for such substitute nominee as the proxy holder might determine. Each nominee has consented to being named in this Proxy Statement and to serve if elected.

Nominees to the Board of Directors

The nominees, and their ages, occupations and length of board service as of March 31, 2020, are provided in the table below. Additional biographical descriptions of each nominee are set forth in the text below the table. These descriptions include the primary individual experience, qualifications, qualities and skills of each of our nominees that led to the conclusion that each director should serve as a member of our board of directors at this time.

| <u>Name of Director/Nominee</u> | <u>Age</u> | <u>Principal Occupation</u> | <u>Director Since</u> |
|---------------------------------|------------|---|-----------------------|
| Sandesh Mahatme.(1)(2) | 55 | Executive Vice President, Chief Financial Officer, and Chief Business Officer, Sarepta Therapeutics, Inc. | 2015 |
| Suzanne Bruhn, Ph.D.(2)(3) | 56 | President and Chief Executive Officer, Tiaki Therapeutics, Inc. | 2017 |

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- (1) Member of the audit committee
 - (2) Member of the compensation committee
 - (3) Member of the nominating and corporate governance committee

Sandesh Mahatme. Mr. Mahatme has served as a director since June 2015. Since November 2012, Mr. Mahatme has served in various executive positions, including as Executive Vice President, Chief Financial Officer, and Chief Business Officer at Sarepta Therapeutics, Inc., a publicly traded biopharmaceutical company. From January 2006 to November 2012, Mr. Mahatme worked at Celgene Corporation, a publicly traded biopharmaceutical company, where he served in various roles, including Senior Vice President of Corporate Development, Senior Vice President of Finance, Corporate Treasurer and Head of Tax. From 1997 to 2005 Mr. Mahatme worked for Pfizer Inc., a pharmaceutical company, where he served in senior roles in business development and corporate tax. Mr. Mahatme currently serves on the boards of directors of Flexion Therapeutics, Inc. and Elcelyx Therapeutics, Inc., both biopharmaceutical companies. Mr. Mahatme earned LL.M. degrees from Cornell Law School and NYU School of Law and is a member of the New York State Bar Association. We believe Mr. Mahatme is qualified to serve on our board of directors because of his experience in the pharmaceutical industry and financial expertise.

Suzanne Bruhn, Ph.D. Dr. Bruhn has served as a director since February 2017. Dr. Bruhn has served as President and Chief Executive Officer of Tiaki Therapeutics Inc. since May 2019. Dr. Bruhn previously served as President and Chief Executive Officer of Proclara Biosciences, Inc. between April 2017 and September 2018. Dr. Bruhn previously served as President and Chief Executive Officer of Promedior, Inc. between May 2012 and November 2015. Prior to that, Dr. Bruhn served as Senior Vice President, Strategic Planning and Program Management at Shire plc, a publicly traded biopharmaceutical company, between December 1998 and February 2012. Dr. Bruhn previously served on the boards of directors of Raptor Pharmaceuticals Corp. and Novelion Therapeutics, Inc., both publicly traded pharmaceutical companies, Dr. Bruhn currently serves on the boards of directors of Pliant Therapeutics and Retrophin, Inc. Dr. Bruhn received her B.S. degree in Chemistry from Iowa State University and her Ph.D. in Chemistry from Massachusetts Institute of Technology. We believe Dr. Bruhn is qualified to serve on our board of directors because of her expertise and experience in the biopharmaceutical industry, including her expertise in the development and commercialization of treatments for rare diseases.

Continuing Directors

The directors who are serving for terms that end following the Annual Meeting, and their ages, occupations and length of board service as of March 31, 2020, are provided in the table below. Additional biographical descriptions of each such director are set forth in the text below the table. These descriptions include the primary individual experience, qualifications, qualities and skills of each of our nominees that led to the conclusion that each director should serve as a member of our board of directors at this time.

| Name of Director | Age | Principal Occupation | Director Since |
|--|-----|---|----------------|
| Class II Directors: | | | |
| Russell Cox ⁽²⁾ | 56 | President and Chief Executive Officer, Epirium Bio, Inc. | 2015 |
| Ivana Magovcevic-Liebisch, Ph.D. ⁽¹⁾⁽³⁾ | 52 | Executive Vice President, Chief Business Officer, Ipsen | 2018 |
| Class III Directors: | | | |
| Armen Shanafelt, Ph.D. ⁽³⁾ | 60 | General Partner, Lilly Ventures | 2013 |
| V. Bryan Lawlis, Ph.D. ⁽¹⁾ | 68 | Director, Biomarin Pharmaceutical, Inc; Director, Coherus Biosciences, Inc; Director, Geron Corporation | 2018 |
| Anthony G. Quinn, M.B Ch.B, Ph.D. | 58 | President and Chief Executive Officer, Aeglea | 2016 |

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- (1) Member of the audit committee
(2) Member of the compensation committee
(3) Member of the nominating and corporate governance committee

Russell J. Cox. Mr. Cox has served as a director since June 2015 and has served as Chairman of our board since January 2019. Mr. Cox has served as President and Chief Executive Officer of Epirium Bio, Inc. since July 2019. Mr. Cox previously served as Chief Executive Officer at Vital Therapies, Inc. from January 2018 to January 2019. Additionally, Mr. Cox served as Executive Vice President and Chief Operating Officer at Jazz Pharmaceuticals plc, a publicly traded biopharmaceutical company, from May 2014 to January 2018, where he also served as Executive Vice President and Chief Commercial Officer from March 2012 to May 2014 and as Senior Vice President, Sales and Marketing from July 2010 until February 2012. Prior to that, Mr. Cox served in a variety of senior management roles since joining Jazz Pharmaceuticals, Inc. (the predecessor to Jazz Pharmaceutical plc) in July 2010. From January 2009 to January 2010, he was Senior Vice President and Chief Commercial Officer of Ipsen Group, a publicly traded pharmaceutical company, and from 2007 until December 2008, he was Vice President of Marketing at Tercica, Inc. (acquired by Ipsen Group), a biotechnology company. From 2003 to 2007, Mr. Cox was with Scios Inc. (acquired by Johnson and Johnson in 2003), where he also held the role of Vice President, Marketing. Prior to 2003, Mr. Cox was with Genentech, Inc. for 12 years, where he was a Product Team Leader responsible for the Growth Hormone franchise and led numerous product launches as a Group Product Manager. Mr. Cox currently serves on the boards of directors of Vital Therapies, Inc. and Gossamer Bio. Mr. Cox received a B.S. in Biomedical Science from Texas A&M University. We believe Mr. Cox is qualified to serve on our board of directors due to his commercial and operating experience in the biopharmaceutical industry.

Ivana Magovcevic-Liebisch, Ph.D. Dr. Magovcevic-Liebisch has served as a director since March 2018. Dr. Magovcevic-Liebisch has served as Executive Vice President, Chief Business Officer for Ipsen since March 2018. From May 2017 through March 2018, Dr. Magovcevic-Liebisch served as Executive Vice President, Chief Strategy and Corporate Development Officer for Axcella Health Inc. From April 2013 through May 2017, Dr. Magovcevic-Liebisch served as Senior Vice President, Head of Global Business Development for Teva Pharmaceutical Industries Ltd. Prior to joining Teva, Dr. Magovcevic-Liebisch held several senior positions within Dyax Corp., or Dyax, from April 2001 through March 2013, most recently serving as Executive Vice President and Chief Operating Officer. Dr. Magovcevic-Liebisch currently serves on the board of directors of Applied Genetic Technologies Corporation, a biotechnology company, as well as several other private companies. Dr. Magovcevic-Liebisch received her J.D. from Suffolk University Law School and her Ph.D. in genetics from Harvard University. We believe that Dr. Magovcevic-Liebisch's extensive experience in biopharmaceutical business development and operations qualify her to serve as a member of our board of directors.

Armen Shanafelt, Ph.D. Dr. Shanafelt has served as a director since December 2013 and served as Chairman of our board of directors from 2014 to 2019. Dr. Shanafelt has served as venture partner, then general partner, of Lilly Ventures, a venture capital firm. Prior to joining Lilly Ventures, Dr. Shanafelt was one of several Chief Science Officers at Eli Lilly and Company, a pharmaceutical research company, specifically responsible for the generation of the early biotherapeutic pipeline which spanned the

therapeutic areas of oncology, endocrine and neuroscience. Dr. Shanafelt also serves on the board of directors of Surface Oncology, Inc. Dr. Shanafelt previously served on the boards of directors of Aileron Therapeutics, Inc., Protagonist Therapeutics, Inc., Sutro Biopharma, Inc., and Symic Bio. Dr. Shanafelt received his B.S. in Chemistry and Physics from Pacific Lutheran University and his Ph.D. in Chemistry from the University of California, Berkeley. He completed his postdoctoral work at DNAX Research Institute. He is a Kauffman Fellow (Class 14). We believe that Dr. Shanafelt is qualified to serve on our board of directors because of his experience in the pharmaceutical and biotechnology businesses, including his expertise with respect to the generation of early biotherapeutic pipelines and his investment and board experience while a partner with Lilly Ventures.

V. Bryan Lawlis, Ph.D., has served as a member of our board of directors since July 2018. Dr. Lawlis served as the President and Chief Executive Officer of Itero Holdings, LLC from 2011 to 2017 and of the predecessor company, Itero Biopharmaceuticals, Inc from 2007 to 2011, a pharmaceutical company focused on protein therapeutics. Previously, he served in various senior management positions at Aradigm Corporation, Covance Biotechnology Services, Inc. and Genentech, Inc. Dr. Lawlis is also an advisor for Phoenix Venture Partners, a venture capital firm that invests in material science and manufacturing technology. Dr. Lawlis currently serves on the boards of directors at BioMarin Pharmaceutical Inc., Geron, Inc., and Coherus Biosciences, Inc., as well as on the boards of directors of several private companies. Dr. Lawlis previously served on the boards of directors of Sutro Biopharma, Inc. and Kalobios, Inc. Dr. Lawlis holds a B.A. in Microbiology from the University of Texas at Austin and a Ph.D. in Biochemistry from Washington State University. We believe that Dr. Lawlis is qualified to serve on our board of directors because of his longtime involvement in the biotechnology industry and extensive service as a director or officer of other life sciences companies.

Anthony G. Quinn, M.B Ch.B, Ph.D. Dr. Quinn has served as a director since March 2016, and has served as our President and Chief Executive Officer since July 2018. Dr. Quinn previously served as our interim Chief Medical Officer between April 2017 and July 2017 and served as our interim Chief Executive Officer between July 2017 and July 2018. Since October 2015, Dr. Quinn has worked as a private consultant for IDBioPharm Consulting LLC. From August 2009 to June 2015, Dr. Quinn served as Head of Research & Development and Chief Medical Officer initially at the Senior Vice President level and subsequently at the Executive Vice President level for Synageva BioPharma Corp., a publicly traded biopharmaceutical company that was acquired by Alexion Pharmaceuticals, Inc. in June 2015. Following the acquisition, Dr. Quinn worked for Alexion Pharmaceuticals from June 2015 to September 2015. Dr. Quinn currently serves on the boards of directors at Kaleido Biosciences, Inc and a private company. Dr. Quinn received a B.MSc in General Pathology and a M.B Ch.B in Medicine from the University of Dundee. Dr. Quinn later earned a Ph.D. in Cancer Research from the University of Newcastle upon Tyne. We believe Dr. Quinn is qualified to serve on our board of directors because of his medical and clinical experience in the biopharmaceutical industry, including the development of therapeutics for rare diseases.

Family Relationships

There are no family relationships among our directors and officers.

Director Compensation

The following table provides information for the fiscal year ended December 31, 2019 regarding all compensation awarded to, earned by or paid to each person who served as a non-employee director for some portion of 2019. Dr. Quinn, our President and Chief Executive Officer, received compensation solely as an employee of the Company in 2019.

| Name | Fees Earned or Paid in Cash (\$) | Option Awards (\$)(1) | Total (\$) |
|----------------------------------|---|-----------------------------|---------------|
| Armen Shanafelt, Ph.D. | 43,135 | 48,809 | 91,944 |
| Sandesh Mahatme | 57,500 | 48,809 | 106,309 |
| Russell J. Cox | 80,865 | 48,809 | 129,674 |
| Suzanne Bruhn, Ph.D. | 50,500 | 48,809 | 99,309 |
| Ivana Magovcevic-Liebisch, Ph.D. | 49,000 | 48,809 | 97,809 |
| V. Bryan Lawlis, Ph.D. | 45,000 | 48,809 | 93,809 |

- (1) The amounts reported in this column represent the aggregate grant date fair value of the awards granted to our non-employee directors during the year ended December 31, 2019, as computed in accordance with Accounting Standards Codification Topic 718 (“ASC 718”). The assumptions used in calculating the grant date fair value of the awards reported in the Option Awards column are set forth in Note 10 to our consolidated financial statements included in our annual report on Form 10-K for the year ended December 31, 2019. Note that the amounts reported in this column reflect the aggregate accounting cost for these awards, and do not necessarily correspond to the actual economic value that may be received by the non-employee directors from the awards. For information regarding the number of stock options and restricted common stock held by each non-employee director as of December 31, 2019, see the table below.

Our non-employee directors held the following number of outstanding stock options as of December 31, 2019.

| <u>Name</u> | <u>Option Awards</u> |
|----------------------------------|----------------------|
| Armen Shanafelt, Ph.D. | 84,800 |
| V. Bryan Lawlis, Ph.D. | 49,200 |
| Sandesh Mahatme | 94,609 |
| Russell J. Cox | 94,609 |
| Suzanne Bruhn, Ph.D. | 112,800 |
| Ivana Magovcevic-Liebisch, Ph.D. | 49,200 |

Non-Employee Director Compensation Arrangements

Our non-employee directors received the following compensation pursuant to a program adopted by our board of directors:

Cash Compensation. The program provides an annual cash retainer of \$37,500 to each of our non-employee directors and an additional \$35,000 to the chairman of the board. The chair of our audit committee, compensation committee and nominating and corporate governance committee receives annual retainers of \$15,000, \$10,000 and \$8,000, respectively. Each non-chairperson member of our audit committee, compensation committee and nominating and corporate governance committee receives an annual cash retainer of \$7,500, \$5,000 and \$4,000, respectively. We do not pay fees to directors for attendance at meetings of our board of directors and its committees.

Equity Compensation.

Each new, non-employee director who joins our board of directors will receive an initial option grant for the purchase of 36,800 shares of our common stock upon election to our board of directors.

On the date of each annual meeting of stockholders, each non-employee director who continues to serve on our board of directors immediately following such meeting will receive an option grant for the purchase of 18,400 shares of our common stock, or such other amount as determined by our Board of Directors. On the date of the 2019 annual meeting of stockholders, our Board of Directors determined, in lieu of the equity compensation policy, to grant each non-employee director who continued to serve on our board of directors immediately following such meeting an option grant for the purchase of 12,400 shares of our common stock.

Equity awards for new directors will vest in equal monthly installments for three years after the grant date if the director has served continuously as a member of our board of directors through the applicable vesting date. Annual equity grants for directors will vest in equal monthly installments for one year after the grant date if the director has served continuously as a member of our board of directors through the applicable vesting date. In addition, equity awards for non-employee directors will vest in full in the event that we are subject to a change in control or upon certain other events.

Non-employee directors receive no other form of remuneration, perquisites or benefits, but are reimbursed for their reasonable travel expenses incurred in attending board and committee meetings.

OUR BOARD OF DIRECTORS RECOMMENDS A VOTE “FOR” ELECTION OF EACH OF THE TWO NOMINATED DIRECTORS

RATIFICATION OF APPOINTMENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Our audit committee has selected PricewaterhouseCoopers LLP as Aeglea’s independent registered public accounting firm to perform the audit of Aeglea’s financial statements for the fiscal year ending December 31, 2020 and recommends that stockholders vote for ratification of such selection. Although ratification by stockholders is not required by law, Aeglea has determined that it is good practice to request ratification of this selection by the stockholders. In the event that PricewaterhouseCoopers LLP is not ratified by our stockholders, the audit committee will review its future selection of PricewaterhouseCoopers LLP as Aeglea’s independent registered public accounting firm.

PricewaterhouseCoopers LLP audited Aeglea’s financial statements for Aeglea’s fiscal year ended December 31, 2019. Representatives of PricewaterhouseCoopers LLP are expected to be present at the Annual Meeting, in which case they will be given an opportunity to make a statement at the Annual Meeting if they desire to do so, and will be available to respond to appropriate questions.

Independent Registered Public Accounting Firm Fees and Services

We regularly review the services and fees from our independent registered public accounting firm. These services and fees are also reviewed with our audit committee annually.

The following table provides information regarding fees billed by PricewaterhouseCoopers LLP during the years ended December 31, 2019 and 2018:

| | 2019 | 2018 |
|-----------------------|-------------------|-------------------|
| Audit fees(1) | \$ 645,000 | \$ 476,000 |
| Audit related fees(2) | \$ — | \$ 50,000 |
| Tax fees(3) | \$ 71,000 | \$ 73,000 |
| All other fees(4) | \$ 1,000 | \$ — |
| Total fees | \$ 717,000 | \$ 599,000 |

- (1) “*Audit fees*” include fees billed for professional services primarily related to the audits of our 2019 and 2018 annual financial statements, the review of our quarterly financial statements, and related services that are normally provided in connection with registration statements, including the registration statement related to our follow-on public offerings in April 2018 and February 2019, respectively. Included in the 2019 audit fees are fees of \$90,000 related to our public offering in February 2019 and \$75,000 of comfort letter fees incurred to maintain availability of our at-the-market offering program. Included in the 2018 audit fees are fees of \$35,500 related to our public offering in April 2018 and \$35,000 related to our at-the-market offering in October 2018.
- (2) “*Audit-related fees*” include fees billed for assurance and related services reasonably related to the performance of the audit or review of our fiscal years 2019 and 2018 financial statements. Audit-related fees also include fees for grant-related agreed upon procedures and consultation concerning financial accounting and reporting standards not classified as audit fees.
- (3) “*Tax fees*” include fees for tax compliance and advice. Tax advice fees encompass a variety of permissible tax services, including technical tax advice related to federal and state income tax matters; assistance with sales tax; and assistance with tax audits; assistance with international tax planning; and assistance with the computation of eligible amounts of federal and state research tax credits and the federal orphan drug credit.
- (4) “*All Other fees*” includes database subscription fees paid to PwC.

The audit committee has considered whether the provision of non-audit services is compatible with maintaining the independence of PwC and has concluded that the provision of such services is compatible with maintaining such independence.

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

Our audit committee’s policy is to pre-approve all audit and permissible non-audit services provided by the independent registered public accounting firm regarding the extent of services provided by the independent registered public accounting firm in accordance with this pre-approval, and the fees for the services performed to date. These services may include audit services, audit-related services, tax services and other services. Pre-approval is detailed as to the particular service or category of services and is generally subject to a specific budget. The independent registered public accounting firm and management are required to report periodically to the audit committee regarding the extent of services provided by the independent registered public accounting firm in accordance with this pre-approval, and the fees for the services performed to date.

All of the services relating to the fees described in the table above were approved by our audit committee.

OUR BOARD OF DIRECTORS RECOMMENDS A VOTE “FOR” THE RATIFICATION OF PRICEWATERHOUSECOOPERS LLP AS OUR INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM FOR THE FISCAL YEAR ENDING DECEMBER 31, 2020

SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

The following table sets forth certain information with respect to the beneficial ownership of our common stock as of March 31, 2020, by:

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

We have determined beneficial ownership in accordance with the rules of the SEC, and the information is not necessarily indicative of beneficial ownership for any other purpose. Except as indicated by the footnotes below, we believe, based on information furnished to us, that the persons and entities named in the table below have sole voting and sole investment power with respect to all shares of common stock that they beneficially owned, subject to applicable community property laws.

Applicable percentage ownership is based on 29,147,461 shares of our common stock outstanding on March 31, 2020. In computing the number of shares of common stock beneficially owned by a person and the percentage ownership of that person, we deemed to be outstanding all shares of common stock subject to options held by that person or entity that are currently exercisable or that will become exercisable within 60 days of March 31, 2020. We did not deem these shares outstanding, however, for the purpose of computing the percentage ownership of any other person. Unless otherwise indicated, the address of each beneficial owner listed in the table below is c/o Aeglea BioTherapeutics, Inc. 805 Las Cimas Parkway, Suite 100, Austin, Texas 78746.

| Name of Beneficial Owner | Number of Shares Beneficially Owned | Percentage Owned |
|--|--|------------------|
| 5% Stockholders: | | |
| Nantahala Capital Management, LLC (1) | 2,852,260 | 9.8% |
| Entities affiliated with OrbiMed Private Investments V, LP (2) | 2,865,524 | 9.8 |
| Lilly Ventures Fund I LLC (3) | 2,568,543 | 8.8 |
| BlackRock, Inc.(4) | 1,922,215 | 6.6 |
| Entities affiliated with Baker Bros. Advisors LP(5) | 1,713,604 | 5.9 |
| Entities affiliated with Adage Capital Management, L.P.(6) | 1,468,591 | 5.0 |
| Directors and Named Executive Officers: | | |
| Anthony G. Quinn, M.B Ch.B, Ph.D. (7) | 653,310 | 2.2 |
| Charles N. York II (8) | 356,440 | 1.2 |
| Leslie Sloan, Ph.D. (9) | 120,562 | * |
| Armen Shanafelt, Ph.D. (10) | 2,652,309 | 9.1 |
| Sandesh Mahatme (11) | 93,575 | * |
| Russell J. Cox (12) | 100,575 | * |
| Suzanne Bruhn, Ph.D. (13) | 111,766 | * |
| Ivana Magovcevic-Liebisch, Ph.D. (14) | 37,943 | * |
| V. Bryan Lawlis, Ph.D.(15) | 33,854 | * |
| Total Executive Officers and Directors as a Group (11 people) (16) | 4,163,458 | 13.7% |

*Represents beneficial ownership of less than one percent.

- (1) Based on a Schedule 13G/A filed by Nantahala Capital Management, LLC (Nantahala) on February 13, 2020 with the SEC. Represents shares of common stock held by Nantahala. In February 2019, Blackwell Partners LLC, Nantahala Capital Partners II Limited Partnership, Nantahala Capital Partners Limited Partnership, and Nantahala Capital Partners SI, LP purchased 16,484, 63,588, 23,516, and 146,412 pre-funded warrants to purchase common stock, respectively, at a price of \$7.9999 per warrant share with an exercise price of \$0.0001 per share. The pre-funded warrants are only exercisable to the extent that the holders thereof and their affiliates would beneficially own no more than 4.99% of the outstanding common stock after exercise. The individual members (collectively, the Nantahala Members) of Nantahala are Daniel Mack and Wilmot Harkey. The Nantahala Members share voting and dispositive power with regard to the shares directly held by Nantahala. The Nantahala Members are deemed to have beneficial ownership over such shares. The mailing addresses of the beneficial owners are 130 Main Street, 2nd Floor, New Canaan, CT 06840.
- (2) Based solely on a Schedule 13G/A filed by OrbiMed Advisors LLC (OrbiMed) on February 14, 2020 with the SEC. Represents shares of common stock held by OrbiMed Private Investments V, LP (OPI V). OrbiMed Capital GP V LLC (GP V) is the sole general partner of OPI V and as such may be deemed to indirectly beneficially own the shares held by OPI V. OrbiMed, pursuant

to its authority as the sole managing member of GP V may be deemed to indirectly beneficially own the shares held by OPI V. GP V and OrbiMed have voting and dispositive power over the shares held by OPI V. OrbiMed exercises investment and voting power over the shares through a management committee comprised of Carl Gordon, Sven Borho and Jonathan Silverstein, each of whom disclaim beneficial ownership with respect to such shares, except to the extent of their pecuniary interest therein, if any. The address of OPI V is 601 Lexington Avenue, 54th Floor, New York, NY 10022.

- (3) Based solely on a Schedule 13G/A filed by Lilly Ventures Fund I, LLC on February 13, 2020 with the SEC. Represents shares of common stock held of record and beneficially by Lilly Ventures Fund I, LLC (LVFI). LV Management Group, LLC (LVMG) is the management company for LVFI and as such may be deemed to indirectly beneficially own the shares held by LVFI. LVMG has voting and dispositive power over the shares held by LVFI. LVMG's voting and dispositive decisions with respect to the shares held by LVFI are made by LVMG's management committee, which consists of S. Edward Torres, Steven E. Hall, Ph.D. and Armen B. Shanafelt, Ph.D. (collectively, the LVMG Members). As such, the LVMG Members are deemed to share voting and dispositive power with regard to the shares directly held by LVFI. The mailing addresses of the beneficial owners is 333 N. Alabama Street, Suite 350, Indianapolis, IN 46204.
- (4) Based solely on a Schedule 13G/A filed by BlackRock, Inc. on February 5, 2020 with the SEC. Represents shares of common stock beneficially owned by various subsidiaries of BlackRock, Inc. (BlackRock). BlackRock has sole voting power over 1,882,529 shares and sole dispositive power over 1,922,215 shares. The address of BlackRock is 55 East 52nd Street, New York, NY 10055.
- (5) Based solely on a Schedule 13G/A filed by Baker Bros. Advisors LP (Adviser) on February 14, 2020 with the SEC. Represents shares of common stock held by Adviser. In February 2019, 667, L.P. and Baker Brothers Life Sciences, L.P. purchased 315,047 and 3,434,953 pre-funded warrants to purchase common stock, respectively, at a price of \$7.9999 per warrant share with an exercise price of \$0.0001 per share. The pre-funded warrants are only exercisable to the extent that the holders thereof and their affiliates would beneficially own no more than 4.99% of the outstanding common stock after exercise. Baker Bros. Advisors GP, LLC (Adviser GP), and Felix J. Baker and Julian C. Baker as principals of Adviser GP, may be deemed to indirectly beneficially own the shares held by Adviser and may be deemed to have the sole power to vote or direct the vote of and the power to dispose or direct the disposition of such securities, each of whom disclaim beneficial ownership with respect to such shares, except to the extent of their pecuniary interest therein, if any. The address of Adviser is 860 Washington Street, 3rd Floor, New York, NY 10014.
- (6) Based solely on a Schedule 13G/A filed by Adage Capital Partners GP, L.L.C. on February 12, 2020 with the SEC. Represents shares of common stock beneficially owned by Adage Capital Partners, L.P. (ACP). ACP has voting and dispositive power for such shares, which power may be exercised by its general partner, Adage Capital Partners GP, L.L.C. (ACPGP). Adage Capital Advisors, L.L.C. (ACA) is the managing member of ACPGP, and thus ACA and ACPGP may be deemed to beneficially own such shares and may be deemed to have shared voting power and shared dispositive power over such shares. Robert Atchinson and Phillip Cross are the managing members of ACA, and as such may be deemed to indirectly beneficially own such shares and have shared voting power and shared dispositive power over such shares. The address of ACP is 200 Clarendon Street, 52nd floor, Boston, MA, 02116.
- (7) Represents (i) 373,469 shares of common stock held by Dr. Quinn and (ii) options exercisable for 279,841 shares of common stock within 60 days of March 31, 2020.
- (8) Represents (i) 50,691 shares of common stock held by Mr. York and (ii) options exercisable for 305,749 shares of common stock within 60 days of March 31, 2020.
- (9) Represents options exercisable for 120,562 shares of common stock within 60 days of March 31, 2020.
- (10) Represents (i) 2,568,543 shares of common stock held by LVFI and (ii) options exercisable for 83,766 shares of common stock within 60 days of March 31, 2020 held by Dr. Shanafelt, of which LVMG has voting and dispositive power over 83,766 of such shares underlying the options. See footnote 2 above for the shares held by LVFI. LVMG's voting and dispositive decisions with respect to the shares underlying the options are made by the LVMG Members, each of whom are deemed to share voting and dispositive power with respect to the shares underlying the options.
- (11) Represents options exercisable for 93,575 shares of common stock within 60 days of March 31, 2020.
- (12) Represents (i) 7,000 shares of common stock held by Mr. Cox and (ii) options exercisable for 93,575 shares of common stock within 60 days of March 31, 2020.
- (13) Represents options exercisable for 111,766 shares of common stock within 60 days of March 31, 2020.
- (14) Represents options exercisable for 37,943 shares of common stock within 60 days of March 31, 2020.
- (15) Represents options exercisable for 33,854 shares of common stock within 60 days of March 31, 2020.
- (16) Represents (i) 2,999,703 shares of common stock and (ii) options exercisable for 1,163,755 shares of common stock within 60 days of March 31, 2020.

EXECUTIVE OFFICERS

The names of our current executive officers, their ages as of March 31, 2020, and their positions are shown below.

| Name | Age | Position |
|-----------------------------------|-----|--|
| Anthony G. Quinn, M.B Ch.B, Ph.D. | 57 | President and Chief Executive Officer |
| Charles N. York II | 42 | Chief Financial Officer and Vice President |
| Leslie Sloan, Ph.D. | 49 | Chief Operating Officer |
| Ravi Rao, M.B. BChir, Ph.D. | 52 | Chief Medical Officer |
| Michael Hanley | 47 | Chief Commercial Officer |

Our board of directors chooses executive officers, who then serve at the board's discretion. There is no family relationship among any of our directors or executive officers.

Anthony G. Quinn, M.B Ch.B, Ph.D. Dr. Quinn has served as our President and Chief Executive Officer since July 2018, and previously served as our interim Chief Executive Officer from July 2017 to July 2018, and as a member of our board of directors since March 2016. Dr. Quinn's biographical information is set forth above under the heading "Proposal No. 1 Election of Directors—Nominees to the Board of Directors."

Charles N. York II. Mr. York has served as our Chief Financial Officer and Vice President since September 2015 after joining our company as Vice President, Finance, in July 2014. Prior to joining Aeglea, Mr. York served as CFO Consultant of Bridgepoint Consulting, a finance consulting company, where he focused on life science, pharmaceutical and healthcare companies, from March 2013 to June 2014. From March 2009 to August 2012, Mr. York was the corporate controller of Astrotech Corporation. Prior to that, Mr. York held financial management roles at Arthrocare Corp. and Freescale Semiconductor Inc. Mr. York began his career at PricewaterhouseCoopers LLP. Mr. York is a CPA in the state of Arizona and received a B.S. in Accounting from the University of Connecticut and an MBA from the McCombs School of Business at the University of Texas at Austin.

Leslie Sloan, Ph.D. Dr. Sloan has served as our Chief Operating Officer since March 2019, and from August 2017 to March 2019 served as our VP, Operations and SVP, Operations. Prior to joining Aeglea, between March 2012 and April 2017, Dr. Sloan served in various roles of increasing responsibility at Ipsen Bioscience Inc., a biopharmaceutical company, including as Senior Director: Head of R&D Operational Excellence, Vice President, R&D Project Management & Analytics, leading the strategic and operational execution of its global R&D portfolio and President of Ipsen Bioscience, Inc. Prior to that, Dr. Sloan also served as Senior Director at Pfizer, where she was a member of the R&D clinical candidate survival council and candidate quality guidelines committee. Dr. Sloan holds a B.S. in chemistry and medical biology from Southeastern Oklahoma State University and a Ph.D. in bio-organic chemistry from Yale University.

Ravi M. Rao, MB. BChir, Ph.D. Dr. Rao has served as our Chief Medical Officer since November 2019. Prior to joining our Company, Dr. Rao served in leadership roles at GlaxoSmithKline plc, including as Vice President, Global Medical Affairs Head, Immunology and Specialty Medicine from September 2016 to October 2019; and as Vice President, Head Unit Physician and Medicines Development Leader, Immuno-inflammation Therapy Area Unit from April 2012 to August 2016. Prior to that, Dr. Rao served in various roles of increasing responsibility at Roche Genentech, including as Group Medical Director, Product Development Immunology and Clinical Development Site Head; Clinical Science Leader, Pharma Development Immunology; and Clinical Scientist, Pharma Development Immunology. Dr. Rao also previously served as Senior Lecturer and Honorary Consultant in Rheumatology at Imperial College NHS Trust and as a Consultant in Rheumatology and General Medicine at the Royal Berkshire Hospital. Dr. Rao holds a BA in Medical Sciences and an MB. BChir from the University of Cambridge, an MRCP from the Royal College of Physicians, a Ph.D. from Imperial College School of Medicine, University of London, and he completed a post-doctoral research fellowship at Harvard Medical School.

Michael Hanley. Mr. Hanley has served as our Chief Commercial Officer since October 2019 and brings almost 25 years of experience in the biopharmaceutical and healthcare industries. Prior to joining our company, Mr. Hanley served as Vice President and U.S. Chief Commercial Officer of Esteve Pharmaceuticals, S.A. from April 2018 to September 2019. From July 2017 to March 2018, Mr. Hanley served as an independent strategy consultant to various biopharmaceutical companies. From July 2015 to June 2017, Mr. Hanley served in various roles of increasing responsibility within the Orphan Business Unit at Horizon Therapeutics PLC, a global biopharmaceutical company, including as Vice President, Marketing; Group Vice President and General Manager; and Group Vice President, Marketing, Americas and Asia Pacific. From August 2010 to July 2015, Mr. Hanley served in various roles of increasing responsibility at the U.S. affiliate of H. Lundbeck A/S, a global pharmaceutical company, including as Director, ONFI Marketing; Senior Director, Neurology Marketing; and Senior National Sales Director, Psychiatry. Mr. Hanley holds a BBA in Marketing from the University of Notre Dame and an MBA from the Kellogg School of Management at Northwestern University.

EXECUTIVE COMPENSATION

Overview

This section provides an overview of the material components of our executive compensation program for our Chief Executive Officer and each of our two other most highly compensated executive officers (our “**Named Executive Officers**”) during fiscal year 2019. The compensation provided to our Named Executive Officers for fiscal year 2019 is set forth in detail in the Summary Compensation Table and other tables that follow in this section, as well as the accompanying footnotes and narratives relating to those tables.

Our Named Executive Officers for fiscal year 2019 were:

- Anthony G. Quinn, M.B Ch.B, Ph.D., our President and Chief Executive Officer;
- Charles N. York II, our Chief Financial Officer and Vice President;
- Leslie Sloan, Ph.D., our Chief Operating Officer

Summary Compensation Table

The following table provides information regarding all plan and non-plan compensation awarded to, earned by or paid to each of our Named Executive Officers for the fiscal years ended December 31, 2019 and 2018.

| Name and Principal Position | Year | Salary (\$) | Nonequity Incentive Plan Compensation \$(1) | Equity Awards \$(2) | All Other Compensation (\$) | Total (\$) |
|---|------|----------------|---|---------------------------|-----------------------------------|---------------|
| Anthony G. Quinn, M.B Ch.B, Ph.D. | 2019 | 518,000 | 247,000 | 1,663,919 | 53,857 (3) | 2,482,776 |
| <i>Chief Executive Officer</i> | 2018 | 507,000 | 304,000 | 2,919,543 | 111,591 (4) | 3,842,134 |
| Charles N. York II | 2019 | 390,000 | 165,000 | 522,424 | 7,712 (5) | 1,085,136 |
| <i>Chief Financial Officer and Vice President</i> | 2018 | 343,000 | 185,000 | 424,842 | 7,981 (5) | 960,823 |
| Leslie Sloan, Ph.D. | 2019 | 355,000 | 142,000 | 632,380 | 19,843 (5) | 1,149,223 |
| <i>Chief Operating Officer</i> | | | | | | |

- (1) Cash bonuses earned in 2019 and paid in 2020, based in part on achievement of specified milestones and performance objectives. Amounts for 2018 represent cash bonuses earned in 2018, and paid in 2019, based in part on achievement of specified milestones and performance objectives.
- (2) The amounts reported in this column represent the aggregate grant date fair value of the awards granted to our Named Executive Officers during the years ended December 31, 2019 and 2018, as computed in accordance with ASC 718. The assumptions used in calculating the grant date fair value of the awards reported in the Equity Awards column are set forth in Note 10 to our consolidated financial statements included in our annual report on Form 10-K for the year ended December 31, 2019. Note that the amounts reported in this column reflect the aggregate accounting cost for these awards, and do not necessarily correspond to the actual economic value that may be received by the Named Executive Officers from the awards.
- (3) Represents (i) \$19,843 of health insurance premiums paid by us in the applicable period on behalf of Dr. Quinn and (ii) \$34,014 of tax gross-ups paid by us in the applicable period for Dr. Quinn’s housing expenses and commuting expenses.
- (4) Represents (i) housing expenses paid by us in the applicable period on behalf of Dr. Quinn of \$38,806, (ii) commuting expenses paid by us in the applicable period on behalf of Dr. Quinn of \$14,915, (iii) \$19,759 of health insurance premiums paid by us in the applicable period on behalf of Dr. Quinn and (iv) \$38,111 of tax gross-ups paid by us in the applicable period for Dr. Quinn’s housing expenses and commuting expenses.
- (5) Represents a health insurance premium paid by us in the applicable period on behalf of each of our Named Executive Officers.

Outstanding Equity Awards at December 31, 2019

The following table presents, for our Named Executive Officers, information regarding outstanding equity awards held as of December 31, 2019.

| Name | Option Awards | | | |
|-----------------------------------|---|---|----------------------------|------------------------|
| | Number of securities underlying unexercised options (#) exercisable | Number of securities underlying unexercised options (#) unexercisable | Option exercise price (\$) | Option expiration date |
| Anthony G. Quinn, M.B Ch.B, Ph.D. | 23,280 | 96,634 (1) | 6.31 | 2/19/2028 |
| | 106,249 | 193,751 (2) | 9.36 | 7/17/2028 |
| | — | 75,000 (3) | 9.36 | 7/18/2028 |
| | — | 50,000 (4) | 9.36 | 7/18/2028 |
| | 58,333 | 221,667 (5) | 8.36 | 2/27/2029 |
| Charles N. York II | 49,270 | 5,730 (6) | 7.28 | 5/16/2026 |
| | 61,875 | 28,125 (7) | 8.03 | 3/19/2027 |
| | 46,800 | 11,700 (8) | 3.10 | 8/21/2027 |
| | 10,183 | — (9) | 3.47 | 3/31/2025 |
| | 22,258 | — (10) | 3.47 | 3/31/2025 |
| | 15,027 | — (10) | 3.47 | 3/31/2025 |
| | 42,212 | 49,888 (1) | 6.31 | 2/19/2028 |
| | 18,250 | 69,350 (5) | 8.36 | 2/27/2029 |
| Leslie Sloan, Ph.D. | 32,083 | 22,917 (11) | 5.98 | 10/9/2027 |
| | 36,666 | 43,334 (1) | 6.31 | 2/19/2028 |
| | 15,000 | 57,000 (5) | 8.36 | 2/27/2029 |
| | 6,750 | 29,250 (12) | 8.06 | 3/5/2029 |

- (1) These stock options vest as follows: 1/48th of the shares of common stock underlying the options vest on March 20, 2018 and each month thereafter.
- (2) These stock options vest as follows: 1/48th of the shares of common stock underlying the options vest on August 18, 2018 and each month thereafter.
- (3) These stock options vest and become exercisable contingent upon achievement of certain product development milestones.
- (4) These stock options vest and become exercisable contingent upon achievement of certain regulatory milestones.
- (5) These stock options vest as follows: 1/48th of the shares of common stock underlying the options vest on March 31, 2019 and each month thereafter.
- (6) These stock options vest as follows: 1/48th of the shares of common stock underlying the options vest on June 17, 2016 and each month thereafter.
- (7) These stock options vest as follows: 1/48th of the shares of common stock underlying the options vest on April 20, 2017 and each month thereafter.
- (8) These stock options vest as follows: (i) 50% of the shares of common stock underlying the options vest on August 22, 2018, (ii) 30% of the shares of common stock underlying the options vest on August 22, 2019 and (iii) 20% of the shares of common stock underlying the options vest on August 22, 2020.
- (9) These stock options vest as follows: 25% of the shares of common stock underlying the options vest on July 16, 2015 and thereafter 1/16th of the shares of common stock underlying the options vest at the end of each three-month period elapsed.
- (10) These stock options vest as follows: 25% of the shares of common stock underlying the options vest on March 20, 2016 and an additional 1/48th of the shares of common stock underlying the options vest at the end of each month thereafter.
- (11) These stock options vest as follows: 25% of the shares of common stock underlying the options vest on August 28, 2018 and an additional 1/48th of the shares of common stock underlying the options vest at the end of each month thereafter.
- (12) These stock options vest as follows: 1/48th of the shares of common stock underlying the options vest on April 6, 2019 and each month thereafter.

Offer Letters and Employment Arrangements

Anthony G. Quinn, M.B Ch.B, Ph.D.

Pursuant to an offer letter dated July 18, 2018, Dr. Quinn serves as our President and Chief Executive Officer. Dr. Quinn's offer letter sets forth the principal terms and conditions of his employment, including his initial annual base salary of \$507,000, an annual target bonus opportunity of 50% of his base salary (which bonus is earned based on our achievement of specified milestones and performance objectives, as well as Dr. Quinn's performance relative to one or more performance objectives established by our board of directors, the achievement of which is evaluated by our Board of Directors). Dr. Quinn's offer letter provides for (i) an option grant for the purchase of 300,000 shares of our common stock, which vests over a 48-month period subject to Dr. Quinn's continued service to the Company on each monthly vesting date, and (ii) three options to purchase an aggregate of 200,000 shares of the our common stock, which will vest based on the achievement of certain performance objectives set by the board of directors of the Company (collectively, the "CEO Grants"). Dr. Quinn will be entitled to severance benefits described in "Termination or Change in Control Arrangements" below.

Charles N. York II

Pursuant to an offer letter dated June 16, 2014, Mr. York serves as our Chief Financial Officer. Mr. York's offer letter sets forth the principal terms and conditions of his employment, including his initial annual base salary and an annual target bonus opportunity (which bonus is earned based on our achievement of specified milestones and performance objectives, as well as Mr. York's performance relative to one or more performance objectives established by our board of directors, the achievement of which is evaluated by our Board of Directors). Mr. York's current base salary and annual bonus are set forth in the "Summary Compensation Table" above. Mr. York's offer letter also provides for a restricted stock grant, which as of December 31, 2018 was fully vested. Pursuant to the terms of his severance agreement, Mr. York will be entitled to severance benefits described in "Termination or Change in Control Arrangements" below.

Leslie Sloan, Ph.D.

Pursuant to an offer letter dated March 13, 2020, Dr. Sloan serves as our Chief Operating Officer. Dr. Sloan's offer letter sets forth the principal terms and conditions of her employment as Chief Operating Officer, including her annual base salary and an annual target bonus opportunity (which bonus is earned based on our achievement of specified milestones and performance objectives, as well as Dr. Sloan's performance relative to one or more performance objectives established by our board of directors, the achievement of which is evaluated by our Board of Directors). Dr. Sloan's current base salary and annual bonus are set forth in the "Summary Compensation Table" above. Dr. Sloan's offer letter also provides for an additional option grant for the purchase of 108,000 shares of common stock, which vests over a 48-month period subject to Dr. Sloan's continued service to the Company on each monthly vesting date. Pursuant to the terms of her severance agreement, Dr. Sloan will be entitled to severance benefits described in "Termination or Change in Control Arrangements" below.

Termination or Change in Control Arrangements

Pursuant to his severance agreement, entered into as of July 18, 2018, Dr. Quinn will receive the following benefits if his employment is terminated for any reason other than for cause or if he voluntarily resigns his employment for good reason: (i) 18 months of his monthly base salary; (ii) one-hundred percent (100%) of his annual target bonus; (iii) payment for the full amount of his premiums under COBRA for 18 months; and (iv) any outstanding equity awards, including awards that would otherwise vest only upon satisfaction of performance criteria, shall accelerate and become vested and exercisable as if an additional twelve (12) months of vesting had occurred to the then-unvested shares subject to the equity award. Additionally, if his employment is terminated within 12 months of a change in control or within three months preceding a change in control for any reason other than for cause or he voluntarily resigns his employment for good reason during such period, we will provide him with the following benefits: (i) 18 months of his monthly base salary; (ii) one-hundred percent (100%) of his annual target bonus; (iii) payment for the full amount of his premiums under COBRA for 18 months; and (iv) 100% vesting for all outstanding and unvested equity awards, including awards that would otherwise vest only upon satisfaction of performance criteria based on achievement of the performance criteria at target.

Pursuant to his severance agreement, entered into as of April 11, 2018, Mr. York will receive the following benefits if his employment is terminated for any reason other than for cause or if he voluntarily resigns his employment for good reason: (i) 12 months of his monthly base salary; (ii) one-hundred percent (100%) of his annual target bonus; (iii) payment for the full amount of his premiums under COBRA for 12 months; and (iv) any outstanding equity awards, including awards that would otherwise vest only upon satisfaction of performance criteria, shall accelerate and become vested and exercisable as if an additional twelve (12) months of vesting had occurred to the then-unvested shares subject to the equity award. Additionally, if his employment is terminated within 12 months of a change in control or within three months preceding a change in control for any reason other than for cause or he voluntarily resigns his employment for good reason during such period, we will provide him with the following benefits: (i) 12 months of his monthly base salary; (ii) one-hundred percent (100%) of his annual target bonus; (iii) payment for the full amount of his premiums under COBRA for 12 months; and (iv) 100% vesting for all outstanding and unvested equity awards, including awards that would otherwise vest only upon satisfaction of performance criteria based on achievement of the performance criteria at target.

Pursuant to her severance agreement, entered into as of August 7, 2019, Dr. Sloan will receive the following benefits if her employment is terminated for any reason other than for cause or if she voluntarily resigns her employment for good reason: (i) 12 months of her monthly base salary; (ii) one-hundred percent (100%) of her annual target bonus; (iii) payment for the full amount of her premiums under COBRA for 12 months; and (iv) any outstanding equity awards, including awards that would otherwise vest only upon satisfaction of performance criteria, shall accelerate and become vested and exercisable as if an additional twelve (12) months of vesting had occurred to the then-unvested shares subject to the equity award. Additionally, if her employment is terminated within 12 months of a change in control or within three months preceding a change in control for any reason other than for cause or she voluntarily resigns her employment for good reason during such period, we will provide her with the following benefits: (i) 12 months of her monthly base salary; (ii) one-hundred percent (100%) of her annual target bonus; (iii) payment for the full amount of her premiums under COBRA for 12 months; and (iv) 100% vesting for all outstanding and unvested equity awards, including awards that would otherwise vest only upon satisfaction of performance criteria based on achievement of the performance criteria at target.

EQUITY COMPENSATION PLAN INFORMATION

The following table presents information as of December 31, 2019 with respect to compensation plans under which shares of our common stock may be issued.

| 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(\$) (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 security holders | 3,789,278 (1) \$ | 7.29 | 1,718,393 (2) |
| Equity compensation plans not approved by security holders | 99,910 | 10.42 | 1,000,090 (3) |
| Total | 3,889,188 | 7.37 | 2,718,483 |

(1) Includes our 2015 Plan and 2016 Plan.

(2) Includes 247,347 shares that remain available for purchase under the 2016 Employee Stock Purchase Plan and 1,471,046 shares of common stock that remain available for grant under the 2016 Plan. There are no shares of common stock available for issuance under our 2015 Plan, but the plan continues to govern the terms of stock options granted thereunder. Any shares of common stock that are subject to outstanding awards under the 2015 Plan that are issuable upon the exercise of stock options that expire or become unexercisable for any reason without having been exercised in full will generally be available for future grant and issuance under our 2016 Plan. In addition, the 2016 Plan provides for an automatic increase in the number of shares reserved for issuance thereunder on January 1 of each year for the remaining term of the plan equal to (a) 4.0% of the number of issued and outstanding shares of common stock on December 31 of the immediately preceding year, or (b) a lesser amount as approved by the board each year. Pursuant to this provision, the number of shares reserved for grant and issuance under our 2016 Plan increased by 1,163,377 shares on January 1, 2020. Also, the 2016 Employee Stock Purchase Plan provides for an automatic annual increase in the number of shares reserved for issuance thereunder on January 1 of each year for the remaining term of the plan equal to (a) 1.0% of the number of issued and outstanding shares of common stock on December 31 of the immediately preceding year, or (2) a lesser amount as approved by the Board each year. Pursuant to this provision, the number of shares reserved for grant and issuance under our 2016 Employee Stock Purchase Plan increased by 290,844 shares on January 1, 2020.

(3) Reflects shares of common stock that remain available for grant under the 2018 Inducement Plan.

RELATED PARTY TRANSACTIONS

Other than the executive officer and director compensation arrangements discussed above under “Executive Compensation” and “Proposal No. 1—Election of Directors—Director Compensation,” respectively, below we describe the transactions to which we were a party since January 1, 2019, in which the amount involved exceeded \$120,000 and in which our directors, executive officers, former directors, former executive officers, director nominees and holders of more than 5% of our common stock, or other persons as may be required to be disclosed pursuant to Item 404 of Regulation S-K, had a direct or indirect material interest.

Underwritten Public Offering

On February 5, 2019, we entered into an underwriting agreement with J.P. Morgan Securities LLC and Evercore Group L.L.C. (the “Representatives”), as Representatives of the several underwriters listed on Schedule 1 thereto, relating to a public offering (the “Offering”) of an aggregate of 3,500,000 shares of our common stock at a public purchase price of \$8.00 per share and pre-funded warrants to purchase 4,000,000 shares of our common stock at a public purchase price of \$7.9999 per pre-funded warrant with an exercise price of \$0.0001 per share. The Offering closed on February 8, 2019.

Pursuant to the Offering, on February 8, 2019:

- (i) Baker Brothers Life Sciences, L.P. and 667, L.P. purchased 315,047 and 3,434,953 pre-funded warrants to purchase common stock, respectively, for an aggregate purchase price of \$29,999,625;
- (ii) Blackwell Partners LLC, Nantahala Capital Partners II Limited Partnership, Nantahala Capital Partners Limited Partnership, and Nantahala Capital Partners SI, LP purchased 16,484, 63,588, 23,516, and 146,412 pre-funded warrants to purchase common stock, respectively, at an aggregate purchase price of \$1,999,975; and
- (iii) Nantahala Capital Management, LLC purchased 125,000 shares of our common stock, for an aggregate purchase price of \$1,000,000.

Review, Approval or Ratification of Transactions with Related Parties

Our board of directors has adopted a written related person transactions policy. Under this policy, our executive officers, directors, nominees for election as a director, beneficial owners of more than 5% of our common stock, and any members of the immediate family of and any entity affiliated with any of the foregoing persons, are not permitted to enter into a material related person transaction with us without the review and approval of our audit committee, or a committee composed solely of independent directors in the event it is inappropriate for our audit committee to review such transaction due to a conflict of interest. The policy provides that any request for us to enter into a transaction with an executive officer, director, nominee for election as a director, beneficial owner of more than 5% of our common stock or with any of their immediate family members or affiliates in which the amount involved exceeds \$120,000 will be presented to our audit committee for review, consideration and approval. In approving or rejecting any such proposal, our audit committee will consider the relevant facts and circumstances available and deemed relevant to the audit committee, including, but not limited to, whether the transaction is on terms no less favorable than terms generally available to an unaffiliated third party under the same or similar circumstances and the extent of the related person’s interest in the transaction.

REPORT OF THE AUDIT COMMITTEE

The information contained in the following report of Aeglea's audit committee is not considered to be "soliciting material," "filed" or incorporated by reference in any past or future filing by Aeglea under the Securities Exchange Act of 1934 or the Securities Act of 1933 unless and only to the extent that Aeglea specifically incorporates it by reference.

The audit committee has reviewed and discussed with Aeglea's management and PricewaterhouseCoopers LLP the audited financial statements of Aeglea for the year ended December 31, 2019. The audit committee has also discussed with PricewaterhouseCoopers LLP the matters required to be discussed under applicable requirements of the Public Company Accounting Oversight Board and the Securities and Exchange Commission.

The audit committee has received and reviewed the written disclosures and the letter from PricewaterhouseCoopers LLP required by applicable requirements of the Public Company Accounting Oversight Board regarding the independent accountant's communications with the audit committee concerning independence, and has discussed with PricewaterhouseCoopers LLP its independence from Aeglea.

Based on the review and discussions referred to above, the audit committee recommended to the board of directors that the audited financial statements be included in Aeglea's annual report on Form 10-K for the year ended December 31, 2019 for filing with the Securities and Exchange Commission.

Submitted by the Audit Committee

Sandesh Mahatme, Chair
Ivana Magovcevic-Liebisch, Ph.D., J.D.
V. Bryan Lawlis, Ph.D.

Stockholder Proposals to be Presented at Next Annual Meeting

Aeglea’s bylaws provide that, for stockholder nominations to the board or other proposals to be considered at an annual meeting, the stockholder must give timely notice thereof in writing to the Corporate Secretary at Aeglea BioTherapeutics, Inc., 805 Las Cimas Parkway, Suite 100, Austin, Texas 78746, Attn: Corporate Secretary.

To be timely for the 2021 Annual Meeting, a stockholder’s notice must be delivered to or mailed and received by our Corporate Secretary at our principal executive offices not earlier than 5:00 p.m. Central Time on February 23, 2021 and not later than 5:00 p.m. Central Time on March 25, 2021. However, if the date of our 2021 Annual Meeting is advanced by more than 30 days before or delayed by more than 60 days after the one-year anniversary of the date of our 2020 Annual Meeting, then, for notice to the stockholder to be timely, it must be delivered to the Corporate Secretary at our principal executive offices not earlier than the close of business on the 105th day prior to the currently proposed annual meeting and not later than the close of business on the later of (1) the 75th day prior to such annual meeting or (2) the close of business on the 10th day following the day on which public announcement of the date of such meeting is first made by Aeglea. A stockholder’s notice to the Corporate Secretary must set forth as to each matter the stockholder proposes to bring before the annual meeting the information required by Aeglea’s bylaws.

Stockholder proposals submitted pursuant to Rule 14a-8 under the Exchange Act and intended to be presented at Aeglea’s 2021 Annual Meeting must be received by the Company not later than December 23, 2020 in order to be considered for inclusion in Aeglea’s proxy materials for the 2021 Annual Meeting.

Available Information

Aeglea will mail without charge, upon written request, a copy of Aeglea’s annual report on Form 10-K for the year ended December 31, 2019, including the financial statements and list of exhibits, and any exhibit specifically requested. Requests should be sent to:

Aeglea BioTherapeutics, Inc.
805 Las Cimas Parkway
Suite 100
Austin, TX 78746
Attn: Investor Relations

Electronic Delivery of Stockholder Communications

We encourage you to help us conserve natural resources, as well as significantly reduce printing and mailing costs, by signing up to receive your stockholder communications electronically via e-mail.

With electronic delivery, you will be notified via e-mail as soon as future Annual Reports and proxy statements are available on the Internet, and you can submit your stockholder votes online. Electronic delivery can also eliminate duplicate mailings and reduce the amount of bulky paper documents you maintain in your personal files. To sign up for electronic delivery:

Registered Owner (you hold our common stock in your own name through our transfer agent, American Stock Transfer & Trust Company, LLC, or you are in possession of stock certificates): visit www.amstock.com to enroll.

Beneficial Owner (your shares are held by a brokerage firm, a bank, a trustee or a nominee): If you hold shares beneficially, please follow the instructions provided to you by your broker, bank, trustee or nominee.

Your electronic delivery enrollment will be effective until you cancel it. Stockholders who are record owners of shares of our common stock may call American Stock Transfer & Trust Company, LLC, our transfer agent, at (800) 937-5449 or visit www.amstock.com with questions about electronic delivery.

“Householding”—Stockholders Sharing the Same Last Name and Address

The SEC has adopted rules that permit companies and intermediaries (such as brokers) to implement a delivery procedure called “householding.” Under this procedure, multiple stockholders who reside at the same address may receive a single copy of our annual report and proxy materials, unless the affected stockholder has provided contrary instructions. This procedure reduces printing costs and postage fees, and helps protect the environment as well.

This year, a number of brokers with account holders who are Aeglea stockholders will be “householding” our annual report on Form 10-K and proxy materials. A set of annual report on Form 10-K and other 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 it will be “householding” communications to your address, “householding” will continue until you are notified otherwise or until you revoke your consent. Stockholders may revoke their consent at any time by contacting American Stock Transfer & Trust Company, LLC, either by calling toll-free (800) 937-5449, or by writing to American Stock Transfer & Trust Company, LLC, Operations Center, 6201 15th Avenue, Brooklyn, New York 11219.

Upon written or oral request, Aeglea will promptly deliver a proxy statement, proxy card, annual report on Form 10-K and other proxy materials to any stockholder at a shared address to which a single copy of any of those documents was delivered. To receive a separate copy of the proxy statement, proxy card, annual report on Form 10-K and other proxy materials, you may write or call Aeglea’s Investor Relations department at 805 Las Cimas Parkway, Suite 100, Austin, Texas 78746, Attn: Investor Relations, telephone number (512) 942-2935.

Any stockholders who share the same address and currently receive multiple copies of Aeglea’s annual report on Form 10-K and other proxy materials who wish to receive only one copy in the future can contact their bank, broker or other holder of record to request information about householding or Aeglea’s Investor Relations department at the address or telephone number listed above.

OTHER MATTERS

The board of directors does not presently intend to bring any other business before the Annual Meeting and, so far as is known to the board of directors, no matters are to be brought before the Annual Meeting except as specified in the Notice of Annual Meeting of Stockholders. As to any business that may arise and properly come before the Annual Meeting, however, it is intended that proxies, in the form enclosed, will be voted in respect thereof in accordance with the judgment of the persons voting such proxies.

AEGLEA BIOTHERAPEUTICS, INC.
805 LAS CRUCES PARKWAY
SUITE 100
AUSTIN, TX 78746

VOTE BY INTERNET - www.proxyvote.com

Use the internet to transmit your voting instructions and for electronic delivery of information up until 11:59 p.m. Eastern Time on June 7, 2020. 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 up until 11:59 p.m. Eastern Time on June 7, 2020. 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:

D01820-P37742

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

THIS PROXY CARD IS VALID ONLY WHEN SIGNED AND DATED.

AEGLEA BIOTHERAPEUTICS, INC.

The Board of Directors recommends you vote FOR the following:

1. Election of Class I Directors

| For All | Withhold All | For All Except |
|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

To withhold authority to vote for any individual nominee(s), mark "For All Except" and write the number(s) of the nominee(s) on the line below.

Nominees:

- 01) Sandesh Mahatme
02) Suzanne Bruhn, Ph.D.

The Board of Directors recommends you vote FOR proposal 2.

2. Ratify the appointment of PricewaterhouseCoopers LLP as the independent registered public accounting firm for the fiscal year ending December 31, 2020.

For Against Abstain

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 Owners) Date

Important Notice Regarding the Availability of Proxy Materials for the Annual Meeting:

The Notice & Proxy Statement and Annual Report are available at www.proxyvote.com.

D01821-P37742

PROXY

**THIS PROXY IS SOLICITED ON BEHALF OF THE BOARD OF DIRECTORS
OF AEGLEA BIOTHERAPEUTICS, INC.**

The undersigned hereby appoints Anthony G. Quinn, M.B. Ch.B, Ph.D. and Charles N. York II, and each of them, with power to act without the other and with power of substitution, as proxies and attorneys-in-fact and hereby authorizes them to represent and vote, as provided on the other side, all the shares of Common Stock of Aeglea BioTherapeutics, Inc. which the undersigned is entitled to vote and, in their discretion, to vote upon such other business as may properly come before the Annual Meeting of Stockholders of Aeglea BioTherapeutics, Inc. to be held June 8, 2020 or any adjournment thereof, with all powers which the undersigned would possess if present at the Annual Meeting.

THIS PROXY CARD, WHEN PROPERLY EXECUTED, WILL BE VOTED IN THE MANNER DIRECTED HEREIN BY THE UNDERSIGNED. IF NO DIRECTION IS MADE BUT THE CARD IS SIGNED, THIS PROXY CARD WILL BE VOTED FOR THE ELECTION OF ALL NOMINEES UNDER PROPOSAL 1, FOR PROPOSAL 2 AND IN THE DISCRETION OF THE PROXIES WITH RESPECT TO SUCH OTHER BUSINESS AS MAY PROPERLY COME BEFORE THE MEETING.

Continued and to be signed on reverse side