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

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**SCHEDULE 14A INFORMATION**

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

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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:  
\_\_\_\_\_
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    - (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):  
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  - 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:  
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\_\_\_\_\_
    - (3) Filing Party:  
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    - (4) Date Filed:  
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**AEGLEA BIOTHERAPEUTICS, INC.**  
**901 S. MoPac Expressway**  
**Barton Oaks Plaza One, Suite 250**  
**Austin, TX 78746**

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**NOTICE OF ANNUAL MEETING OF STOCKHOLDERS TO BE HELD ON JUNE 7, 2019**

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Dear Stockholders:

You are cordially invited to attend the 2019 Annual Meeting of Stockholders of Aeglea BioTherapeutics, Inc. The meeting will be held on Friday, June 7, 2019, at 9:00 a.m. local time at 901 S. MoPac Expressway, Barton Oaks Plaza One, Suite 250, Austin, TX 78746.

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

1. To elect three Class III 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, 2019.
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 10, 2019 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 22, 2019. For ten days prior to the meeting, a complete list of the stockholders entitled to vote at the meeting will be available for examination by any stockholder for any purpose germane to the meeting during ordinary business hours at our headquarters.

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](http://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 22, 2019

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**YOUR VOTE IS IMPORTANT**

**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.**

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AEGLEA BIOTHERAPEUTICS, INC.

PROXY STATEMENT FOR 2019 ANNUAL MEETING OF STOCKHOLDERS

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**AEGLEA BIOTHERAPEUTICS, INC.**  
**901 S. MoPac Expressway**  
**Barton Oaks Plaza One, Suite 250**  
**Austin, TX 78746**

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**PROXY STATEMENT FOR THE 2019 ANNUAL MEETING OF STOCKHOLDERS**

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**April 22, 2019**

**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 2019 Annual Meeting of Stockholders (“**Annual Meeting**”) to be held on June 7, 2019, at 9:00 a.m. local time, and any adjournment or postponement thereof. This Proxy Statement and the accompanying form of proxy were first mailed to stockholders on or about April 22, 2019. An annual report on Form 10-K for the year ended December 31, 2018 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](http://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 2019 Annual Meeting (“**Proxy Statement**”).

**Record Date; Quorum**

Only holders of record of common stock at the close of business on April 10, 2019 (“**Record Date**”) will be entitled to vote at the Annual Meeting. At the close of business on the Record Date, we had 28,837,352 shares of common stock outstanding and entitled to vote. For ten days prior to the meeting, a complete list of the stockholders entitled to vote at the meeting will be available for examination by any stockholder for any purpose relating to the meeting during ordinary business hours at our headquarters.

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 three 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, 2019 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 III 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, 2019 (“**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 6, 2019. 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.

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"**

We are an "emerging growth company" as that term is used in the Jumpstart Our Business Startups Act of 2012 and, as such, have elected to comply with certain reduced public company reporting requirements. These reduced reporting requirements include reduced disclosure about 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. Dr. Shanafelt previously served as non-executive Chairman of our board of directors from February 2014 through January 2019. 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 a separate SEC independence requirement, which provides that (i) they may not accept directly or indirectly any consulting, advisory or other compensatory fee from Aeglea or any of its subsidiaries other than their directors' compensation, and (ii) they may not be an affiliated person of Aeglea or any of its subsidiaries. Members of the compensation committee also must satisfy a separate SEC independence requirement 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., 901 S. MoPac Expressway, Barton Oaks Plaza One, Suite 250, 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 Securities Exchange Act of 1934, as amended ("**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 an independent executive compensation consulting firm, Compensia (“**Compensia**”), to evaluate our executive compensation program and practices and to provide advice and ongoing assistance on executive compensation matters for fiscal year 2018. Specifically, Compensia was engaged to:

- provide compensation-related data for a peer group of companies to serve as a basis for assessing competitive compensation practices;
- review and assess our current director, CEO and other executive officer compensation policies and practices and equity profile relative to market practices;
- review and assess our current executive compensation program relative to market 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 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 2018, 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 determined that none of the work performed by Compensia during fiscal year 2018 raised 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 2018, Mr. Cox, Mr. Mahatme and Dr. Bruhn served on our Compensation Committee. No other member of our compensation committee in 2018 was at any time during 2018 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 2018.

### **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.

### **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 2018, our board of directors met 8 times, including telephonic meetings, the audit committee held 4 meetings, the compensation committee held 4 meetings and the nominating and corporate governance committee held 2 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, Dr. George Georgiou, Mr. Mahatme, Dr. Shanafelt, Mr. Cox, and Dr. Magovcevic-Liebisch attended the 2018 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**  
**901 S. MoPac Expressway**  
**Barton Oaks Plaza One, Suite 250**  
**Austin, TX 78746**

## NOMINATIONS PROCESS AND DIRECTOR QUALIFICATIONS

### **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.

## PROPOSAL NO. 1

### 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 III will stand for election at our Annual Meeting to be held on June 7, 2019. The terms of office of directors in Class I and Class II do not expire until the annual meetings of stockholders held in 2020 and 2021, respectively. At the recommendation of our nominating and corporate governance committee, our board of directors proposes that each of the three Class III nominees named below, each of whom is currently serving as a director in Class III, be elected as a Class III director for a three-year term expiring at the 2022 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 three 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, 2019, 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.

Name of Director/Nominee	Age	Principal Occupation	Director Since
Armen Shanafelt, Ph.D.(1)	59	General Partner, Lilly Ventures	2013
V. Bryan Lawlis, Ph.D.(2)	67	Director, Biomarin Pharmaceutical, Inc; Director, Coherus Biosciences, Inc; Director, Geron Corporation	2018
Anthony G. Quinn, M.B Ch.B, Ph.D.	57	President and Chief Executive Officer, Aeglea	2016

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

*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 serves on the boards of directors of Aileron Therapeutics, Inc., Protagonist Therapeutics, Inc. and Surface Oncology, Inc., as well as on the board of directors of one private company. Dr. Shanafelt previously served on the board of directors of Sutro Biopharma, Inc. 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 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 currently serves on the boards of directors at BioMarin Pharmaceutical Inc., Geron, Inc., Sutro Biopharma, Inc., and Coherus Biosciences, Inc., as well as on the boards of directors of several private companies. Dr. Lawlis is also an advisor for Phoenix Venture Partners, a venture capital firm that invests in material science and manufacturing technology. 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.

### 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, 2019, 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.

<u>Name of Director</u>	<u>Age</u>	<u>Principal Occupation</u>	<u>Director Since</u>
<b>Class I Directors:</b>			
Sandesh Mahatme <sup>(1)(2)</sup>	54	Executive Vice President, Chief Financial Officer, and Chief Business Officer, Sarepta Therapeutics, Inc	2015
Suzanne Bruhn, Ph.D. <sup>(2)(3)</sup>	55	Director, Novelson Therapeutics, Inc; Director, Pliant Therapeutics	2017
<b>Class II Directors:</b>			
Russell Cox <sup>(2)</sup>	55	Director, Gossamer Bio	2015
Ivana Magovcevic-Liebisch, Ph.D. <sup>(1)(3)</sup>	51	Executive Vice President, Chief Business Officer, Ipsen	2018

(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 earned LL.M. degrees from Cornell Law School and NYU School of Law and is a member of the New York State Bar Association. He is a director at Flexion Therapeutics, Inc. and Elcelyx Therapeutics, Inc., both biopharmaceutical companies. 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 served as President and Chief Executive Officer of Proclara Biosciences, Inc. between April 2017 and September 2018. Dr. Bruhn served as President and Chief Executive Officer of Promedior, Inc. between May 2012 and November 2015. She also served as a member of the board of directors of Raptor Pharmaceuticals Corp., a publicly traded pharmaceutical company, from April 2011 until it was acquired by Horizon Pharma plc in October 2016. 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 currently also serves on the board of directors of Novelson Therapeutics, Inc, a publicly traded pharmaceutical company, and Pliant Therapeutics. 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.

*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 served as Chief Executive Officer at Vital Therapies, Inc. from January 2018 to January 2019. Additionally, he 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, he 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, he 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 board 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.

### 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, 2018 regarding all compensation awarded to, earned by or paid to each person who served as a non-employee director for some portion of 2018. Dr. Quinn, our President and Chief Executive Officer, received compensation solely as an employee of the Company in 2018.

Name	Fees Earned or Paid in Cash (\$)	Option Awards (\$)(1)	Total (\$)
Armen Shanafelt, Ph.D.	81,004	130,088	211,092
George Georgiou, Ph.D.(2)	31,997	—	31,997
Sandesh Mahatme	57,500	130,088	187,588
Russell J. Cox	49,167	130,088	179,255
Suzanne Bruhn, Ph.D.	50,500	130,088	180,588
Ivana Magovcevic-Liebisch, Ph.D. (3)	36,598	276,872	313,470
V. Bryan Lawlis, Ph.D.(4)	20,524	230,534	251,058

- (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, 2018, 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 9 to our consolidated financial statements included in our annual report on Form 10-K for the year ended December 31, 2018. 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, 2018, see the table below.
- (2) Dr. Georgiou resigned from our board of directors in November 2018.
- (3) Dr. Magovcevic-Liebisch joined our board of directors in March, 2018.
- (4) Dr. Lawlis joined our board of directors in July 2018.

Our non-employee directors held the following number of outstanding stock options as of December 31, 2018.

<b>Name</b>	<b>Option Awards</b>
Armen Shanafelt, Ph.D.	72,400
V. Bryan Lawlis, Ph.D.(1)	36,800
Sandesh Mahatme	82,209
Russell J. Cox	82,209
Suzanne Bruhn, Ph.D.	100,400
Ivana Magovcevic-Liebisch, Ph.D.(2)	36,800

- (1) Dr. Lawlis joined our board of directors in July 2018.
- (2) Dr. Magovcevic-Liebisch joined our board of directors in March 2018.

#### **Non-Employee Director Compensation Arrangements**

For the year ended December 31, 2018, 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. 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 THREE NOMINATED DIRECTORS**

## PROPOSAL NO. 2

### 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, 2019 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, 2018. 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, 2018 and 2017:

	2018	2017
Audit fees(1)	\$ 476,000	\$ 381,000
Audit related fees(2)	\$ 50,000	\$ 26,000
Tax fees(3)	\$ 73,000	\$ 39,000
All other fees(4)	\$ —	\$ —
Total fees	\$ 599,000	\$ 446,000

- (1) "Audit fees" include fees billed for professional services primarily related to the audits of our 2018 and 2017 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 May 2017 and April 2018, respectively. Included in the 2018 and 2017 audit fees are fees of \$70,500 and \$65,000, respectively, related to our at-the-market offerings and our public offerings in May 2017 and April 2018, respectively.
- (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 2018 and 2017 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; 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" include the aggregate fees billed in fiscal years 2018 and 2017 for products and services provided by PricewaterhouseCoopers LLP, other than included in "Audit Fees," "Audit-Related Fees" and "Tax Fees."

#### 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, 2019**

## 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, 2019, 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 28,837,352 shares of our common stock outstanding on March 31, 2019. 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, 2019. 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. 901 S. MoPac Expressway, Barton Oaks Plaza One, Suite 250, Austin, Texas 78746.

Name of Beneficial Owner	Number of Shares Beneficially Owned	Percentage Owned
<b>5% Stockholders:</b>		
Nantahala Capital Management, LLC (1)	2,652,260	9.2%
Lilly Ventures Fund I LLC (2)	2,568,543	8.9
OrbiMed Private Investments V, LP (3)	2,165,524	7.5
Entities affiliated with Baker Bros. Advisors LP(4)	1,713,604	5.9
Entities affiliated with Adage Capital Management, L.P.(5)	1,458,591	5.1
<b>Directors and Named Executive Officers:</b>		
Anthony G. Quinn, M.B Ch.B, Ph.D. (6)	366,846	1.3
Charles N. York II (7)	256,156	*
James Wooldridge, M.D. (8)	99,420	*
Armen Shanafelt, Ph.D. (9)	2,639,409	9.1
Sandesh Mahatme (10)	80,675	*
Russell J. Cox (11)	87,675	*
Suzanne Bruhn, Ph.D. (12)	78,366	*
Ivana Magovcevic-Liebisch, Ph.D. (13)	14,311	*
V. Bryan Lawlis, Ph.D.(14)	10,222	*
Total Executive Officers and Directors as a Group (11 people) (15)	3,748,574	12.6%

\*Represents beneficial ownership of less than one percent.

- (1) Based on information obtained from third party sources and on a Schedule 13G/A filed by Nantahala Capital Management, LLC (Nantahala) on February 14, 2019 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 Members) of Nantahala are Daniel Mack and Wilmot Harkey. The Members share voting and dispositive power with regard to the shares directly held by Nantahala. The Members disclaim beneficial ownership over such shares, except to the extent of any pecuniary interest therein. The mailing addresses of the beneficial owners are 19 Old Kings Highway S, Suite 200, Darien, CT 06820.

- (2) 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 Edward Torres, Steven Hall, and Dr. Shanafelt (collectively, the Members). As such, the Members are deemed to share voting and dispositive power with regard to the shares directly held by the LVFI. The mailing addresses of the beneficial owners is 115 West Washington Street, Suite 1680-South, Indianapolis, IN 46204.
- (3) Based solely on a Schedule 13G/A filed by OrbiMed Private Investment V, LP (OPI V) on February 13, 2019 with the SEC. Represents shares of common stock held by 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 Advisors LLC (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. Accordingly, GP V and OrbiMed may be deemed to have voting and investment 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.
- (4) Based solely on a Schedule 13G/A filed by Baker Bros. Advisors LP (Adviser) on February 13, 2019 with the SEC. Represents shares of common stock held by the 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.
- (5) Based solely on a Schedule 13G filed by Adage Capital Partners GP, L.L.C. on October 11, 2018. Represents 1,458,591 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.
- (6) Represents (i) 277,152 shares of common stock held by Dr. Quinn and (ii) options exercisable for 89,694 shares of common stock within 60 days of March 31, 2019.
- (7) Represents (i) 49,503 shares of common stock held by Mr. York and (ii) options exercisable for 206,653 shares of common stock within 60 days of March 31, 2019.
- (8) Represents (i) 2,642 shares of common stock held by Dr. Wooldridge and (iii) options exercisable for 96,778 shares of common stock within 60 days of March 31, 2019.
- (9) Represents (i) 2,568,543 shares of common stock held by LVFI and (ii) options exercisable for 70,866 shares of common stock within 60 days of March 31, 2019 held by Dr. Shanafelt, of which LVMG has voting and dispositive power over 70,866 of such shares.
- (10) Represents options exercisable for 80,675 shares of common stock within 60 days of March 31, 2019.
- (11) Represents (i) 7,000 shares of common stock held by Mr. Cox and (ii) options exercisable for 80,675 shares of common stock within 60 days of March 31, 2019.
- (12) Represents options exercisable for 78,366 shares of common stock within 60 days of March 31, 2019.
- (13) Represents options exercisable for 14,311 shares of common stock within 60 days of March 31, 2019.
- (14) Represents options exercisable for 10,222 shares of common stock within 60 days of March 31, 2019.
- (15) Represents (i) 2,911,522 shares of common stock and (ii) options exercisable for 837,052 shares of common stock within 60 days of March 31, 2019.

## EXECUTIVE OFFICERS

The names of our current executive officers, their ages as of March 31, 2019, 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
Aaron Schuchart	54	Chief Business Officer
James Wooldridge, M.D.	53	Chief Medical Officer
Leslie Sloan	48	Chief Operating 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 was appointed Chief Financial Officer and Vice President, in 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.

*Aaron Schuchart.* Mr. Schuchart joined our company as Chief Business Officer in May 2017. Prior to joining our company, Mr. Schuchart served as Senior Vice President, Business Development of Coherus Biosciences, a biopharmaceutical company from November 2014 through May 2017. From November 2013 to November 2014, Mr. Schuchart was the Global Head of Business Development and Strategy at Novartis Diagnostics, a global healthcare company. Prior to that, Mr. Schuchart served as Managing Director of Proaltus Partners, LLC since 2010. Mr. Schuchart holds a BBA in Accounting from Texas Tech University and an MBA from the UCLA Anderson School of Management.

*James Wooldridge, M.D.* Dr. Wooldridge joined our company as Chief Medical Officer in July 2017. Prior to joining our company, Dr. Wooldridge served in various leadership roles at Eli Lilly & Company, a global pharmaceutical company, since October 2006, including as Senior Medical Director, Oncology U.S. Medical Affairs, and Chief Scientific Officer for Immuno-oncology Clinical Development. Prior to that, Dr. Wooldridge served as Assistant Professor at the Ellis Fischel Cancer Center of the University of Missouri as well as at the Holden Comprehensive Cancer Center of the University of Iowa Hospitals and Clinics. Dr. Wooldridge holds an A.B. in Chemistry and Philosophy from William Jewell College, and an M.D. from Tulane University.

*Leslie Sloan, Ph.D.* Dr. Sloan was appointed Chief Operating Officer in March 2019 after joining our company as Vice President of Operations in August 2017. 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, she 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.

## 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 2018. The compensation provided to our Named Executive Officers for fiscal year 2018 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 2018 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;
- James Wooldridge, M.D. our Chief Medical 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, 2018 and 2017.

Name and Principal Position	Year	Salary (\$)	Bonus \$(1)	Equity Awards \$(2)	All Other Compensation (\$)	Total (\$)
Anthony G. Quinn, M.B Ch.B, Ph.D.	2018	507,000	304,000	2,919,543	111,591 (3)	3,842,134
<i>Chief Executive Officer</i>	2017	295,308 (4)	150,000	544,622	37,837 (5)	1,027,767
Charles N. York II	2018	343,000	185,000	424,842	7,981 (6)	960,823
<i>Chief Financial Officer and Vice President</i>	2017	325,000	130,000	660,082	15,707 (6)	1,130,789
James Wooldridge, M.D.	2018	380,000	135,000	209,254	19,759 (6)	744,013
<i>Chief Medical Officer</i>	2017	162,917	59,000	393,409	317,262 (7)	932,588

- (1) Discretionary cash bonuses earned in 2018 and paid in 2019, based in part on achievement of specified milestones and performance objectives. Amounts for 2017 represent discretionary cash bonuses earned in 2017, and paid in 2018, 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, 2018 and 2017, 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 9 to our consolidated financial statements included in our annual report on Form 10-K for the year ended December 31, 2018. 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) 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.
- (4) Represents (i) \$206,208 paid to Dr. Quinn in connection with his employment as interim Chief Medical Officer and (ii) \$89,100 paid to Dr. Quinn in connection with his employment as interim Chief Executive Officer.
- (5) Represents (i) \$31,203 paid to Dr. Quinn in connection with his service as a director and (ii) health insurance premiums paid by us in the applicable period on behalf of Dr. Quinn of \$6,634.
- (6) Represents a health insurance premium paid by us in the applicable period on behalf of each of our Named Executive Officers.
- (7) Represents (i) a one-time sign-on bonus of \$276,000, (ii) health insurance premiums paid by us in the applicable period on behalf of Dr. Wooldridge of \$7,961 and (iii) moving expenses paid by us in the applicable period on behalf of Dr. Wooldridge of \$33,301.

## Outstanding Equity Awards at December 31, 2018

The following table presents, for our Named Executive Officers, information regarding outstanding equity awards held as of December 31, 2018.

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.	—	1,985 (1)	5.46	3/18/2026
	3,716	141,234 (2)	6.31	2/19/2028
	31,249	268,751 (3)	9.36	7/17/2028
	—	75,000 (4)	9.36	7/18/2028
	—	75,000 (5)	9.36	7/18/2028
	—	50,000 (6)	9.36	7/18/2028
Charles N. York II	35,520	19,480 (7)	7.28	5/16/2026
	39,375	50,625 (8)	8.03	3/19/2027
	29,250	29,250 (9)	3.10	8/21/2027
	10,183	— (10)	3.47	3/31/2025
	20,866	1,392 (11)	3.47	3/31/2025
	14,087	940 (11)	3.47	3/31/2025
	19,187	72,913 (2)	6.31	2/19/2028
James Wooldridge, M.D.	58,437	106,563 (12)	3.10	8/21/2027
	5,000	5,000 (9)	3.10	8/21/2027
	9,375	35,625 (2)	6.31	2/19/2028

- (1) These stock options vest as follows: 1/36th of the shares of common stock underlying the options vest on April 3, 2016 and each month thereafter.
- (2) 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.
- (3) 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.
- (4) These stock options vest and become exercisable contingent upon achievement of certain stock price milestones.
- (5) These stock options vest and become exercisable contingent upon achievement of certain product development milestones.
- (6) These stock options vest and become exercisable contingent upon achievement of certain regulatory milestones.
- (7) 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.
- (8) 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.
- (9) 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.
- (10) 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.
- (11) 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.
- (12) These stock options vest as follows: 25% of the shares of common stock underlying the options vest on July 10, 2018 and an additional 1/48th of the shares of common stock underlying the options vest at the end of 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.

### ***James Wooldridge, M.D.***

Pursuant to an offer letter dated June 20, 2017, Dr. Wooldridge serves as our Chief Medical Officer. Dr. Wooldridge's offer letter sets forth the principal terms and conditions of his employment, including his initial annual base salary of \$340,000, a one-time signing bonus of \$276,000, and an annual target bonus opportunity of 40% of his base salary (which bonus is earned based on our achievement of specified milestones and performance objectives, as well as Dr. Wooldridge'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. Wooldridge's offer letter provides for the grant of 165,000 shares of our common stock under our 2016 Equity Incentive Plan and the shares vest over four years. Pursuant to the terms of his severance agreement, Dr. Wooldridge is 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; 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; 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; 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, Dr. Wooldridge 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; 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; 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, 2018 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(#)	Weighted-average exercise price of outstanding options, warrants and rights(\$)	Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a))(#)
	(a)	(b)	(c)
Equity compensation plans approved by security holders	3,028,787	(1) \$ 6.67	1,587,575
Equity compensation plans not approved by security holders	113,900	10.37	986,100
Total	3,142,687	6.67	2,573,675

(1) Includes our 2015 Plan and 2016 Plan.

(2) Includes 50,851 shares that remain available for purchase under the 2016 Employee Stock Purchase Plan and 1,536,724 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 965,603 shares on January 1, 2019. 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 241,400 shares on January 1, 2019.

(3) Includes 986,100 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, since January 1, 2018, we were not a party to any transactions 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.

### **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, 2018. 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, 2018 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.

## ADDITIONAL INFORMATION

### 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., 901 S. MoPac Expressway, Barton Oaks Plaza One, Suite 250, Austin, Texas 78746, Attn: Corporate Secretary.

To be timely for the 2020 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, 2020 and not later than 5:00 p.m. Central Time on March 24, 2020. However, if the date of our 2019 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 2019 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 2020 Annual Meeting must be received by the Company not later than December 24, 2019 in order to be considered for inclusion in Aeglea's proxy materials for the 2020 Annual Meeting.

### Section 16(a) Beneficial Ownership Reporting Compliance

Section 16(a) of the Exchange Act requires Aeglea's directors, executive officers and any persons who own more than 10% of Aeglea's common stock, to file initial reports of ownership and reports of changes in ownership with the SEC. Such persons are required by SEC regulation to furnish Aeglea with copies of all Section 16(a) forms that they file. Based solely on its review of the copies of such forms furnished to Aeglea and written representations from the directors and executive officers, Aeglea believes that all Section 16(a) filing requirements were timely met in the year ended December 31, 2018.

### 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, 2018, including the financial statements and list of exhibits, and any exhibit specifically requested. Requests should be sent to:

**Aeglea BioTherapeutics, Inc.**  
**901 S. MoPac Expressway**  
**Barton Oaks Plaza One, Suite 250**  
**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](http://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](http://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 15<sup>th</sup> 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 901 S. MoPac Expressway, Barton Oaks Plaza One, Suite 250, 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.**  
**901 S. MOPAC EXPRESSWAY**  
**BARTON OAKS PLAZA ONE**  
**SUITE 250**  
**AUSTIN, TX 78746**

**VOTE BY INTERNET - [www.proxyvote.com](http://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 6, 2019. 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 6, 2019. 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:

E71394-P22815

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

**THIS PROXY CARD IS VALID ONLY WHEN SIGNED AND DATED.**

<p><b>AEGLEA BIOTHERAPEUTICS, INC.</b></p> <p><b>The Board of Directors recommends you vote FOR the following:</b></p> <p>1. Election of Class III Directors</p> <p style="margin-left: 20px;"><b>Nominees:</b></p> <p style="margin-left: 20px;">01) Armen Shanafelt, Ph.D.          02) V. Bryan Lawlis, Ph.D.          03) Anthony G. Quinn, M.B. Ch.B., Ph.D.</p> <p><b>The Board of Directors recommends you vote FOR proposal 2.</b></p> <p>2. Ratify the appointment of PricewaterhouseCoopers LLP as the independent registered public accounting firm for the fiscal year ending December 31, 2019.</p> <p><b>NOTE:</b> Such other business as may properly come before the meeting or any adjournment thereof.</p> <p style="font-size: small; margin-top: 20px;">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.</p>	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;"><b>For All</b></td> <td style="width: 33%;"><b>Withhold All</b></td> <td style="width: 33%;"><b>For All Except</b></td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> </table> <p style="font-size: x-small; margin-top: 5px;">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.</p> <hr style="width: 80%; margin-left: 0;"/>	<b>For All</b>	<b>Withhold All</b>	<b>For All Except</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
<b>For All</b>	<b>Withhold All</b>	<b>For All Except</b>							
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>							
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 70%;"></td> <td style="width: 30%; text-align: center;"><b>For Against Abstain</b></td> </tr> <tr> <td style="vertical-align: top;"> <p>2. Ratify the appointment of PricewaterhouseCoopers LLP as the independent registered public accounting firm for the fiscal year ending December 31, 2019.</p> </td> <td style="text-align: center; vertical-align: top;"> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> </td> </tr> </table>		<b>For Against Abstain</b>	<p>2. Ratify the appointment of PricewaterhouseCoopers LLP as the independent registered public accounting firm for the fiscal year ending December 31, 2019.</p>	<p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p>					
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<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; border-bottom: 1px solid black; height: 20px;"></td> <td style="width: 10%;"></td> <td style="width: 40%; border-bottom: 1px solid black; height: 20px;"></td> <td style="width: 10%;"></td> </tr> <tr> <td style="font-size: x-small;">Signature [PLEASE SIGN WITHIN BOX]</td> <td style="font-size: x-small;">Date</td> <td style="font-size: x-small;">Signature (Joint Owners)</td> <td style="font-size: x-small;">Date</td> </tr> </table>					Signature [PLEASE SIGN WITHIN BOX]	Date	Signature (Joint Owners)	Date	
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](http://www.proxyvote.com).

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**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 7, 2019 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