

AEGLEA BIOTHERAPEUTICS, INC.

CORPORATE GOVERNANCE GUIDELINES

As adopted June 29, 2015

Pursuant to the recommendations of its Nominating and Corporate Governance Committee (the “*Committee*”), the Board of Directors (the “*Board*”) of Aeglea BioTherapeutics, Inc. (the “*Company*”) has adopted the following Corporate Governance Guidelines (the “*Guidelines*”), to promote the effective functioning of the Board and its committees, to promote the interests of stockholders and to ensure a common set of expectations as to how the Board, its various committees, individual directors and management should perform their functions. These Guidelines are intended to serve as a flexible framework within which the Board may conduct its business, not as a set of binding legal obligations.

I. RESPONSIBILITIES OF THE BOARD OF DIRECTORS

The Board acts as the management team’s adviser and monitors management’s performance. The Board is ultimately responsible for oversight of the Company’s legal compliance program, which is designed to protect the Company against violations of law or Company policies and procedures, and to assess risks facing the Company and management’s approach to addressing such risks. The Board also reviews and, if appropriate, approves significant transactions and develops standards to be utilized by management in determining the types of transactions that should be submitted to the Board for review and approval or notification.

Each member of the Board is expected to spend the time and effort necessary to properly discharge such director’s responsibilities. Accordingly, a director is expected to regularly attend meetings of the Board and Board committees on which such director sits, and review prior to each meeting the material distributed in advance for such meeting. A director who is unable to attend a meeting (which it is understood will occur on occasion) is expected to notify the Chair or the chair of the appropriate committee in advance of such meeting.

II. INDEPENDENCE OF THE BOARD

The Board shall be comprised of a majority of directors who, in the business judgment of the Board, qualify as independent directors (“*Independent Directors*”) under the applicable rules, regulations, and listing requirements of The NASDAQ Stock Market or other applicable exchange, as amended from time to time, and these Corporate Governance Guidelines.

III. SIZE OF THE BOARD

The Board shall periodically review the size of the Board, which may be increased or decreased if determined to be appropriate by the Board.

IV. MEETINGS OF THE BOARD

The Board's policy is to hold at least four regularly scheduled meetings of the Board each year. At least one regularly scheduled meeting of the Board shall be held each quarter, plus special meetings as required by the needs of the Company. The Chief Executive Officer or the Chair of the Board shall propose an agenda for each meeting. Management will provide materials in a reasonable period of time in advance of a meeting, and the members of the Board are expected to familiarize themselves with them.

V. LEAD INDEPENDENT DIRECTOR

When the positions of Chair and Chief Executive Officer are held by the same person, the independent directors may designate a Lead Independent Director. In cases in which the Chair and Chief Executive Officer are the same person, the Chair, with the Lead Independent Director, may schedule and set the agenda for meetings of the Board, and the Chair or, if the Chair is not present, the Lead Independent Director, may chair such meetings. In addition, the Lead Independent Director may preside over executive sessions of independent directors, serve as a liaison between the Chair and the independent directors, coordinate information sent to the Board, approve meeting schedules to ensure sufficient time to cover all agenda items, be available for consultation and direct communication with major stockholders upon request and perform such other functions and responsibilities as requested by the Board from time to time.

VI. SELECTION OF DIRECTORS

The Committee shall be responsible for nominating members for election to the Board and for filling vacancies on the Board that may occur between annual meetings of stockholders. The Committee is responsible for identifying, considering, recruiting and recommending candidates to the Board for Board membership. When formulating its Board membership recommendations, the Committee shall also consider advice and recommendations from stockholders, management and others as it deems appropriate.

VII. BOARD MEMBERSHIP CRITERIA

The Board's policy is to encourage selection of directors who will contribute to the Company's overall corporate goals. The Committee may from time to time review and recommend to the Board the desired qualifications, expertise and characteristics of directors, including such factors as business experience, diversity and personal skills in technology, finance, marketing, financial reporting and other areas that are expected to contribute to an effective Board. Exceptional candidates who do not meet all of these criteria may still be considered. In evaluating potential candidates for the Board, the Committee considers these factors in the light of the specific needs of the Board at that time.

VIII. OTHER PUBLIC COMPANY DIRECTORSHIPS

The Committee, in making its recommendations, shall consider the number of other public company boards and other boards (or comparable governing bodies) on which a

prospective nominee is a member. Directors are also expected to limit the number of other boards, including non-profits, on which they serve in order to devote adequate time and effort to their Board responsibilities.

IX. DIRECTORS WHO CHANGE THEIR PRESENT JOB RESPONSIBILITY

The Board does not believe directors who retire or change their principal occupation or business association should necessarily leave the Board; however, there should be an opportunity for the Board, through the Committee, to review the continued appropriateness of Board membership under these circumstances.

X. RETIREMENT AGE

The Board does not believe that a fixed retirement age for directors is appropriate.

XI. DIRECTOR TENURE

The Board is classified into three classes, with the members of each class being elected once every three years. There are no limits on the number of three-year terms that may be served by a director. However, in connection with evaluating recommendations for nomination for re-election, the Committee shall consider director tenure.

XII. NUMBER AND COMPOSITION OF BOARD COMMITTEES

The purpose and responsibilities for each of the Board's committees shall be outlined in committee charters adopted by the Board. The Board may, from time to time, form new committees, re-allocate responsibilities of one committee to another committee or disband a current committee. In addition, the Board may form ad hoc committees from time to time, and determine the composition and areas of competence of such committees.

XIII. EXECUTIVE SESSIONS

It is the policy of the Board that the independent members of the Board meet separately without management directors at least once per year to discuss such matters as the independent directors consider appropriate. The Company's independent auditors, finance staff and other employees may be invited to attend these meetings.

XIV. DIRECTOR COMPENSATION

Non-employee directors may receive compensation consisting of cash and/or equity. Employee directors may not be paid additional compensation for their services as directors. The Compensation Committee shall recommend to the Board the form and amount of cash-based and/or equity-based compensation to be paid or awarded to non-employee directors for service on the Board and its committees. The Compensation Committee may base its recommendations on board compensation practices of other public companies, contributions to Board functions, service as committee chairs and other appropriate factors.

XV. DIRECTOR STOCK OWNERSHIP

The Compensation Committee will periodically assess the appropriateness of stock ownership guidelines for directors and senior executives, including whether and to what extent executives should be restricted from selling stock acquired through equity compensation.

XVI. BOARD ACCESS TO MANAGEMENT

Directors are encouraged to speak directly to any member of management regarding any questions or concerns the directors may have.

XVII. ATTENDANCE AT ANNUAL MEETING OF STOCKHOLDERS

Directors are invited and encouraged to attend the Company's annual stockholder meeting.

XVIII. DIRECTOR ORIENTATION AND CONTINUING EDUCATION

The Company shall provide for an orientation process for new directors that includes background material, meetings with senior management and visits to Company facilities. Directors may be expected, based on the recommendations of the Committee, to participate in continuing educational programs in order to maintain the necessary level of expertise to perform their responsibilities as directors.

XIX. FORMAL EVALUATION OF OFFICERS

The formal evaluation of the performance of the Chief Executive Officer should be made in the context of the Chief Executive Officer's annual compensation review by the Compensation Committee of the Board, with appropriate input from other Board members, and should be communicated to the Chief Executive Officer by the Chair of the Compensation Committee. In consultation with the Chief Executive Officer, the Compensation Committee will also review the performance of each other officer in connection with the determination of the salary and bonus for those officers. The Compensation Committee will provide a report to the Board on these performance evaluations.

XX. SUCCESSION PLANNING

The Board, working with the Committee, is responsible for Chief Executive Officer succession planning, and only the Board may appoint a Chief Executive Officer. As part of this process, the Committee, in consultation with the Chief Executive Officer, should assess management needs and abilities of potential successors. The Board may also monitor management's succession plans for other key executives and leadership development programs.

XXI. AUTHORITY TO RETAIN ADVISERS

The Board and each of its committees have the authority, at the Company's expense, to retain and terminate independent advisers as the Board and any such committee deems necessary.

XXII. EVALUATION OF BOARD PERFORMANCE

The Board and each of its committees shall conduct a self-evaluation annually. Board committees shall assess their performance relative to their charter and best practices. The Committee will oversee an annual assessment of the Board and each committee of the Board. The Committee will utilize the results of this self-evaluation process to assess the effectiveness of the Board and its committees, determine the desired qualifications, expertise and characteristics of Board nominees, and make recommendation to the Board regarding assigning directors to various Board committees. The Board will discuss the evaluation results to determine what action, if any, would improve Board and committee performance, and whether any changes to the Corporate Governance Guidelines would be appropriate.

XXIII. AMENDMENTS

The Board may amend or grant waivers of these Corporate Governance Guidelines, provided that any such modification or waiver may not be a violation of any applicable law, rule or regulation, and, provided further, that any such modification or waiver is appropriately disclosed.