

**Acceleron Pharma Inc.
Compensation Committee Charter**

(Amended & Restated as of June 6, 2019)

PURPOSE

The Compensation Committee (the “*Committee*”) shall assist the Board of Directors (the “*Board*”) of Acceleron Pharma Inc., a Delaware corporation (the “*Company*”), in fulfilling its responsibilities relating to oversight of the compensation of the Company's executive officers and other employees and the Company's benefit and equity-based compensation programs.

ORGANIZATION

Membership

The Committee shall at all times consist of at least three directors, including a Chairman, all appointed by the Board, with the Chairman and each member to serve until his or her successor is duly appointed, or until his or her earlier death, resignation or removal by the Board. Each member of the Committee shall be independent in accordance with the provisions of Rule 10C-1(b)(1) under the Securities Exchange Act of 1934, as amended, and the rules of the NASDAQ Global Select Market. In addition, each member of the Committee shall qualify as an “outside director” within the meaning of Section 162(m) of the Internal Revenue Code and as a “non-employee director” within the meaning of Rule 16b-3 under the Securities Exchange Act of 1934, as amended.

Meetings

- Fifty percent of the members of the Committee shall constitute a quorum.
- Action may be taken by the Committee upon the affirmative vote of a majority of the members present;
- Any two members or the Chairman of the Committee may call a meeting of the Committee upon due notice to each other member in the manner specified in Section 2.4 of the Amended and Restated By-Laws of the Company;
- Action may be taken by the Committee without a meeting if all of the members of the Committee indicate their approval thereof in writing; and
- The Committee shall have the authority to delegate to subcommittees of the Committee any of the responsibilities of the full Committee.
- Committee meetings may be held in person or telephonically. The Committee shall keep written minutes of its meetings and submit such minutes to the Board.

AUTHORITY AND RESPONSIBILITIES

Overall Objective

Through the various responsibilities discussed below the Committee shall be responsible for establishing and reviewing the Company’s overall management compensation philosophy and

policy, including base salary, incentive compensation and equity-based grants, to assure that the Company provides appropriate rewards and incentives for the Company's management and employees, taking into account whether such rewards and incentives encourage undue or inappropriate risk taking by such personnel.

Chief Executive Officer Evaluation and Compensation

The Committee shall annually review and recommend to the Board the corporate goals and objectives with respect to the compensation for the Chief Executive Officer (“CEO”). The Committee shall evaluate at least once a year the CEO's performance in light of these established goals and objectives. The Committee shall, independently as a Committee or together with the other independent directors (as directed by the Board), annually review and recommend the compensation of the CEO based on the evaluation of his or her performance on pre-established goals and objectives, including, but not limited to, salary, bonus and incentive compensation levels; deferred compensation; executive perquisites; equity based compensation; severance arrangements; and change-in-control benefits. The CEO shall not be present during the Committee's deliberations on the compensation of the CEO.

Compensation of Other Executive Officers

The Committee shall annually review, determine and approve the compensation structure for the Company's executive officers other than the CEO, including specific approval of salary, bonus, and incentive and equity compensation for executive officers.

When it is determined by the Committee that a consulting firm (or other expert) is to assist in the assessment of the CEO or other senior executive officer compensation, the Committee shall have authority to retain and terminate such firm or experts and have the authority to approve the consulting firm's or other expert's fee and other retention terms. The Committee shall have the authority to retain legal, accounting or other experts that determines to be necessary to carry out its duties and to determine compensation for such advisors.

Employment or Removal of Executive Officers

The hiring or termination of employment of any executive officer of the Company other than the CEO is subject to review and approval by the Committee.

Compensation Plans

The Committee shall make recommendations to the Board regarding the adoption of new employee incentive compensation plans and equity-based plans, administer the Company's existing incentive compensation plans and equity-based plans, and grant awards under such plans.

Director Compensation

The Committee shall periodically evaluate and make recommendations to the Board with respect to appropriate forms and amounts of compensation for non-employee directors of the Company.

Annual Evaluation of Risks of Compensation Policies and Practices

At least annually, the Committee shall review the Company's compensation policies and practices with respect to the Company's employees, including non-executive officers, to determine whether they encourage excessive risk-taking, review and discuss the relationship between risk management policies and practices and compensation and evaluate compensation policies and practices that could mitigate risk.

Access to Records and Personnel

The Committee shall have full access to any relevant records of the Company that it deems necessary to carry out its responsibilities. The Committee may request that any officer or other employee of the Company or any advisor to the Company meet with members of the Committee or its advisors, as it deems necessary to carry out its responsibilities.

Retention of Advisors

The Committee shall have the sole authority to engage, terminate, evaluate conflicts of interest (if any), and determine funding and other retention terms for such independent legal counsel, amounting advisors, compensation consultants and other advisors as it deems necessary to carry out its responsibilities and to cause the Company to pay the compensation of such advisors. Prior to receiving advice from or retaining any such advisor, the Committee shall consider the independence of such advisor using the factors described in NASDAQ Listing Rule 5605(d)(3); provided, however, that the Committee shall not be required to conduct such analysis with respect to an advisor that acts in a role limited to (a) consulting on any broad-based plan that does not discriminate in scope, terms or operation in favor of executive officers or members of the Board, and that is generally available to all salaried employees, and/or (b) providing information that either is not customized for the Company or that is customized based on parameters that are not developed by the advisor, and about which the advisor does not provide advice.

Reports to Board of Directors

The Committee shall report periodically to the Board regarding Committee matters and/or the meetings of the Committee with such recommendations to the Board as the Committee deems appropriate.

Periodic Review of this Charter

The Committee shall periodically review and reassess the adequacy of this Charter and recommend any proposed changes to the Board for approval.

Committee Performance Evaluation

The Committee shall evaluate its performance on an annual basis and develop criteria for such evaluation. The Committee shall report to the full Board on the results of its assessment each year and shall make any appropriate recommendations to further enhance the Committee's performance.

Report on Executive Compensation and other Regulatory Compliance Matters

The Committee shall be responsible for the production of a compensation committee report on executive compensation as required by the Securities and Exchange Commission (the "SEC") to be included in the Company's annual proxy statement or annual report on Form 10-K filed with the SEC.

Other Responsibilities

The Committee shall take such other action with respect to compensation matters as may be delegated from time to time by the Board. The Committee shall discharge its responsibilities, and shall assess the information provided to the Committee, in accordance with its business judgment. The Committee shall have the authority to conduct or authorize investigations into any matters within the scope of its responsibilities as it shall deem appropriate.