#### <u>UPSTREAM BIO, INC.</u>

# Compensation Committee Charter

# I. General Statement of Purpose

The purpose of the Compensation Committee (the "Compensation Committee") of the Board of Directors (the "Board") of Upstream Bio, Inc. (the "Company") is to discharge certain of the Board's responsibilities relating to compensation of the Company's non-employee directors and executive officers, oversee the Company's overall compensation structure, policies and programs, and review the Company's processes and procedures for the consideration and determination of non-employee director and executive officer compensation. The primary objective of the Compensation Committee is to develop and implement compensation policies and plans that ensure the attraction and retention of key management personnel, the motivation of management to achieve the Company's corporate goals and strategies and the alignment of the interests of management with the long-term interests of the Company's stockholders. The Compensation Committee may also review and discuss with management the Company's key human resource management strategies and programs, including (i) diversity, equity and inclusion; (ii) employee health, safety and well-being and (iii) initiatives and programs related to corporate culture and employee engagement.

# II. Composition

The number of individuals serving on the Compensation Committee shall be fixed by the Board from time to time but shall consist of no fewer than two (2) members, each of whom shall satisfy the independence standards established pursuant to Rule 5605(a)(2) of the Nasdaq Stock Market Rules, subject to any applicable exceptions in the Nasdaq Stock Market Rules. In determining the members of the Compensation Committee, the Board will consider whether the members qualify as "non-employee directors" as defined in Rule 16b-3 under the Securities Exchange Act of 1934, as amended (the "Exchange Act").

The Board shall appoint the members of the Compensation Committee annually and may replace or remove them at any time, with or without cause. Resignation or removal of a director from the Board, for whatever reason, shall automatically constitute resignation or removal, as applicable, from the Compensation Committee. Vacancies, for whatever reason, may be filled only by the Board. The Board shall designate one member of the Compensation Committee to serve as chair of the Compensation Committee (the "Chair").

#### III. Meetings

The Compensation Committee shall meet as often as it determines appropriate, in person, by video or telephone conference or by other means of communications by which all participants can hear each other. A majority of the members of the Compensation Committee shall constitute a quorum for purposes of holding a meeting, and the Compensation Committee may act by vote of a majority of members present at a meeting. In lieu of a meeting, the Compensation Committee may act by unanimous written consent (which may include electronic consent) in accordance with the Company's bylaws. The Chair of the Compensation Committee, in

consultation with the other members and management, may set meeting agendas consistent with this Compensation Committee Charter (the "Charter").

# IV. Compensation Committee Responsibilities and Duties

The Compensation Committee's responsibilities and duties shall include, but are not limited to:

## A. Company's Chief Executive Officer Compensation

- Review and recommend to the Board for approval the corporate goals and objectives to be considered in determining the compensation of the Company's Chief Executive Officer (the "CEO").
- Evaluate the CEO's performance based on the goals and objectives that were set for the CEO and recommend to the Board for approval the CEO's compensation based on that evaluation.
- In formulating its recommendation to the Board regarding the long-term incentive component of the CEO's compensation, consider the Company's performance and stockholder return, the value of similar incentive awards to CEOs at comparable companies and previous awards made by the Company to the CEO over the past two (2) years.
- Review periodically the aggregate amount of compensation being paid or potentially payable to the CEO.
- Periodically review and recommend to the Board for approval (a) any employment agreements, severance arrangements and change in control agreements or provisions, in each case, when and if appropriate and (b) any special or supplemental benefits.
- Exclude the CEO during voting or deliberations regarding the CEO's compensation.

## B. Executive Compensation (other than the Chief Executive Officer)

- Review and approve the compensation structure, including salaries, bonuses, long-term incentives (including equity-based awards), and other benefits for all executive officers of the Company other than the CEO and, at the discretion of the Compensation Committee, other members of senior management; for this purpose, the term "officer" has the meaning defined in Rule 16a-1 promulgated under the Exchange Act.
- Oversee an annual compensation evaluation of all "officers" of the Company other than the CEO and, at the discretion of the Compensation Committee, other members of senior management.

- Review periodically the aggregate amount of compensation being paid or potentially payable to all "officers" of the Company, and at the discretion of the Compensation Committee, other members of senior management.
- For the "officers" of the Company other than the CEO, and at the discretion of the Compensation Committee, other members of senior management, periodically review and approve (a) any employment agreements, severance arrangements and change in control agreements or provisions, in each case, when and if appropriate and (b) any special or supplemental benefits.

# C. Non-Employee Director and Executive Officer Compensation

• Periodically review and make recommendations to the Board regarding the compensation of non-employee directors, including fees, long-term incentives (including equity-based awards), and other benefits.

# D. Processes and Procedures for Considering and Determining Non-Employee Director and Executive Officer Compensation

- Review and reassess periodically (and where appropriate, make such recommendations to the Board as the Compensation Committee deems advisable with regard to) the Company's processes and procedures for considering and determining non-employee director and executive officer compensation, and review and discuss with management the description, if any, of such processes and procedures to be included in the Company's proxy statement or annual report on Form 10-K.
- Review and assess the results of the most recent stockholder advisory vote on
  executive compensation, if any, and, to the extent the Compensation
  Committee deems appropriate, take such results into consideration in
  connection with its review and approval of compensation for executive
  officers.

#### E. Compensation Committee Report

- Review and discuss with management the Compensation Discussion and Analysis, if any, to be included in the Company's proxy statement or annual report on Form 10-K ("CD&A").
- Based on its review and discussions with management, recommend to the Board that the CD&A, if and when required, be included in the Company's proxy statement or annual report on Form 10-K.
- Review and approve the Compensation Committee Report, if and when required, to be included in the Company's proxy statement or annual report on Form 10-K in accordance with the rules and regulations of the Securities and

Exchange Commission, the Nasdaq Stock Market rules, and any other rules and regulations applicable to the Company.

# F. Incentive-Based Compensation and Equity-Based Plans

- Review and approve grants and awards under incentive-based compensation
  plans and equity-based plans, in each case consistent with the terms of such
  plans.
- Oversee and recommend to the Board the establishment and modification of executive incentive plans, such as annual short-term incentive plans, long-term incentive plans, including equity-based compensation programs.
- Review and recommend to the Board policies and procedures for the grant of
  equity-based compensation, including the Company's Equity Award Grant
  Policy as may be in effect from time to time.
- Act as the administrator under the Company's equity-based plans.
- Oversee administration of all incentive compensation and equity-based plans for employees and approve all forms of award agreement and/or sub-plans adopted thereunder.

# G. Compliance

• Oversee compliance of compensation-related practices with legal and regulatory requirements, including tax laws and accounting standards.

#### H. Compensation Recovery Policy

• The Compensation Committee has the authority to adopt and administer a compensation recovery policy including, without limitation, a policy designed to comply with any rules or regulations adopted by the Securities and Exchange Commission and Nasdaq pursuant to Section 10D of the Exchange Act.

#### I. Annual Evaluation of the Compensation Committee

• Conduct an annual self-evaluation of the Compensation Committee's performance and effectiveness and report the results to the Nominating and Corporate Governance Committee.

#### J. Review of Charter

• Annually review and reassess the adequacy of this Charter and submit any proposed changes to the Board for approval.

# V. Additional Compensation Committee Authority

The Compensation Committee is authorized, on behalf of the Board, to do any of the following:

## A. Compensation Consulting Firms or Other Outside Advisers

- Retain or obtain the advice of compensation consultants, legal counsel and/or other advisers as it deems necessary or as required by applicable regulations.
- Have sole responsibility for the appointment, retention, compensation and
  oversight of the work of any compensation consultant, legal counsel or other
  adviser (each, a "Consultant") it retains (payment, as determined by the
  Compensation Committee, of reasonable compensation to any such
  Consultant to be funded by the Company); and
- Before selecting a Consultant consider all factors relevant to the Consultant's independence from management of the Company, including the following:
  - The provision of other services to the Company by the Consultant's employer;
  - The amount of fees received from the Company by the Consultant's employer, as a percentage of the total revenue of the Consultant's employer;
  - The policies and procedures of the Consultant's employer that are designed to prevent conflicts of interest;
  - Any business or personal relationship of the Consultant with a member of the Compensation Committee;
  - Any stock of the Company owned by the Consultant; and
  - Any business or personal relationship of Consultant or the Consultant's employer with an executive officer of the Company.

The foregoing shall not apply to inside legal counsel or to a Consultant whose role is limited to the following activities for which no disclosure would be required under Item 407(e)(3)(iii) of Regulation S-K: (i) consulting on a broad-based plan that does not discriminate in scope, terms or operation, in favor of executive officers or non-employee directors of the Company and that is available generally to all salaried employees or (ii) providing information that either is not customized for a particular company or that is

customized based on parameters that are not developed by the Consultant and about which the Consultant does not provide advice.

## B. Delegation of Authority Related to Compensation and Equity Grants

- Delegate authority, if the Compensation Committee so chooses, to the CEO to grant equity-based awards under any incentive-compensation plans and equity-based plans to employees, including newly hired and current employees, and consultants serving at or below the level of Senior Vice President, subject to any equity grant guidelines or limits, or vesting policy approved by the Board.
- Delegate authority, if the Compensation Committee so chooses, to the CEO to make other cash compensation awards for employees serving at or below the level of Senior Vice President, subject to approved guidelines and established limits.

#### C. Employee Benefit Plans; Non-Executive Compensation Policies

• The Compensation Committee shall periodically review the effectiveness and objectives of the Company's non-executive compensation program and other employee benefit and wellness plans. The Compensation Committee shall also perform such duties and responsibilities, and have such authority, related to employee benefit plans specifically assigned to the Board under the terms of such employee benefit plans or applicable law or regulation. To the extent permitted by applicable law and the provisions of any employee benefit plan, the Compensation Committee may delegate any of its duties, responsibilities, or authority in connection with any employee benefit plan to members of management as the Compensation Committee deems appropriate.

#### VI. General

- The Compensation Committee may establish and delegate authority to one or more subcommittees consisting of one or more of its members to carry out its responsibilities.
- The Compensation Committee shall make regular reports to the Board on matters for which it has responsibility.
- In carrying out its responsibilities, the Compensation Committee shall be entitled to rely on advice and information it receives from management and any experts, advisors and professionals with whom it may consult.
- The Compensation Committee shall have the authority to request that any officer or employee of the Company, the Company's outside legal counsel, the Company's independent auditor or any other professional retained by the Company meet with the Compensation Committee or its members or advisers.

• The Compensation Committee may perform such other functions the Board may request from time to time.

Adopted on August 19, 2024 and effective upon the effectiveness of the S-1 registration statement.