

## ARCA BIOPHARMA, INC.

### COMPENSATION COMMITTEE CHARTER

This Charter of the Compensation Committee of the Board of Directors of ARCA biopharma, Inc. (the “Company”) was adopted by the Board of Directors of the Company (the “Board”) on January 30, 2009, and supersedes all prior delegation of authority to the Compensation Committee (the “Committee”).

#### **I. Purpose**

The purpose of the Committee is to assist the Board in fulfilling its fiduciary responsibilities with respect to the oversight of the Company’s compensation plans, policies and programs, especially those regarding executive compensation and benefits, and producing an annual report on executive compensation for inclusion in the Company’s proxy statement in accordance with applicable rules and regulations. The Committee shall evaluate and approve the Company’s compensation programs consistent with the compensation philosophies and objectives identified by the Committee from time to time, including compensation programs designed to encourage high performance, promote accountability and adherence to Company values and the Company’s code of conduct, to align employee interests with the interests of the Company’s stockholders, and to serve the long-term best interests of the Company. The Committee shall also periodically review and approve management development processes designed to attract, develop and retain talented leadership to serve the long-term best interests of the Company.

The Committee shall have the authority to undertake the specific duties and responsibilities described below as well as such additional responsibilities as may be delegated to the Committee from time to time by the Board.

#### **II. Membership**

The Committee shall consist of at least two directors appointed by the Board, one of whom shall be designated as the Chair.

Each member of the Committee shall (1) qualify as independent under The NASDAQ Stock Market, Inc. Marketplace Rules (2) be a “non-employee director” within the meaning of Rule 16b-3 of the Securities Exchange Act of 1934, as amended, (3) be an “outside director” under the regulations promulgated under Section 162(m) of the Internal Revenue Code of 1986, as amended, and (4) be otherwise free from any relationship that, in the judgment of the Board, would interfere with his or her exercise of independent judgment as a Committee member. Committee members may be removed from the Committee, with or without cause, by the Board.

#### **III. Meetings and Procedures**

The Committee shall meet on a regularly-scheduled basis as it deems appropriate and on such other occasions as circumstances may dictate or the members of the Committee may from time to time determine. A quorum of the Committee shall consist of a majority of the members of the Committee in office at the time of any meeting, present in person or by telephone, and the vote

of a majority of the members of the Committee present at the time of a vote, if a quorum is present at that time, shall be the act of the Committee. The Chair (or in his or her absence, another member designated by the Chair or chosen by the attending members) shall preside at each meeting and set the agendas for Committee meetings. The Committee shall have the authority to establish its own rules and procedures for notice and conduct of its meetings so long as they are not inconsistent with any provisions of the Company's by-laws that are applicable to the Committee. Any action required or permitted to be taken at a meeting of the members of the Committee may be taken without a meeting if a consent in writing setting forth the action is signed by all of the members of the Committee.

The Committee shall maintain written minutes or other records of its meetings and activities. Minutes shall be distributed to each member of the Committee. The Secretary of the Company shall file the signed minutes and any written consents with the corporate records of the Company. The Chair of the Committee shall report to the Board following meetings of the Committee and as otherwise requested by the Board.

The Committee may, at its discretion, include in, or determine to exclude from, its meetings members of the Company's management, any director who is not a member of the Committee, compensation, legal, tax and accounting advisors and any other personnel employed or retained by the Company or any other persons whose presence the Committee believes to be necessary or appropriate; provided, however, that no member of management shall be present at the meeting, or portion of the meeting, at which his or her compensation or performance is discussed.

#### **IV. Advisors and Consultants**

In discharging its responsibilities, the Committee shall have sole authority, as it deems appropriate, to select, retain and/or replace, as needed, compensation and benefits consultants and other outside consultants, experts or advisors to provide advice to the Committee. In addition, the Committee may utilize the services of the Company's regular legal counsel or other advisors to the Company and have free access to consult with Company management and other personnel to provide data and recommendations in connection with discharging its responsibilities. The Company shall provide for appropriate funding, as determined by the Committee, for payment of compensation to any counsel, experts or advisors retained by the Committee, and ordinary administrative expenses of the Committee that are necessary or appropriate in carrying out its duties.

#### **V. Responsibilities**

The Committee is authorized to carry out the following responsibilities:

1. Overseeing succession planning for senior management of the Company, including a review of the performance and advancement potential of current and future senior management and succession plans for each and recommending, as appropriate, the retention of potential succession candidates.
2. Assessing the overall compensation structure of the Company and evaluating and recommending changes to the Company's compensation philosophies and strategies.

3. Reviewing and approving performance-based compensation plans or programs, including establishing goals and targets, applicable to the Chief Executive Officer and other members of the management team.
4. Evaluating the performance of the Chief Executive Officer in light of Company and individual goals and objectives, and making appropriate recommendations for improving performance. In performing the evaluation, the Chair of the Committee may solicit comments from the other non-employee members of the Board and lead the Board in an overall review of the Chief Executive Officer's performance in an executive session of non-employee Board members.
5. Reviewing the results of performance reviews of other executive officers conducted by the Chief Executive Officer and making appropriate recommendations for improving performance.
6. Reviewing and approving the compensation of the Chief Executive Officer and the other executive officers of the Company, including annual base salaries, annual and long-term incentive or bonus awards, employment agreements, and severance and change in control agreements/provisions, in each case as, when and if appropriate, and any special or supplemental benefits. If the compensation for the Chief Executive Officer or any other executive officer is governed by an employment agreement, the Committee shall approve such employment agreement and any amendments thereto. Final determinations regarding the performance and compensation of the Chief Executive Officer will be conducted in an executive session of the Committee and be reported by the Chair of the Committee to the entire Board during an independent session of the Board.
7. Administering, reviewing and approving all executive compensation programs or plans, and all of the Company's incentive compensation and stock plans and awards thereunder of the Company, including amendments to the programs, plans or awards made thereunder.
8. Approving, amending and terminating ERISA-governed employee benefit plans.
9. Preparing and discussing with the Company's management the Compensation Discussion and Analysis (the "CD&A") to be included in the Company's annual meeting proxy statement recommending to the Board that the CD&A be included in the annual meeting proxy statement.
10. Preparing and approving the Report of the Compensation Committee to be included as part of the Company's annual meeting proxy statement.
11. Periodically reviewing and reassessing this Charter and recommending any changes to the Board for its consideration and approval.
12. Periodically evaluating the effectiveness of the Committee.

13. Performing such other functions as may from time to time be delegated by the Board.

The Committee shall have the authority to delegate its functions to a subcommittee thereof.

For purposes of this Charter, “compensation” shall include, but not be limited to, cash or deferred payments, incentive and equity compensation, benefits and perquisites, employment, retention and/or termination/severance agreements and any other programs which pursuant to the regulations of the Securities and Exchange Commission or Internal Revenue Service (or successor organizations, if applicable), would be considered to be compensation. In addition, “officer” shall be as defined in Section 16 of the Securities Exchange Act of 1934, and Rule 16a-1 thereunder.

It is acknowledged that all of the above listed tasks and focus areas may not be relevant to all of the matters and tasks that the Committee may consider and act upon from time to time, and the members of the Committee in their judgment may determine the relevance thereof and the attention such items shall receive in any particular context.

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