

AMENDED AND RESTATED HEMISPHERX BIOPHARMA, INC.

2009 EQUITY INCENTIVE PLAN

(full title of the plan)

William A. Carter, M.D., Chief Executive Officer

Hemispherx Biopharma, Inc.

1617 JFK Boulevard

Philadelphia, Pennsylvania 19103

(215) 988-0080

(Name, Address & Telephone number, including area code, of agent for service)

Copies to:

Richard Feiner, Esq.

Silverman Shin Byrne & Gilchrest PLLC

381 Park Avenue South - Suite 1601

New York, New York 10016

(212) 779-8600

Fax (917) 720-0863

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer or a smaller reporting company. See definition of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer Accelerated filer
Non-accelerated filer Smaller Reporting Company

CALCULATION OF REGISTRATION FEE

| Title of Securities to be Registered | Amount to be Registered(1)(3) | Proposed Maximum Offering Price Per Share(2) | Proposed | |
|---|--------------------------------------|---|--|-----------------------------------|
| | | | Maximum Aggregate Offering Price(2) | Amount of Registration Fee |
| Shares of Common Stock, \$.001 par value, and Shares of Common Stock issuable upon exercise of options/warrants | 7,000,000 | \$0.08 | \$560,000 | \$56.39 |
| Total Registration Fee | | | | \$56.39 |

(1) Represents 7,000,000 shares reserved for issuance under the Amended and Restated Hemispherx Biopharma, Inc. 2009 Equity Incentive Plan and/or upon exercise of stock options to be granted under the foregoing Plan. Excludes 15,000,000 shares previously registered on the Company's registration statement on Form S-8 (SEC File No. 333-160499), as amended.

(2) Estimated solely for the purpose of calculating the registration fee pursuant to Rule 457(c) and Rule 457(h) under the Securities Act.

(3) Pursuant to Rule 416(a) under the Securities Act of 1933, this registration statement also covers any additional securities that may be offered or issued in connection with any stock split, stock dividend or similar transaction.

PART I

INFORMATION REQUIRED IN THE

SECTION 10(A) PROSPECTUS

The information specified in Item 1 and Item 2 of Part I of this Registration Statement on Form S-8 is omitted from this filing in accordance with the provisions of Rule 428 under the Securities Act and the introductory note to Part I of the Registration Statement on Form S-8. The documents containing the information specified in Part I will be delivered to the participants in the Amended and Restated Hemispherx Biopharma, Inc. 2009 Equity Incentive Plan covered by this Registration Statement as required by Rule 428(b) (1).

PART II

INFORMATION REQUIRED IN THE

REGISTRATION STATEMENT

Item 3. Incorporation of Documents by Reference.

The SEC allows us to "incorporate by reference" the information we file with the SEC, which means that we can disclose important information to you by referring you to those documents. The information incorporated by reference is considered to be part of this Registration Statement, and later information filed with the SEC will update and supersede this information. We hereby incorporate by reference into this Registration Statement the following documents previously filed with the SEC:

(a) Our annual report on Form 10-K for our fiscal year ended December 31, 2014.

(b) Our quarterly reports on Form 10-Q for the quarters ended March 31, 2015, June 30, 2015 and September 30, 2015.

(c) Our Current Reports on Form 8-K filed with the Commission on June, 24, 2015, July 27, 2015, August 5, 2015, August 26, 2015, September 17, 2015, November 23, 2015, December 10, 2015, December 16, 2015, and January 14, 2016.

(d) The Notice of Annual Meeting and definitive Proxy Statement filed with the Commission on August 10, 2015 in connection with our 2015 Annual Meeting;

(e) A description of our common stock contained in our registration statement on Form S-1, SEC File No. 333-117178, and any amendment or report filed for the purpose of updating this description filed subsequent to the date of this prospectus and prior to the termination of this offering.

Except to the extent that information therein is deemed furnished and not filed pursuant to the Exchange Act, all documents filed by the Registrant pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Exchange Act subsequent to the effective date of this Registration Statement and prior to the filing of a post-effective amendment to this Registration Statement indicating that all securities offered hereby have been sold or deregistering all securities then remaining unsold shall be deemed to be incorporated by reference herein and to be a part hereof from the date of filing of such documents. Any statement contained herein or in any document incorporated or deemed to be incorporated by reference herein shall be deemed to be modified or superseded for purposes of this Registration Statement to the extent that a statement contained herein or in any other subsequently filed document which also is or is deemed to be incorporated by reference herein modifies or supersedes such statement. Any such statement so modified or superseded shall not be deemed to constitute a part of this Registration Statement, except as so modified or superseded.

We will provide without charge to each person to whom documents are being provided pursuant to Part I of this Registration Statement, upon the written or oral request of any such person, a copy of any document described above (other than exhibits). Requests for such copies should be directed to Corporate Secretary, Hemispherx Biopharma, Inc., 1617 JFK Boulevard, Philadelphia, Pennsylvania 19103, Phone: (215) 988-0080.

Item 4. Description of Securities.

Not applicable.

Item 5. Interests of Named Experts and Counsel.

Not applicable.

Item 6. Indemnification of Directors and Officers.

As permitted by Section 102 of the DGCL, we have adopted provisions in our certificate of incorporation and bylaws that limit or eliminate the personal liability of our directors for a breach of their fiduciary duty of care as a director. The duty of care generally requires that, when acting on behalf of the corporation, directors exercise an informed business judgment based on all material information reasonably available to them. Consequently, a director will not be personally liable to us or our stockholders for monetary damages or breach of fiduciary duty as a director, except for liability for:

- any breach of the director's duty of loyalty to us or our stockholders;

- any act or omission not in good faith or that involves intentional misconduct or a knowing violation of law;
- any act related to unlawful stock repurchases, redemptions or other distributions or payment of dividends; or
- any transaction from which the director derived an improper personal benefit.

These limitations of liability do not affect the availability of equitable remedies such as injunctive relief or rescission. Our certificate of incorporation also authorizes us to indemnify our officers, directors and other agents to the fullest extent permitted under Delaware law.

As permitted by Section 145 of the DGCL, our bylaws provide that:

we may indemnify our directors, officers, employees and agents to the fullest extent permitted by the DGCL, subject to limited exceptions;

we may advance expenses to our directors, officers, employees and agents in connection with a legal proceeding to the fullest extent permitted by the DGCL, subject to limited exceptions; and

- the rights provided in our bylaws are not exclusive.

We have purchased a policy of directors' and officers' liability insurance that insures our directors and officers against the cost of defense, settlement or payment of a judgment in some circumstances.

Item 7. Exemption from Registration Claimed.

Not applicable.

Item 8. Exhibits.

Exhibit No. Description

4.2 Amended and Restated Hemispherx Biopharma, Inc. 2009 Equity Incentive Plan (1).

5.1 Opinion of Silverman Shin Byrne & Gilchrest PLLC, legal counsel.

-3-

23.1 Consent of RSM US LLP (formerly, McGladrey LLP)

23.3 Consent of Silverman Shin Byrne & Gilchrest PLLC, legal counsel (included in Exhibit 5.1).

24.1 Powers of Attorney (included in Signature Pages to the Registration Statement on Form S-8).

(1) Previously filed as Appendix A to the Company's Definitive Proxy Statement on Schedule 14A (SEC File No. 1-13441) filed with the Commission on or about August 10, 2015, and incorporated herein by this reference.

Item 9. Undertakings.

(a) The undersigned registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this Registration Statement:

(i) To include any prospectus required by section 10(a)(3) of the Securities Act of 1933;

(ii) To reflect in the prospectus any facts or events arising after the effective date of the

Registration Statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the Registration Statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than 20% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement; and

(iii) To include any material information with respect to the plan of distribution not previously disclosed in the Registration Statement or any material change to such information in the Registration Statement; provided, however, that paragraphs (a)(1)(i) and (a)(1)(ii) do not apply if the registration statement is on form S-8 and the information

required to be included in a post-effective amendment by those paragraphs is contained in periodic reports filed with or furnished to the Commission by the registrant pursuant to Section 13 or 15(d) of the Exchange Act of 1934 that are incorporated by reference in the Registration Statement.

(2) That, for the purpose of determining any liability under the Securities Act of 1933, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

(b) The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act of 1933, each filing of the registrant's annual report pursuant to section 13(a) or section 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to section 15(d) of the Securities Exchange Act of 1934) that is incorporated by reference in the Registration Statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(c) Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act of 1933 and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act of 1933 and will be governed by the final adjudication of such issue.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the Registrant, Hemispherx Biopharma, Inc., certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-8 and has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the city of Philadelphia, State of Pennsylvania, on the 20th day of January, 2016.

HEMISPHERX BIOPHARMA, INC.

(Registrant)

By: /s/ William A. Carter, M.D.
William A. Carter, M.D.,
Chief Executive Officer

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints William A. Carter acting alone, his true and lawful attorney-in-fact and agent, with full power of substitution and resubstitution, for such person in his name, place and stead, in any and all capacities, in connection with the Registrant's Registration Statement on Form S-8 under the Securities Act of 1933, including, without limiting the generality of the foregoing, to sign the Registration Statement in the name and on behalf of the Registrant or on behalf of the undersigned as a director or officer of the Registrant, and any and all amendments or supplements to the Registration Statement, including any and all stickers and post-effective amendments to the Registration Statement, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission and any applicable securities exchange or securities self-regulatory body, granting unto said attorney-in-fact and agents, each acting alone, full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as he might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or their substitutes or substitute, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, this registration statement on Form S-8 has been signed by the following persons in the capacities indicated on the dates indicated.

| Signature | Title | Date |
|---|---|------------------|
| /s/ William A. Carter William A. Carter | Chairman of the Board, Chief Executive Officer (Principal Executive) and Director | January 20, 2016 |
| /s/ Thomas K. Equels Thomas K. Equels | President, Chief Financial Officer, Secretary, General Counsel, and Vice Chairman | January 20, 2016 |
| /s/ Adam Pascale Adam Pascale | Chief Accounting Officer | January 20, 2016 |
| /s/ William M. Mitchell William M. Mitchell, M.D., Ph.D. | Director | January 20, 2016 |
| /s/ Iraj E. Kiani Iraj E. Kiani, Ph.D. | Director | January 20, 2016 |
| /s/ Peter W. Rodino Peter W. Rodino | Director | January 20, 2016 |

Hemispherx Biopharma, Inc.

Form S-8

Index to Exhibits

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