ARCA biopharma, Inc.
Form 424B4
February 13, 2014
Prospectus Supplement No. 15

(to Prospectus dated May 30, 2013)

Filed pursuant to Rule 424 (b)(4)
Registration No. 333-187508

125,000 Shares of Series A Convertible Preferred Stock

12,500,000 Shares of Common Stock Underlying the Preferred Stock

Warrants to Purchase up to 6,250,000 Shares of Common Stock and

6,250,000 Shares of Common Stock Underlying the Warrants

ARCA biopharma, Inc.

This prospectus supplement supplements the prospectus dated May 30, 2013 (the Prospectus), as supplemented by that certain Prospectus Supplement No. 1 dated July 17, 2013 (Supplement No. 1), by that certain Prospectus Supplement No. 2 dated July 19, 2013 (Supplement No. 2), by that certain Prospectus Supplement No. 3 dated July 24, 2013 (Supplement No. 3), by that certain Prospectus Supplement No. 4 dated July 30, 2013 (Supplement No. 4), by that certain Prospectus Supplement No. 5 dated August 6, 2013 (Supplement No. 5), by that certain Prospectus Supplement No. 6 dated September 4, 2013 (Supplement No. 6), by that certain Prospectus Supplement No. 7 dated September 23, 2013 (Supplement No. 7), by that certain Prospectus Supplement No. 8 dated October 29, 2013 (Supplement No. 8), by that certain Prospectus Supplement No. 9 dated November 6, 2013 (Supplement No. 9), by that certain Prospectus Supplement No. 10 dated November 13, 2013 (Supplement No. 10), by that certain Prospectus Supplement No. 11 dated November 21, 2013 (Supplement No. 11), by that certain Prospectus Supplement No. 12 dated December 5, 2013 (Supplement No. 12), by that certain Prospectus Supplement No. 13 dated January 8, 2014 (Supplement No. 13), and by that certain Prospectus Supplement No. 14 dated February 10, 2014 (Supplement No. 14 , and together with Supplement No. 1, Supplement No. 2, Supplement No. 3, Supplement No. 4, Supplement No. 5, Supplement No. 6, Supplement No. 7, Supplement No. 8, Supplement No. 9, Supplement No. 10, Supplement No. 11, Supplement No. 12, and Supplement No. 13, the Supplements), which form a part of our Registration Statement on Form S-1 (Registration No. 333-187508). This prospectus supplement is being filed to update and supplement the information in the Prospectus and the Supplements with the information contained in our current report on Form 8-K, filed with the Securities and Exchange Commission (the Commission) on February 12, 2014 (the Current Report). Accordingly, we have attached the Current Report to this prospectus supplement.

The Prospectus, the Supplements and this prospectus supplement relate to the offer and sale of up to 125,000 shares of Series A Convertible Preferred Stock (Preferred Stock) which are convertible into 12,500,000 shares of Common

Stock, warrants to purchase up to 6,250,000 shares of our Common Stock and 6,250,000 shares of Common Stock underlying the warrants.

This prospectus supplement should be read in conjunction with the Prospectus and the Supplements. This prospectus supplement updates and supplements the information in the Prospectus and the Supplements. If there is any inconsistency between the information in the Prospectus, the Supplements and this prospectus supplement, you should rely on the information in this prospectus supplement.

Our common stock is traded on the Nasdaq Global Market under the trading symbol ABIO. On February 12, 2014, the last reported sale price of our common stock was $1.79 per share.

Investing in our securities involves a high degree of risk. You should review carefully the risks and uncertainties described under the heading Risk Factors beginning on page 5 of the Prospectus and beginning on page 23 of our quarterly report on Form 10-Q for the quarterly period ended September 30, 2013 before you decide whether to invest in shares of our common stock.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if the Prospectus or this prospectus supplement is truthful or complete. Any representation to the contrary is a criminal offense.

The date of this prospectus supplement is February 12, 2014

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, D.C. 20549

FORM 8-K

CURRENT REPORT

Pursuant to Section 13 or 15(d)

of the Securities Exchange Act of 1934

Date of Report (Date of earliest event reported): February 12, 2014 (February 11, 2014)

ARCA biopharma, Inc.

(Exact Name of Registrant as Specified in Charter)

Delaware	000-22873	36-3855489
(State or Other Jurisdiction of Incorporation)	(Commission File Number)	(IRS Employer Identification No.)

11080 CirclePoint Road, Suite 140, Westminster, CO 80020

(Address of Principal Executive Offices) (Zip Code)

(720) 940-2200

(Registrant s telephone number, including area code)

Not Applicable

(Former Name or Former Address, if Changed Since Last Report)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions (see General Instruction A.2. below):

¨ Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)

¨ Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)

¨ Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))

¨ Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Item 5.02. Departure of Directors or Certain Officers; Election of Directors; Appointment of Certain Officers; Compensatory Arrangements of Certain Officers.

On February 11, 2014, the Board of Directors (the Board) of ARCA biopharma, Inc. (the Company) elected Daniel J. Mitchell as a director of the Company to fill a vacancy on the Board. Mr. Mitchell was elected for a term expiring at the Company s 2015 annual stockholders meeting. Mr. Mitchell was also appointed to serve on the Board s Audit Committee and Nominating and Corporate Governance Committee. A copy of the press release announcing Mr. Mitchell s appointment is attached hereto as Exhibit 99.1.

Mr. Mitchell founded and is a Manager of Sequel Venture Partners, L.L.C., a venture capital firm formed in January 1997. Prior to founding Sequel Venture Partners, Mr. Mitchell was a founder in 1986 of Capital Health Venture Partners, a health care focused venture capital firm, where he was a General Partner until 2006. On behalf of Sequel Ventures, Mr. Mitchell led the 1998 Series A financing that initially funded Myogen, Inc., a biopharmaceutical company focused on cardiovascular diseases, participated in subsequent financing rounds and served on the board of directors until Myogen was acquired in 2006. He served on the board of directors of Replidyne, Inc., a publicly-traded pharmaceutical company, from 2002 until the company was acquired in 2009. Mr. Mitchell currently serves on the board of directors of several private companies. Mr. Mitchell holds a B.S. from the University of Illinois and an M.B.A. from the University of California at Berkeley.

In connection with Mr. Mitchell s election, Mr. Mitchell and the Company entered into an Indemnity Agreement, in the same form used with the Company s other directors. The Indemnity Agreement generally requires the Company to indemnify Mr. Mitchell against liabilities incurred in the performance of his duties to the Company to the maximum extent permitted by Delaware corporate law and the Company s certificate of incorporation and bylaws. The Company s standard form of Indemnity Agreement is filed as Exhibit 10.52 to its Annual Report on Form 10-K filed on March 27, 2009.

Section 9 Financial Statements and Exhibits

Item 9.01. Financial Statements and Exhibits.

(d) Exhibits.

Exhibit Number	Description
99.1	Press Release titled Dan Mitchell Joins ARCA biopharma Board of Directors dated February 12, 2014.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

Dated: February 12, 2014

ARCA biopharma, Inc.

(Registrant)

By: /s/ Christopher D. Ozeroff
Name: Christopher D. Ozeroff
Title: SVP and General Counsel

INDEX TO EXHIBITS

Exhibit Number	Description
99.1	Press Release titled Dan Mitchell Joins ARCA biopharma Board of Directors dated February 12, 2014.

Exhibit 99.1

DAN MITCHELL JOINS ARCA BIOPHARMA BOARD OF DIRECTORS

Westminster, CO, February 12 2014 ARCA biopharma, Inc. (Nasdaq: ABIO), a biopharmaceutical company developing genetically-targeted therapies for cardiovascular diseases, today announced that Dan Mitchell has been appointed to the Company s Board of Directors. He will serve on the Audit and Nominating and Corporate Governance Committees of the Board of Directors.

Mr. Mitchell founded and is a Manager of Sequel Venture Partners, L.L.C., a venture capital firm formed in January 1997. Prior to founding Sequel Venture Partners, Mr. Mitchell was a founder in 1986 of Capital Health Venture Partners, a health care focused venture capital firm, where he was a General Partner until 2006. On behalf of Sequel Ventures, Mr. Mitchell led the 1998 Series A financing that initially funded Myogen, Inc., a biopharmaceutical company focused on cardiovascular diseases, participated in subsequent financing rounds and served on the board of directors until Myogen was acquired in 2006. He served on the board of directors of Replidyne, Inc., a publicly-traded pharmaceutical company, from 2002 until the company was acquired in 2009. Mr. Mitchell currently serves on the board of directors of several private companies. Mr. Mitchell holds a B.S. from the University of Illinois and an M.B.A. from the University of California at Berkeley.

We are honored to have Dan join the ARCA Board of Directors, said Dr. Michael R. Bristow, President and Chief Executive Officer of ARCA. With his significant expertise and experience in identifying investment worthy companies and helping to advise those companies in managing their growth, Dan will be a valuable addition to the ARCA Board as we continue the development of Gencaro and look to deliver value to our stockholders.

I am delighted to join the Board of ARCA at this important point in its development, said Mr. Mitchell. The imminent initiation of the GENETIC-AF trial evaluating ARCA s Gencaro as potentially the first genetically-targeted atrial fibrillation prevention treatment is a tremendous step in hopefully addressing what we believe is an unmet medical need for new atrial fibrillation treatments. ARCA s personalized medicine approach to drug development has identified both the compound and the regulatory pathway to potentially achieve that goal.

About ARCA biopharma

ARCA biopharma is dedicated to developing genetically-targeted therapies for cardiovascular diseases. The Company s lead product candidate, Gencaro™ (bucindolol hydrochloride), is an investigational, pharmacologically unique beta-blocker and mild vasodilator being developed for atrial fibrillation. ARCA has identified common genetic variations that it believes predict individual patient response to Gencaro, giving it the potential to be the first genetically-targeted atrial fibrillation prevention treatment. ARCA has a collaboration with Medtronic, Inc. for support of the GENETIC-AF trial. For more information please visit www.arcabiopharma.com.

Safe Harbor Statement

This press release contains forward-looking statements for purposes of the safe harbor provided by the Private Securities Litigation Reform Act of 1995. These statements include, but are not limited to, statements regarding, potential timing for patient enrollment in the GENETIC-AF trial, the sufficiency of the Company s capital to support its operations, the potential for genetic variations to predict individual patient response to Gencaro, Gencaro s potential to treat atrial fibrillation, future treatment options for patients with atrial fibrillation, the role of AF burden in diagnosis and treatment of atrial fibrillation and the potential for Gencaro to be the first genetically-targeted atrial fibrillation prevention treatment. Such statements are based on management s current expectations and involve risks and uncertainties. Actual results and performance could differ materially from those projected in the forward-looking statements as a result of many factors, including, without limitation, the risks and uncertainties associated with: the Company s financial resources and whether they will be sufficient to meet the Company s business objectives and operational requirements; results of earlier clinical trials may not be confirmed in future trials, the protection and market exclusivity provided by the Company s intellectual property; risks related to the drug discovery and the regulatory approval process; and, the impact of competitive products and technological changes. These and other factors are identified and described in more detail in ARCA s filings with the SEC, including without limitation the Company s annual report on Form 10-K for the year ended December 31, 2012, and subsequent filings. The Company disclaims any intent or obligation to update these forward-looking statements.

Investor & Media Contact:

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