ARCA biopharma, Inc. Form 424B4 December 02, 2014 **Prospectus Supplement No. 24**

Filed pursuant to Rule 424(b)(4)

(to Prospectus dated May 30, 2013)

Registration No. 333-187508

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

125,000 Shares of Series A Convertible 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), by that certain Prospectus Supplement No. 14 dated February 10, 2014 (Supplement No. 14), by that certain Prospectus Supplement No. 15 dated February 12, 2014 (Supplement No. 15), by that certain Prospectus Supplement No. 16 dated February 18, 2014 (Supplement No. 16), by that certain Prospectus Supplement No. 17 dated March 3, 2014 (Supplement No. 17), by that certain Prospectus Supplement No. 18 dated March 20, 2014 (Supplement No. 18), by that certain Prospectus Supplement No. 19 dated May 13, 2014 (Supplement No. 19), by that certain Prospectus Supplement No. 20 dated June 9, 2014 (Supplement No. 20), by that certain Prospectus Supplement No. 21 dated August 13, 2014 (Supplement No. 21), by that certain Prospectus Supplement No. 22 dated August 18, 2014 (Supplement No. 22), and by that certain Prospectus Supplement No. 23 dated November 12, 2014 (Supplement No. 23, 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, Supplement No. 13, Supplement No. 14, Supplement No. 15, Supplement No. 16, Supplement No. 17, Supplement No. 18, Supplement No. 19, Supplement No. 20, Supplement No. 21, and Supplement No. 22, 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 December 1, 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 December 1, 2014, the last reported sale price of our common stock was \$0.80 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 20 of our quarterly report on Form 10-Q for the period ended September 30, 2014 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 December 1, 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): December 1, 2014 (December 1, 2014)

ARCA biopharma, Inc.

(Exact Name of Registrant as Specified in Charter)

Delaware (State or Other Jurisdiction

000-22873 (Commission 36-3855489 (I.R.S. Employer

of Incorporation) File Number) Identification No.) 11080 CirclePoint Road, Suite 140, Westminster, CO 80020

(Address of Principal Executive Offices) (Zip Code)

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(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))

Section 5 Corporate Governance and Management

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

(b)

On December 1, 2014, ARCA biopharma, Inc. (ARCA) announced that Patrick Wheeler, ARCA s Chief Financial Officer, has notified ARCA of his intent to leave his position at ARCA to pursue other career opportunities after having served ARCA for 9 years. Mr. Wheeler will remain with ARCA through December 31, 2014 to assist in the transition of his responsibilities. Mr. Wheeler s resignation was not the result of any disagreement with ARCA on any matter relating to its operations, policies or practices, or regarding the general direction of the company.

(c)

Effective as of December 1, 2014, Brian Selby, age 53 was promoted to be ARCA s Vice President, Finance and Chief Accounting Officer and, as such, he will be ARCA s principal financial and principal accounting officer. Mr. Selby has been the company s Controller for 7 years and has extensive experience in corporate accounting and finance. Prior to joining ARCA, he worked at several public companies, including as Controller for Myogen, Inc. and Controller for Genomica Corporation. Mr. Selby received his M.S. in Accounting from the University of Colorado and received his B.S., in Business Administration and Finance from Colorado State University.

Effective December 1, 2014, Thomas Keuer, age 56, was promoted to be ARCA s Chief Operating Officer and, as such, he will be ARCA s principal operating officer. Mr. Keuer has been ARCA s Executive Vice President, Pharmaceutical Operations for the past 8 years. Prior to joining ARCA, Mr. Keuer served in a number of senior leadership positions in the biopharmaceutical industry including SVP of Operations for Insmed, Inc., VP of Engineering for Baxter Healthcare, and VP of Operations for Somatogen, Inc. Mr. Keuer received his M.S. in Biochemical Engineering from Rice University and received his B.S. in Chemical Engineering from the University of Texas, Austin.

As of the filing of this Current Report on Form 8-K, ARCA has not determined the final terms of the compensation arrangements with Messrs. Selby and Keuer.

A copy of the press release announcing Mr. Wheeler s resignation and the promotions of Messrs. Selby and Keuer is attached hereto as Exhibit 99.1, the contents of which are incorporated herein by reference.

Section 9 Financial Statements and Exhibits

Item 9.01. Financial Statements and Exhibits.

(d) Exhibits.

Exhibit Number

Description

99.1 Press Release titled ARCA biopharma Announces Management Transitions dated December 1, 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: December 1, 2014

ARCA biopharma, Inc.

(Registrant)

By: /s/ Michael R. Bristow Name: Michael R. Bristow Title: Chief Executive Officer

INDEX TO EXHIBITS

Exhibit Number

99.1

Description

Press Release titled ARCA biopharma Announces Management Transitions dated December 1, 2014.

Exhibit 99.1

ARCA BIOPHARMA ANNOUNCES MANAGEMENT TRANSITIONS

Westminster, CO, December 1, 2014 ARCA biopharma, Inc. (Nasdaq: ABIO), a biopharmaceutical company developing genetically-targeted therapies for cardiovascular diseases, today announced three management team transitions.

Patrick Wheeler, ARCA s Chief Financial Officer, has notified ARCA of his intent to leave the company in order to pursue other career opportunities after having served ARCA for 9 years. He will remain with the company through December 31, 2014 to assist in the transition of his responsibilities. Mr. Wheeler joined the company in 2006 and has held financial and senior management positions of increasing responsibility throughout his tenure.

Brian Selby has been promoted to Vice President, Finance and Chief Accounting Officer. He will report to the CEO and be responsible for ARCA s internal and external financial reporting, including compliance with the rules and regulations of the US. Securities and Exchange Commission, and corporate financing activities. Mr. Selby has been the company s Controller for 7 years and has extensive experience in corporate accounting and finance. Prior to joining ARCA, he worked at several public companies, including Controller for Myogen, Inc. and Controller for Genomica Corporation.

Thomas Keuer has been promoted to Chief Operating Officer. He will report to the CEO and be responsible for pharmaceutical operations, human resources, facilities, and information technology. Mr. Keuer has been the Company s Executive Vice President, Pharmaceutical Operations for the past 8 years. Prior to joining ARCA, he served in a number of senior leadership positions in the biopharmaceutical industry including SVP of Operations for Insmed, Inc., VP of Engineering for Baxter Healthcare, and VP of Operations for Somatogen, Inc.

Pat has been a tremendous asset to the Company over the past 9 years, helping shape our strategy, financing and development, said Michael R. Bristow, President and CEO for ARCA. We are grateful for his service and contributions and wish him well in all his future endeavors. I am very pleased with the abilities of our people with such longevity within the company to continue the leadership of the organization. I look forward to continuing working with Tom and Brian in their expanded roles. Their industry and professional experience will be valuable as ARCA continues the development of Gencaro as a potential treatment for atrial fibrillation.

About ARCA biopharma

ARCA biopharma is dedicated to developing genetically-targeted therapies for cardiovascular diseases. The Company s lead product candidate, Gencar \mathfrak{F}^{M} (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, the potential for genetic variations to predict individual patient response to Gencaro, Gencaro s potential to treat 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, 2013, and subsequent filings. The Company disclaims any intent or obligation to update these forward-looking statements.

Investor & Media Contact:

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