

Ozeroff Christopher David
 Form 4
 February 22, 2010

FORM 4 UNITED STATES SECURITIES AND EXCHANGE COMMISSION
 Washington, D.C. 20549

OMB APPROVAL

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STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP OF SECURITIES

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934, Section 17(a) of the Public Utility Holding Company Act of 1935 or Section 30(h) of the Investment Company Act of 1940

(Print or Type Responses)

1. Name and Address of Reporting Person *
 Ozeroff Christopher David

2. Issuer Name and Ticker or Trading Symbol
 ARCA biopharma, Inc. [ABIO]

5. Relationship of Reporting Person(s) to Issuer

(Check all applicable)

(Last) (First) (Middle)
 C/O ARCA BIOPHARMA,
 INC., 8001 ARISTA PLACE, SUITE
 200

3. Date of Earliest Transaction
 (Month/Day/Year)
 02/18/2010

____ Director _____ 10% Owner
 Officer (give title below) _____ Other (specify below)
 SVP & GENERAL COUNSEL

(Street)
 BROOMFIELD, CO 80021

4. If Amendment, Date Original Filed(Month/Day/Year)

6. Individual or Joint/Group Filing(Check Applicable Line)
 Form filed by One Reporting Person
 Form filed by More than One Reporting Person

(City) (State) (Zip)

Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned

| 1. Title of Security (Instr. 3) | 2. Transaction Date (Month/Day/Year) | 2A. Deemed Execution Date, if any (Month/Day/Year) | 3. Transaction Code (Instr. 8) | 4. Securities Acquired (A) or Disposed of (D) (Instr. 3, 4 and 5) | 5. Amount of Securities Beneficially Owned Following Reported Transaction(s) (Instr. 3 and 4) | 6. Ownership Form: Direct (D) or Indirect (I) (Instr. 4) | 7. Nature of Ownership (Instr. 4) | | |
|---------------------------------|--------------------------------------|--|--------------------------------|---|---|--|-----------------------------------|-----|-------|
| | | | | (A) or (D) | Code | V | Amount | (D) | Price |

Reminder: Report on a separate line for each class of securities beneficially owned directly or indirectly.

Persons who respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB control number.

SEC 1474 (9-02)

Table II - Derivative Securities Acquired, Disposed of, or Beneficially Owned (e.g., puts, calls, warrants, options, convertible securities)

| 1. Title of Derivative | 2. Conversion | 3. Transaction Date (Month/Day/Year) | 3A. Deemed Execution Date, if | 4. Transaction of Derivative | 5. Number of Derivative | 6. Date Exercisable and Expiration Date | 7. Title and Amount of Underlying Securities | 8. Underlying Securities |
|------------------------|---------------|--------------------------------------|-------------------------------|------------------------------|-------------------------|---|--|--------------------------|
|------------------------|---------------|--------------------------------------|-------------------------------|------------------------------|-------------------------|---|--|--------------------------|

