

FREYTAG J WILLIAM
 Form 4
 February 09, 2010

FORM 4

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

OMB APPROVAL

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Check this box if no longer subject to Section 16. Form 4 or Form 5 obligations may continue. See Instruction 1(b).

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 *
FREYTAG J WILLIAM

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)
7169 WATERFORD COURT
 (Street)

3. Date of Earliest Transaction
 (Month/Day/Year)
02/05/2010

Director 10% Owner
 Officer (give title below) Other (specify below)

NIWOT, CO 80503
 (City) (State) (Zip)

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

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 Security (Instr. 3) | 2. Conversion or Exercise Price of | 3. Transaction Date (Month/Day/Year) | 3A. Deemed Execution Date, if any (Month/Day/Year) | 4. Transaction Code (Instr. 8) | 5. Number of Derivative Securities Acquired | 6. Date Exercisable and Expiration Date (Month/Day/Year) | 7. Title and Amount of Underlying Securities (Instr. 3 and 4) | 8. Underlying Securities (Instr. 3 and 4) |
|--|------------------------------------|--------------------------------------|--|--------------------------------|---|--|---|---|
|--|------------------------------------|--------------------------------------|--|--------------------------------|---|--|---|---|

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| Derivative Security | | | (A) or Disposed of (D) (Instr. 3, 4, and 5) | | Date Exercisable | Expiration Date | Title | Amount or Number of Shares |
|---------------------------------|---------|------------|---|-------|------------------|-----------------|--------------|----------------------------|
| | | | Code | V | | | | |
| Option to Purchase Common Stock | \$ 2.73 | 02/05/2010 | A | 3,500 | (1) | 02/05/2020 | Common Stock | 3,500 |

Reporting Owners

| Reporting Owner Name / Address | Relationships | | | |
|--|---------------|-----------|---------|-------|
| | Director | 10% Owner | Officer | Other |
| FREYTAG J WILLIAM 7169 WATERFORD COURT NIWOT, CO 80503 | | X | | |

Signatures

Patrick Wheeler, attorney
in fact

02/09/2010

__Signature of Reporting Person Date

Explanation of Responses:

- * If the form is filed by more than one reporting person, *see* Instruction 4(b)(v).
 - ** Intentional misstatements or omissions of facts constitute Federal Criminal Violations. *See* 18 U.S.C. 1001 and 15 U.S.C. 78ff(a).
- (1) The options vest ratably on a monthly basis over a one year period; full acceleration upon change in control and termination of service.
- Note: File three copies of this Form, one of which must be manually signed. If space is insufficient, *see* Instruction 6 for procedure. Potential persons who are to respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB number.