

Wheeler Patrick M
 Form 4
 February 22, 2010

FORM 4

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

OMB APPROVAL

OMB Number: 3235-0287
 Expires: January 31, 2005
 Estimated average burden hours per response... 0.5

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 *
 Wheeler Patrick M

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
 Officer (give title below) _____ 10% Owner
 _____ Other (specify below)
 acting Chief Financial Officer

(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 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. |
|------------------------|---------------|--------------------------------------|-------------------------------|------------------------------|-------------------------|---|--|----|
|------------------------|---------------|--------------------------------------|-------------------------------|------------------------------|-------------------------|---|--|----|

Edgar Filing: Wheeler Patrick M - Form 4

| Security (Instr. 3) | or Exercise Price of Derivative Security | any (Month/Day/Year) | Code (Instr. 8) | Securities Acquired (A) or Disposed of (D) (Instr. 3, 4, and 5) | (Month/Day/Year) | (Instr. 3 and 4) | | | | |
|--|---|-------------------------|--------------------|---|------------------|------------------|---------------------|--------------------|-----------------|--|
| | | | Code | V | (A) | (D) | Date Exercisable | Expiration Date | Title | Amount or Number of Shares |
| Option to Purchase Common Stock | \$ 2.97 | 02/18/2010 | A | | 6,400 | | <u>(1)</u> | 02/18/2020 | Common Stock | 6,400 |

Reporting Owners

| Reporting Owner Name / Address | Relationships | | | |
|---|---------------|-----------|--------------------------------|-------|
| | Director | 10% Owner | Officer | Other |
| Wheeler Patrick M C/O ARCA BIOPHARMA, INC. 8001 ARISTA PLACE, SUITE 200 BROOMFIELD, CO 80021 | | | acting Chief Financial Officer | |

Signatures

Patrick Wheeler 02/22/2010
 __Signature of Date
 Reporting Person

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 in equal monthly installments over a three year period from the date of grant. In the event of a change in control of the Company, 50% of the unvested options shall become fully and immediately vested upon the closing date of such change in control, provided, however, that on the earlier of (i) the one-year anniversary of the closing date or (ii) involuntary termination, any options that remain unvested on such earlier date shall become fully and immediately vested.

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.