

Lowe David George  
 Form 3  
 February 05, 2009

**FORM 3 UNITED STATES SECURITIES AND EXCHANGE COMMISSION**  
**Washington, D.C. 20549**

OMB APPROVAL

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**INITIAL STATEMENT OF 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 \*  
 ^ Lowe David George  
 (Last) (First) (Middle)

2. Date of Event Requiring Statement  
 (Month/Day/Year)  
 01/27/2009

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

4. Relationship of Reporting Person(s) to Issuer

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

C/O SKYLINE  
 VENTURES, ^ 525  
 UNIVERSITY AVENUE, STE  
 520  
 (Street)

(Check all applicable)

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

PALO ALTO, ^ CA ^ 94301  
 (City) (State) (Zip)

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 Beneficially Owned**

| 1. Title of Security<br>(Instr. 4) | 2. Amount of Securities Beneficially Owned<br>(Instr. 4) | 3. Ownership Form:<br>Direct (D)<br>or Indirect (I)<br>(Instr. 5) | 4. Nature of Indirect Beneficial Ownership<br>(Instr. 5) |
|------------------------------------|--|---|--|
| Common Stock                       | 877,583  | I   | See Footnote <sup>(1)</sup>                              |

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

SEC 1473 (7-02)

**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.**

**Table II - Derivative Securities Beneficially Owned (e.g., puts, calls, warrants, options, convertible securities)**

| 1. Title of Derivative Security<br>(Instr. 4) | 2. Date Exercisable and Expiration Date<br>(Month/Day/Year) | 3. Title and Amount of Securities Underlying Derivative Security | 4. Conversion or Exercise | 5. Ownership Form of | 6. Nature of Indirect Beneficial Ownership<br>(Instr. 5) |
|---|---|--|---------------------------|----------------------|--|
|---|---|--|---------------------------|----------------------|--|

