

**FORM 4****UNITED STATES SECURITIES AND EXCHANGE COMMISSION**

Washington, D.C. 20549

**OMB APPROVAL**

OMB Number: 3235-0287  
 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**

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934  
 or Section 30(h) of the Investment Company Act of 1940

1. Name and Address of Reporting Person* <u>Davidson David</u>  (Last) (First) (Middle) <u>C/O BLUEBIRD BIO, INC.</u> <u>150 SECOND STREET</u>  (Street) <u>CAMBRIDGE MA 02141</u>  (City) (State) (Zip)	2. Issuer Name and Ticker or Trading Symbol <u>bluebird bio, Inc. [ BLUE ]</u>	5. Relationship of Reporting Person(s) to Issuer (Check all applicable)  Director 10% Owner <input checked="" type="checkbox"/> Officer (give title below) Other (specify below) <u>Chief Medical Officer</u>
	3. Date of Earliest Transaction (Month/Day/Year) <u>05/01/2014</u>	
4. If Amendment, Date of Original Filed (Month/Day/Year)		

**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 Indirect Beneficial Ownership (Instr. 4)
			Code	V	Amount	(A) or (D)	Price			
Common Stock	05/01/2014		M		4,000	A	\$2.09	4,000	D	
Common Stock	05/01/2014		S <sup>(1)</sup>		4,000	D	\$19.85 <sup>(2)</sup>	0	D	

**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 Derivative Security	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 (A) or Disposed of (D) (Instr. 3, 4 and 5)		6. Date Exercisable and Expiration Date (Month/Day/Year)		7. Title and Amount of Securities Underlying Derivative Security (Instr. 3 and 4)		8. Price of Derivative Security (Instr. 5)	9. Number of derivative Securities Beneficially Owned Following Reported Transaction(s) (Instr. 4)	10. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	11. Nature of Indirect Beneficial Ownership (Instr. 4)
				Code	V	(A)	(D)	Date Exercisable	Expiration Date	Title	Amount or Number of Shares				
Stock Option (right to buy)	\$2.09	05/01/2014		M			4,000	(3)	04/13/2022	Common Stock	4,000	\$0.00	103,239	D	

**Explanation of Responses:**

- The sales reported in this Form 4 were effected pursuant to a Rule 10b5-1 trading plan adopted by the reporting person on October 14, 2013.
- The range of prices for the transaction reported on this line was \$19.08 to \$20.24. The average weighted price was \$19.8478. The reporting person will provide, upon request by the SEC, the issuer or a security holder of the issuer, full information regarding the number of shares sold at each separate price.
- This option vests over a four-year period, at a rate of twenty-five percent (25%) on February 13, 2013 and in 36 equal monthly installments thereafter.

**Remarks:**

/s/ Jason F. Cole, Attorney-in-Fact 05/02/2014

\*\* Signature of Reporting Person Date

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

\* 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).

Note: File three copies of this Form, one of which must be manually signed. If space is insufficient, see Instruction 6 for procedure.

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 Number.