

**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**

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*		2. Issuer Name and Ticker or Trading Symbol		5. Relationship of Reporting Person(s) to Issuer (Check all applicable)	
Mandell James		bluebird bio, Inc. [ BLUE ]		<input checked="" type="checkbox"/> Director 10% Owner Officer (give title below) Other (specify below)	
(Last) (First) (Middle) C/O BLUEBIRD BIO, INC. 150 SECOND STREET		3. Date of Earliest Transaction (Month/Day/Year)		6. Individual or Joint/Group Filing (Check Applicable Line)	
(Street) CAMBRIDGE MA 02141		02/15/2017		<input checked="" type="checkbox"/> Form filed by One Reporting Person Form filed by More than One Reporting Person	
(City) (State) (Zip)		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	02/15/2017		M		1,050	A	\$25.16	2,050	D	
Common Stock	02/15/2017		S <sup>(1)</sup>		1,050	D	\$80.2236 <sup>(2)</sup>	1,000	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		Date Exercisable	Expiration Date					
Stock Option (right to buy)	\$25.16	02/15/2017		M		1,050	(3)	06/11/2024	Common Stock	1,050	\$0.00	4,500	D

**Explanation of Responses:**

- This sales reported in the Form 4 were effected pursuant to a 10b5-1 trading plan adopted by the reporting person on December 13, 2016.
- The range in prices for the transaction reported on this line was \$80.00 to \$80.50. The average weighted price was \$80.2236. The reporting person will provide, upon request by the SEC, the issuer or security holder of the issuer, full information regarding the number of shares sold at each separate price.
- This option vests 100% on the earlier of June 11, 2015 or the date of the next annual meeting of stockholders.

**Remarks:**

/s/ Jason F. Cole, Attorney-in-Fact 02/17/2017

\*\* 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.