

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) C/O BLUEBIRD BIO, INC. 60 BINNEY STREET  (Street) CAMBRIDGE MA 02142  (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>01/05/2018</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	01/05/2018		S		2,018 <sup>(1)</sup>	D	\$173.2563 <sup>(2)</sup>	13,959	D	
Common Stock	01/05/2018		S		304 <sup>(1)</sup>	D	\$174.1694 <sup>(3)</sup>	13,655	D	
Common Stock	01/08/2018		M		1,200	A	\$5.5004	14,855	D	
Common Stock	01/08/2018		s <sup>(4)</sup>		200	D	\$171.4158 <sup>(5)</sup>	14,655	D	
Common Stock	01/08/2018		s <sup>(4)</sup>		1,000	D	\$174.6	13,655	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
Stock Option (right to buy)	\$5.5004	01/08/2018		M			1,200	(6)	01/16/2023	Common Stock	1,200	\$0.00	71,951	D	

**Explanation of Responses:**

- Shares were sold to cover tax withholding obligations incurred in connection with the vesting of Restricted Stock Units.
- The range in prices for the transaction reported on this line was \$172.85 to \$173.80. The average weighted price was \$173.2563. 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.
- The range in prices for the transaction reported on this line was \$173.85 to \$174.35. The average weighted price was \$174.1694. 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.
- The sales reported in this Form 4 were effected pursuant to a Rule 10b5-1 trading plan adopted by the reporting person on December 12, 2016.
- The range in prices for the transaction reported on this line was \$171.40 to \$171.55. The average weighted price was \$171.4158. 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 to purchase shares of our common stock granted on January 16, 2013 with performance-based vesting criteria that were met as of May 1, 2013. The shares underlying these options vested as follows: 25% vested on May 1, 2014, with the remainder of the shares vesting in equal monthly installments over the following three years.

**Remarks:**

/s/ Jason F. Cole, Attorney-in-Fact 01/09/2018

\*\* 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.

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