

STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP

Check this box if no longer subject to Section 16. Form 4 or Form 5 obligations may continue. See Instruction 1(b).

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

OMB APPROVAL	
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1. Name and Address of Reporting Person * <u>Leschly Nick</u> <hr/> (Last) (First) (Middle) C/O BLUEBIRD BIO, INC. 150 SECOND STREET <hr/> (Street) CAMBRIDGE MA 02141 <hr/> (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) <input checked="" type="checkbox"/> Director 10% Owner <input checked="" type="checkbox"/> Officer (give title below) Other (specify below) President and CEO
	3. Date of Earliest Transaction (Month/Day/Year) 08/07/2015	
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	08/07/2015		M		6,056	A	\$2.0864	252,577 ⁽¹⁾	D	
Comon Stock	08/07/2015		M		28,511	A	\$2.0864	281,088	D	
Common Stock	08/07/2015		M		90,433	A	\$5.5004	371,521	D	
Common Stock	08/07/2015		s ⁽²⁾		419	D	\$130.56 ⁽³⁾	371,102	D	
Common Stock	08/07/2015		s ⁽²⁾		1,528	D	\$131.12 ⁽⁴⁾	369,574	D	
Common Stock	08/07/2015		s ⁽²⁾		12,171	D	\$132.29 ⁽⁵⁾	357,403	D	
Common Stock	08/07/2015		s ⁽²⁾		2,208	D	\$133.08 ⁽⁶⁾	355,195	D	
Common Stock	08/07/2015		s ⁽²⁾		1,766	D	\$134.24 ⁽⁷⁾	353,429	D	
Common Stock	08/07/2015		s ⁽²⁾		17,832	D	\$135.51 ⁽⁸⁾	335,597	D	
Common Stock	08/07/2015		s ⁽²⁾		19,365	D	\$136.33 ⁽⁹⁾	316,232	D	
Common Stock	08/07/2015		s ⁽²⁾		15,256	D	\$140.36 ⁽¹⁰⁾	300,976	D	
Common Stock	08/07/2015		s ⁽²⁾		15,815	D	\$141.32 ⁽¹¹⁾	285,161	D	
Common Stock	08/07/2015		s ⁽²⁾		7,293	D	\$142.35 ⁽¹²⁾	277,868	D	
Common Stock	08/07/2015		s ⁽²⁾		13,158	D	\$143.35 ⁽¹³⁾	264,710	D	
Common Stock	08/07/2015		s ⁽²⁾		6,570	D	\$144.4 ⁽¹⁴⁾	258,140	D	
Common Stock	08/07/2015		s ⁽²⁾		4,912	D	\$145.36 ⁽¹⁵⁾	253,228	D	
Common Stock	08/07/2015		s ⁽²⁾		2,063	D	\$146.81 ⁽¹⁶⁾	251,165	D	
Common Stock	08/07/2015		s ⁽²⁾		1,262	D	\$148.3 ⁽¹⁷⁾	249,903	D	
Common Stock	08/07/2015		s ⁽²⁾		1,185	D	\$149.29 ⁽¹⁸⁾	248,718	D	
Common Stock	08/07/2015		s ⁽²⁾		1,019	D	\$150.38 ⁽¹⁹⁾	247,699	D	
Common Stock	08/07/2015		s ⁽²⁾		862	D	\$151.67 ⁽²⁰⁾	246,837	D	
Common Stock	08/07/2015		s ⁽²⁾		79	D	\$153.66	246,758	D	
Common Stock	08/07/2015		s ⁽²⁾		237	D	\$154.59 ⁽²¹⁾	246,521	D	
Common Stock								7,504	I	Nick Leschly 2001 Trust

Table II - Derivative Securities Acquired, Disposed of, or Beneficially Owned (e.g., puts, calls, warrants, options, convertible securities)

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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 or Number of 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
Stock Option (right to buy)	\$2.0864	08/07/2015		M		6,056	(22)	07/13/2021	Common Stock	6,056	\$0.00	32,391	D	
Stock Option (right to buy)	\$2.0864	08/07/2015		M		28,511	(23)	06/04/2022	Common Stock	28,511	\$0.00	38,605	D	
Stock Option (right to buy)	\$5.5004	08/07/2015		M		90,433	(24)	01/16/2023	Common Stock	90,433	\$0.00	390,269	D	

Explanation of Responses:

- Includes 272 shares acquired under bluebird bio employee stock purchase plan on July 31, 2015.
- The sales reported in this Form 4 were effected pursuant to a Rule 10b5-1 trading plan adopted by the reporting person on June 30, 2015.
- The range of prices for the transaction reported on this line was \$130.54 to \$130.58. The average weighted price was \$130.56. 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.
- The range of prices for the transaction reported on this line was \$130.72 to \$131.61. The average weighted price was \$131.12. 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.
- The range of prices for the transaction reported on this line was \$131.85 to \$132.64. The average weighted price was \$132.29. 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.
- The range of prices for the transaction reported on this line was \$132.66 to \$133.65. The average weighted price was \$133.08. 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.
- The range of prices for the transaction reported on this line was \$133.74 to \$134.74. The average weighted price was \$134.24. 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.
- The range of prices for the transaction reported on this line was \$134.95 to \$135.91. The average weighted price was \$135.51. 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.
- The range of prices for the transaction reported on this line was \$135.92 to \$136.92. The average weighted price was \$136.33. 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.
- The range of prices for the transaction reported on this line was \$140.00 to \$140.79. The average weighted price was \$140.36. 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.
- The range of prices for the transaction reported on this line was \$140.82 to \$141.82. The average weighted price was \$141.32. 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.
- The range of prices for the transaction reported on this line was \$141.87 to \$142.87. The average weighted price was \$142.35. 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.
- The range of prices for the transaction reported on this line was \$142.90 to \$143.89. The average weighted price was \$143.35. 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.
- The range of prices for the transaction reported on this line was \$143.91 to \$144.90. The average weighted price was \$144.40. 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.
- The range of prices for the transaction reported on this line was \$145.00 to \$146.00. The average weighted price was \$145.36. 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.
- The range of prices for the transaction reported on this line was \$146.16 to \$147.11. The average weighted price was \$146.81. 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.
- The range of prices for the transaction reported on this line was \$147.81 to \$148.59. The average weighted price was \$148.30. 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.
- The range of prices for the transaction reported on this line was \$149.04 to \$149.61. The average weighted price was \$149.29. 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.
- The range of prices for the transaction reported on this line was \$150.00 to \$151.00. The average weighted price was \$150.38. 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.
- The range of prices for the transaction reported on this line was \$151.01 to \$152.01. The average weighted price was \$151.67. 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.
- The range of prices for the transaction reported on this line was \$154.32 to \$154.75. The average weighted price was \$154.59. 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 April 15, 2012 and in 36 equal monthly installments thereafter
- This option vests over a four-year period, at a rate of twenty-five percent (25%) on May 1, 2013 and in 36 equal monthly installments thereafter.
- This option to purchase shares of our common stock granted on January 16, 2013 with performance-based vesting criteria that were met as of January 1, 2013. The shares underlying these options vested as follows: 25% vested on January 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 08/11/2015

** 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.