

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	
OMB Number:	3235-0287
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1. Name and Address of Reporting Person * <u>Leschly Nick</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) <input checked="" type="checkbox"/> Director 10% Owner <input checked="" type="checkbox"/> Officer (give title below) Other (specify below) <u>President and CEO</u>
	3. Date of Earliest Transaction (Month/Day/Year) <u>12/07/2015</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	12/07/2015		M		32,391	A	\$2.0864	278,912	D	
Common Stock	12/07/2015		M		28,994	A	\$2.0864	307,906	D	
Common Stock	12/07/2015		M		5,335	A	\$5.5004	313,241	D	
Common Stock	12/08/2015		P		4,901	A	\$51.2473	12,405	I	Nick Leschly 2001 Trust
Common Stock	12/08/2015		P		4,781	A	\$52.2576	17,186	I	Nick Leschly 2001 Trust

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	12/07/2015		M			5,335	(1)	01/16/2023	Common Stock	5,335	\$0.00	259,934	D	
Stock Option (right to buy)	\$2.0864	12/07/2015		M			32,391	(2)	07/13/2021	Common Stock	32,391	\$0.00	0	D	
Stock Option (right to buy)	\$2.0864	12/07/2015		M			28,994	(3)	06/04/2022	Common Stock	28,994	\$0.00	9,611	D	

Explanation of Responses:

- 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.
- 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.

Remarks:

/s/ Jason F. Cole, Attorney-in-Fact 12/09/2015

** 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.