

<b>OMB APPROVAL</b>	
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**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

1. Name and Address of Reporting Person* <u>TEPPER ROBERT I</u>  (Last) (First) (Middle) <u>C/O THIRD ROCK VENTURES, L.P.</u> <u>29 NEWBURY STREET</u>  (Street) <u>BOSTON MA 02116</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 Officer (give title below) Other (specify below)
	3. Date of Earliest Transaction (Month/Day/Year) <u>06/24/2013</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	06/24/2013		C		4,734,248 <sup>(1)</sup>	A	\$0.00	4,734,248	I	See footnote <sup>(2)</sup>

**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
Series B Convertible Preferred Stock	(3)	06/24/2013		C			64,377,682	(3)	(3)	Common Stock	3,394,194	(3)	0	I	See footnote <sup>(2)</sup>
Series C Convertible Preferred Stock	(3)	06/24/2013		C			14,379,294	(3)	(3)	Common Stock	758,121	(3)	0	I	See footnote <sup>(2)</sup>
Series D Convertible Preferred Stock	(3)	06/24/2013		C			11,037,527	(3)	(3)	Common Stock	581,933	(3)	0	I	See footnote <sup>(2)</sup>

**Explanation of Responses:**

- Represents the total number of shares received upon conversion of shares of the Issuer's Series B Convertible Preferred Stock (the "Series B Shares"), Series C Convertible Preferred Stock (the "Series C Shares") and Series D Convertible Preferred Stock (the "Series D Shares" and together with the Series B Shares and the Series C Shares, collectively, the "Preferred Shares").
- The securities are directly held by Third Rock Ventures, L.P. ("TRV LP"). The general partner of TRV LP is Third Rock Ventures GP, LP ("TRV GP"). The general partner of TRV GP is TRV GP, LLC. The Reporting Person is a manager of TRV GP, LLC and disclaims beneficial ownership of all shares except to the extent of his pecuniary interest, if any, therein.
- Effective upon the closing of the Issuer's initial public offering of its Common Stock, each Preferred Share automatically converted at a ratio of 18.967-to-one into the number of shares of Common Stock shown in column 7. The Preferred Shares had no expiration date.

**Remarks:**

/s/ Linda C. Bain, Attorney-in-Fact      06/26/2013

\*\* 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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