

bluebird bio, Inc.  
Form 4  
September 10, 2014

**FORM 4** UNITED STATES SECURITIES AND EXCHANGE COMMISSION  
Washington, D.C. 20549

OMB APPROVAL

OMB Number: 3235-0287  
Expires: January 31, 2015  
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 OF SECURITIES**

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934, Section 17(a) of the Public Utility Holding Company Act of 1935 or Section 30(h) of the Investment Company Act of 1940

(Print or Type Responses)

1. Name and Address of Reporting Person \*  
GILLIS STEVEN

(Last) (First) (Middle)

C/O ARCH VENTURE PARTNERS, 8725 WEST HIGGINS ROAD, SUITE 290

(Street)

CHICAGO, IL 60631

(City) (State) (Zip)

2. Issuer Name and Ticker or Trading Symbol  
bluebird bio, Inc. [BLUE]

3. Date of Earliest Transaction (Month/Day/Year)  
09/08/2014

4. If Amendment, Date Original Filed(Month/Day/Year)

5. Relationship of Reporting Person(s) to Issuer

(Check all applicable)

Director  10% Owner  
 Officer (give title below)  Other (specify below)

6. Individual or Joint/Group Filing(Check Applicable Line)

Form filed by One Reporting Person  
 Form filed by More than One Reporting Person

**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 Ownership (Instr. 4)
			Code	V	Amount	(A) or (D)	Price
Common Stock	09/08/2014		J <sup>(1)</sup>		313,877	D	\$ 0
					1,304,711	I	
Common Stock	09/08/2014		J <sup>(1)(3)</sup>		785	A	\$ 0
					1,222	D	

See Footnote (2)

Reminder: Report on a separate line for each class of securities beneficially owned directly or indirectly.

**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 control number.**

SEC 1474 (9-02)

**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 Underlying Securities (Instr. 3 and 4)	8. Price of Derivative Security (Instr. 5)	9. Nu Deriv Secur Bene Own Follo Repo Trans (Instr
				Code	V (A) (D)	Date Exercisable	Expiration Date	Title	Amount or Number of Shares

## Reporting Owners

**Reporting Owner Name / Address**

**Relationships**

Director    10% Owner    Officer    Other

GILLIS STEVEN  
C/O ARCH VENTURE PARTNERS  
8725 WEST HIGGINS ROAD, SUITE 290  
CHICAGO, IL 60631

X

## Signatures

/s/ Steven Gillis                      09/10/2014

           \*\*Signature of                      Date  
Reporting Person

## Explanation of Responses:

- \* 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).

(1) Distribution of Common Stock held by a limited partnership to its partners for no consideration.

These shares are owned directly by ARCH Venture Fund VII, L.P. ("ARCH Fund VII"). The sole general partner of ARCH Fund VII is ARCH Venture Partners VII, L.P. ("ARCH Partners VII"). The sole general partner of ARCH Partners VII is ARCH Venture Partners VII, LLC ("ARCH VII LLC"). The Managing Directors of ARCH VII LLC, Robert T. Nelsen, Keith Crandell and Clinton Bybee, are

(2) deemed to have voting and dispositive power over the shares and may be deemed to beneficially own certain shares held by ARCH Fund VII. Each Managing Director and the Reporting Person disclaims beneficial ownership of these securities, except to the extent of his pecuniary interest therein, and this report shall not be deemed an admission that such Managing Directors and Reporting Person are the beneficial owners of such securities for Section 16 or any other purpose.

Reflects change from indirect to direct ownership of shares previously reported as beneficially owned by the reporting person. Director

(3) Steven Gillis owns an interest in ARCH Partners VII but does not have voting or investment control over the shares held by ARCH Fund VII and disclaims beneficial ownership of such shares, except to the extent of any pecuniary interest therein.

Note: File three copies of this Form, one of which must be manually signed. If space is insufficient, see Instruction 6 for procedure. Potential persons who are to respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB number.