Form S-8 February 21, 2018				
As filed with the Securities and Exchange Commission on February 21, 2018				
Registration No. 333-				
UNITED STATES				
SECURITIES AND EXCHANGE COMMISSION				
WASHINGTON, D.O.	C. 20549			
FORM S-8				
REGISTRATION ST	ATEMENT			
UNDER				
THE SECURITIES A	ACT OF 1933			
bluebird bio, Inc.				
(Exact Name of Regis	strant as Specified in its Charter)			
	Delaware	13-3680878		
	(State or Other Jurisdiction	(I.R.S. Employer Identification No.)		
	of Incorporation or Organization)		
bluebird bio, Inc.				
60 Binney Street				
Cambridge, MA 02142				
Cambridge, MA 0214	Γ <i>L</i>			

(339) 499-9300	
(Address of Principal Executive Offices)	
2013 Stock Option and Incentive Plan	
(Full Title of the Plan)	
Nick Leschly	
President and Chief Executive Officer	
bluebird bio, Inc.	
60 Binney St.	
Cambridge, MA 02142	
(339) 499-9300	
(Name and Address of Agent For Service)	
Copy to:	
Michael H. Bison, Esq.	
Goodwin Procter LLP 100 Northern Avenue	
Boston, Massachusetts 02210	
(617) 570-1000	
Indicate by check mark whether the registrant is a large accelerated filer, an acc or a smaller reporting company. See the definitions of "large accelerated filer," company" in Rule 12b-2 of the Exchange Act.	
Large accelerated filer	Accelerated filer
Non-accelerated filer (Do not check if a smaller reporting company)	Smaller reporting company
	Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

CALCULATION OF REGISTRATION FEE

	Amount	Proposed Maximum	n Proposed Maximum	n Amount of
Title of Securities	to be	Offering Price	Aggregate	Registration
to be Registered 2013 Stock Option and Incentive Plan	Registered(1) 1,976,240 shares (4)	per Share(2) \$198.75	Offering Price \$392,777,700	Fee(3) \$48,901

Common Stock, \$0.01 par value per share

- (1) Pursuant to Rule 416 under the Securities Act of 1933, as amended (the "Securities Act"), this registration statement shall also cover any additional shares of common stock which become issuable under the above-named plan by reason of any stock dividend, stock split, recapitalization or any other similar transaction effected without the receipt of consideration which results in an increase in the number of our outstanding shares of common stock. Pursuant to Rule 416(c) under the Securities Act, this registration statement shall also cover an indeterminate amount of interests to be offered or sold pursuant to the employee benefit plan described herein.
- (2) The price of \$198.75 per share, which is the average of the high and low sale prices of the common stock of the registrant on the NASDAQ Global Select Market on February 13, 2018, is set forth solely for purposes of calculating the registration fee pursuant to Rules 457(c) and (h) of the Securities Act and has been used as these shares are without a fixed price.
- (3) Calculated pursuant to Section 6(b) of the Securities Act.
- (4) Represents an automatic increase to the number of shares available for issuance under the registrant's 2013 Stock Option and Incentive Plan (the "Plan"), effective as of January 1, 2018. Shares available for issuance under the Plan were previously registered on registration statements on Form S-8 filed with the Securities and Exchange Commission on February 22, 2017 (Registration No. 333-216179), February 25, 2016 (Registration No. 333-202283), March 5, 2014 (Registration No. 333-194340) and June 24, 2013 (Registration No. 333-189560).

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This Registration Statement registers additional securities of the same class as other securities for which a registratement filed on Form S-8 (SEC File No. 333-189560) of the Registrant is effective. The information contain the Registrant's registration statement on Form S-8 (SEC File No. 333-189560) is hereby incorporated by refer pursuant to General Instruction E.	ned in
Part II	
INFORMATION REQUIRED IN THE REGISTRATION STATEMENT	
Item 8. Exhibits.	
See the Exhibit Index for a list of exhibits filed as part of this registration statement, which Exhibit Index is incorporated herein by reference.	

EXHIBIT INDEX

Exhibit No.	Description
4.1	Specimen common stock certificate (Incorporated by reference to Exhibit 4.1 to the registrant's
	Registration Statement on Form S-1, as amended (File No. 333-188605)).
4.2	Amended and Restated Certificate of Incorporation (Incorporated by reference to Exhibit 3.1 to the
	registrant's Current Report on Form 8-K filed June 24, 2013 (File No. 001-35966)).
4.3	Amended and Restated Bylaws (Incorporated by reference to Exhibit 3.2 to the registrant's Current
	Report on Form 8-K filed June 24, 2013 (File No. 001-35966)).
4.4	Amendment No. 1 to Amended and Restated Bylaws (Incorporated by reference to Exhibit 3.1 to the
	registrant's Current Report on Form 8-K filed February 11, 2016 (File No. 001-35966)).
5.1	*Opinion of Goodwin Procter LLP.
23.1	*Consent of Goodwin Procter LLP (included in Exhibit 5.1).
23.2	*Consent of Ernst & Young LLP.
24.1	Power of attorney (included on signature page).
99.1	2013 Stock Option and Incentive Plan and forms of award agreement thereunder (Incorporated by
	reference to Exhibit 10.3 to the registrant's Registration Statement on Form S-1, as amended (File No.
	<u>333-188605)).</u>

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-8 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Cambridge, Commonwealth of Massachusetts, on the 21st day of February, 2018.

bluebird bio, Inc.

By:/s/ Nick Leschly
Nick Leschly
President and Chief Executive Officer

^{*}Filed herewith.

POWER OF ATTORNEY

We, the undersigned officers and directors of bluebird bio, Inc., hereby severally constitute and appoint Nick Leschly and Jeffrey Walsh, and each of them singly (with full power to each of them to act alone), our true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution in each of them for him and in his name, place and stead, and in any and all capacities, to sign for us and in our names in the capacities indicated below any and all amendments (including post-effective amendments) to this registration statement, and to file the same, with all exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite or necessary to be done in and about the premises, as full to all intents and purposes as he might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents or any of them, or their or his substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, as amended, this registration statement has been signed by the following persons in the capacities indicated below on the 21st day of February, 2018.

Name Title

/s/ Nick Leschly President, Chief Executive Officer and Director

Nick Leschly (Principal Executive Officer)

/s/ Jeffrey Walsh Chief Financial and Strategy Officer and

Treasurer

Jeffrey Walsh (Principal Financial Officer)

/s/ Kory Wentworth Vice President, Finance

Kory Wentworth (Principal Accounting Officer)

/s/ John O. Agwunobi, M.D. Director John O. Agwunobi, M.D.

/s/ Wendy L. Dixon, Ph.D. Director Wendy L. Dixon, Ph.D.

/s/ Mary Lynne Hedley, Ph.D. Director Mary Lynne Hedley, Ph.D.

/s/ Daniel S. Lynch Director

Daniel S. Lynch

/s/ James Mandell, M.D. Director James Mandell, M.D.

/s/ Douglas A. Melton, Ph.D. Director Douglas A. Melton, Ph.D.

/s/ David P. Schenkein, M.D. Director David P. Schenkein, M.D.

/s/ Mark Vachon Director Mark Vachon