FORM 3

## UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

## INITIAL STATEMENT OF BENEFICIAL OWNERSHIP OF SECURITIES

| OMB APPROVAL             |           |  |  |  |  |  |
|--------------------------|-----------|--|--|--|--|--|
| OMB Number:              | 3235-0104 |  |  |  |  |  |
| Estimated average burden |           |  |  |  |  |  |
| hours per response:      | 0.5       |  |  |  |  |  |

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

| Lengauer Christoph  | 2. Date of Even<br>Requiring State<br>(Month/Day/Yea<br>04/29/2015 | ment   | 3. Issuer Name and Ticker or Trading Symbol Blueprint Medicines Corp [ BPMC ]   |                                       |                                    |   |   |  |  |  |
|---|--|--|---|---------------------------------------|------------------------------------|---|---|--|--|--|
| (Last) (First) (Middle) C/O BLUEPRINT MEDICINES CORPORATION   |  |  | 4. Relationship of Reporting Person(s) to (Check all applicable)  Director  Officer (give title below)  Director below) |                                       | r (N                               | 5. If Amendment, Date of Original Filed (Month/Day/Year) 04/30/2015   |   |  |  |  |
| 38 SIDNEY STREET, SUITE 200   |  |  | Chief Scientific C  | · · · · · · · · · · · · · · · · · · · |                                    | 6. Individual or Joint/Group Filing (Check<br>Applicable Line)  X Form filed by One Reporting Person Form filed by More than One Reporting Person |   |  |  |  |
| (Street) CAMBRIDGE MA 02139   |  |  |   |                                       |                                    |   |   |  |  |  |
| (City) (State) (Zip)  |  |  |   |                                       |                                    |   |   |  |  |  |
| Table I - Non-Derivative Securities Beneficially Owned  |  |  |   |                                       |                                    |   |   |  |  |  |
| 1. Title of Security (Instr. 4)   |  | 2. Amount of Securities<br>Beneficially Owned (Instr. 4) | 3. Ownership<br>Form: Direct (D)<br>or Indirect (I)<br>(Instr. 5)   |                                       |                                    | ture of Indirect Beneficial Ownership<br>: 5)   |   |  |  |  |
| Common Stock  |  |  | 188,332(1)  | D                                     |                                    |   |   |  |  |  |
| Table II - Derivative Securities Beneficially Owned<br>(e.g., puts, calls, warrants, options, convertible securities) |  |  |   |                                       |                                    |   |   |  |  |  |
| 1. Title of Derivative Security (Instr. 4)  | 2. Date Exercisable and<br>Expiration Date<br>(Month/Day/Year)     |  | 3. Title and Amount of Securiti<br>Underlying Derivative Security   |                                       | 4.<br>Conversion                   | se Form:  | 6. Nature of Indirect<br>Beneficial Ownership<br>(Instr. 5) |  |  |  |
|   | Date<br>Exercisable  | Expiration<br>Date                                       | Title   | Amount<br>or<br>Number<br>of Shares   | Price of<br>Derivative<br>Security | Direct (D)<br>or Indirect<br>(I) (Instr. 5)   |   |  |  |  |
| Stock Option (Right to Buy)   | (2)  | 11/03/2023   | Common Stock  | 35,227(1)                             | 1.485                              | D   |   |  |  |  |
| Stock Option (Right to Buy)   | (3)  | 08/14/2024   | Common Stock  | 24,848(1)                             | 1.87                               | D   |   |  |  |  |
| Stock Option (Right to Buy)   | (4)  | 02/10/2025   | Common Stock  | 53,408(1)                             | 8.8                                | D   |   |  |  |  |

## Explanation of Responses:

1. Table II, column 3 of the Form 3 filed on April 30, 2015 (the "Original Form 3") inadvertently included an aggregate of 24,696 shares underlying stock options, which the Reporting Person had previously exercised. These shares were also inadvertently omitted from Table I, column 2 of the Original Form 3. The Reporting Person previously filed an amendment to the Original Form 3 on May 1, 2015 reporting the beneficial ownership of an aggregate of 188,332 shares of common stock in Table I, including the 24,696 shares omitted from Table I, column 2 of the Original Form 3. This amendment is being filed to reduce the aggregate number of shares underlying derivative securities reported in Table II, column 3 of the Original Form 3 by 24,696 shares. These shares were also inadvertently included in the aggregate number of shares underlying derivative securities reported in Table II, column 9 of a Form 4 filed by the Reporting Person on February 5, 2016.

- $2. \ This \ option \ vests \ in \ 48 \ equal \ monthly \ installments \ beginning \ on \ November \ 1, \ 2013.$
- 3. This option vests in 48 equal monthly installments beginning on August 18, 2014.
- 4. This option vests in 48 equal monthly installments beginning on February 10, 2015.

/s/ Christine Bellon, Attorneyin-Fact

03/28/2016

Date

\*\* Signature of Reporting Person

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 5 (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.