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FORM 4

UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

| 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

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

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| | | | 2. Issuer Name and Ticker or Trading Symbol Blueprint Medicines Corp [BPMC] | | tionship of Reporting Person(s) to Issuer all applicable) Director 10% Owner | | |
|-----------------------------|------------|----------------|---|-------------------|--|-----------------------|--|
| | | | | | | | |
| (Last) | (First) | (Middle) | 3. Date of Earliest Transaction (Month/Day/Year) 09/18/2017 | | Officer (give title below) | Other (specify below) | |
| C/O BLUEPRI | NT MEDICIN | ES CORPORATION | | | | | |
| 38 SIDNEY STREET, SUITE 200 | | E 200 | | | | | |
| , | | | 4. If Amendment, Date of Original Filed (Month/Day/Year) | 6. Indiv Line) | vidual or Joint/Group Filing (Check Applicable | | |
| (Street) | | | | X | Form filed by One Re | porting Person | |
| CAMBRIDGE | MA | 02139 | | | Form filed by More that Person | an One Reporting | |
| (City) | (State) | (Zip) | | | | | |

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) | Code (Instr. | | 4. Securities Disposed Of 5) | | | Securities | 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 | Transaction(s) (Instr. 3 and 4) | | (mour 4) |
| Common Stock | 09/18/2017 | | S ⁽¹⁾ | | 2,500 | D | \$ <mark>60</mark> | 209,342 | D | |

 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) | | 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) | 10. Ownership Form: Direct (D) or Indirect (I) (Instr. 4) | 11. Nature of Indirect Beneficial Ownership (Instr. 4) |
|---|---|--|---|---|---|---|--|--|--|---|--|---|--|--|--|
| | | | | Code | v | (Instr and 5 (A) | | Date Expiration Exercisable Date | | Title | Amount or Number of Shares | | (Instr. 4) | | |

Explanation of Responses:

1. The sales reported on this Form 4 were effected pursuant to a trading plan adopted on December 20, 2016 pursuant to Rule 10b5-1 under the Securities Exchange Act of 1934, as amended.

| /s/ Christopher Frankenfield, | 09/18/2017 |
|----------------------------------|------------|
| Attorney-in-Fact | 09/10/2017 |
| ** 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.