UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

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CURRENT REPORT Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934

Date of Report (Date of Earliest Event Reported): September 6, 2016

Blueprint Medicines Corporation

(Exact name of registrant as specified in its charter)

Delaware (State or other jurisdiction of incorporation)

001-37359 (Commission File Number)

26-3632015 (I.R.S. Employer Identification No.)

38 Sidney Street, Suite 200 Cambridge, Massachusetts(Address of principal executive offices)

02139 (Zip Code)

Registrant's telephone number, including area code: (617) 374-7580

(Former name or former address, if changed since last report)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

| | Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425) |
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| | Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12) |
| | Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d |
| | 2(b)) |
| | Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e- |
| | 4(c)) |
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Item 5.02 Departure of Directors or Certain Officers; Election of Directors; Appointment of Certain Officers; Compensatory Arrangements of Certain Officers.

Appointment of Executive Vice President, Chief Legal Officer and Secretary

Effective September 6, 2016, Blueprint Medicines Corporation (the "Company") appointed Tracey McCain as Executive Vice President, Chief Legal Officer and Secretary of the Company and entered into an employment agreement with Ms. McCain that provides for "at will" employment.

Prior to joining the Company, Ms. McCain, age 48, served as Senior Vice President and Head of Legal of Sanofi Genzyme, a global business unit of Sanofi, from January 2016 to September 2, 2016. Ms. McCain held roles of increasing responsibility after joining Genzyme Corporation ("Genzyme") in May 1997, including becoming its General Counsel after Genzyme was acquired by Sanofi in 2011. In her capacity as Senior Vice President and General Counsel of Genzyme from May 2011 to December 2015, she oversaw all aspects of its legal department in the United States and Europe, including general corporate, commercial and intellectual property matters. Prior to joining Genzyme, Ms. McCain was an associate at the law firm Palmer & Dodge LLP where her practice focused on general corporate and securities law matters. Ms. McCain holds a B.A. from the University of Pennsylvania with a major in political science and a J.D. from Columbia University School of Law.

Pursuant to the terms of her employment agreement, Ms. McCain is entitled to an annual base salary of \$405,000 and will receive an initial sign-on bonus of \$100,000 upon the commencement of her employment with the Company. Ms. McCain is also eligible for an annual performance bonus targeted at 35% of her base salary (commencing with a pro-rated bonus for 2016). Pursuant to the terms of her employment agreement, Ms. McCain will also be granted a stock option, effective October 3, 2016, to purchase 100,000 shares of the Company's common stock at an exercise price per share equal to the closing price of the Company's common stock on the date of grant. The stock option will have a ten-year term and will vest as to 25% of the shares underlying the stock option on the first anniversary of the commencement of Ms. McCain's employment with the Company and as to an additional 1/48th of the shares underlying the stock option monthly thereafter. Ms. McCain is eligible to participate in the employee benefit plans generally available to full-time employees, subject to the terms of those plans. Pursuant to the terms of her employment agreement, if Ms. McCain's employment is terminated by us without cause (as defined in her employment agreement) or by Ms. McCain for good reason (as defined in her employment agreement), and subject to Ms. McCain's execution of a release of potential claims against us, Ms. McCain will be entitled to receive: (i) a lump sum in cash in an amount equal to 12 months of base salary and (ii) a monthly cash payment for 12 months for medical and dental benefits or Ms. McCain's COBRA health continuation period, whichever ends earlier. However, in the event that Ms. McCain's employment is terminated by us without cause, or Ms. McCain terminates her employment with us for good reason, in either case within 12 months following the occurrence of a sale event (as defined in her employment agreement), in lieu of the severance payments and benefits described in the preceding sentence and subject to Ms. McCain's execution of a release of potential claims against us, Ms. McCain will be entitled to receive: (i) a lump sum in cash in an amount equal to the sum of 12 months of Ms. McCain's base salary then in effect plus Ms. McCain's target annual incentive compensation for the year in which the termination occurs, (ii) a monthly cash payment for 12 months for medical and dental benefits or Ms. McCain's COBRA health continuation period, whichever ends earlier, and (iii) full and immediate vesting and exercisability of all time-based stock options and other timebased stock-based awards held by Ms. McCain.

In connection with Ms. McCain's appointment as Executive Vice President, Chief Legal Officer and Secretary, Ms. McCain will enter into the Company's standard form of indemnification agreement, a copy of which was filed as Exhibit 10.12 to the Company's Registration Statement on Form S-1 (File No. 333-202938) filed with the Securities and Exchange Commission on March 23, 2015. Pursuant to the terms of the indemnification agreement, the Company may be required, among other things, to indemnify Ms. McCain for some expenses, including attorneys' fees, judgments, fines and settlement amounts incurred by her in any action or proceeding arising out of her service as one of our officers. Ms. McCain has also previously entered into a Non-Competition, Non-Solicitation, Confidentiality and Assignment Agreement that contains, among other things, non-competition and non-solicitation provisions that apply during the term of Ms. McCain's employment and for 12 months thereafter.

Ms. McCain has no family relationship with any of the executive officers or directors of the Company. There are no arrangements or understandings between Ms. McCain and any other person pursuant to which she was appointed as an officer of the Company.

A copy of the Company's press release announcing Ms. McCain's appointment as Executive Vice President, Chief Legal Officer and Secretary is attached as Exhibit 99.1 to this Current Report on Form 8-K.

Item 9.01 Financial Statements and Exhibits.

(d) Exhibits.

| Exhibit No. | Description | | | | |
|-------------|--|--|--|--|--|
| 99.1 | Press release issued by Blueprint Medicines Corporation on September 6, 2016 | | | | |
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SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

BLUEPRINT MEDICINES CORPORATION

By: /s/ Jeffrey W.
Albers Date: September 6, 2016

Jeffrey W. Albers Chief Executive Officer

EXHIBIT INDEX

Exhibit No.Description99.1Press release issued by Blueprint Medicines Corporation on September 6, 2016



Blueprint Medicines Announces Appointment of Tracey McCain as Chief Legal Officer and Executive Vice President

CAMBRIDGE, Mass., Sept. 6, 2016 – Blueprint Medicines Corporation (NASDAQ: BPMC), a leader in discovering and developing highly selective investigational kinase medicines for patients with genomically defined diseases, today announced the appointment of Tracey McCain as Chief Legal Officer and Executive Vice President. Ms. McCain will be a member of the executive management team and will be responsible for all corporate legal operations for Blueprint Medicines.

"We are excited to welcome Tracey to our management team. She brings a wealth of global legal experience and a proven ability to tackle the legal challenges associated with the development and commercialization of medicines for patients suffering from rare diseases," said Jeff Albers, Chief Executive Officer of Blueprint Medicines. "I am confident that she will play an instrumental role as we continue to advance our discovery and clinical stage pipeline and seek to build Blueprint Medicines into a fully-integrated biopharmaceutical company."

Ms. McCain joins Blueprint Medicines with over 20 years of biopharmaceutical industry experience. Most recently, Ms. McCain served as Senior Vice President and Head of Legal at Sanofi Genzyme, a global business unit of Sanofi. She became the General Counsel of Genzyme Corporation ("Genzyme") after its acquisition by Sanofi in 2011. As Genzyme's General Counsel, she oversaw all aspects of Genzyme's legal department in the United States and Europe, including general corporate, commercial and intellectual property matters, and supported business development initiatives. Before Genzyme, Ms. McCain was an associate at Palmer & Dodge LLP. Ms. McCain received her B.A. in political science from the University of Pennsylvania and her J.D. from Columbia University School of Law, where she was recognized as a Harlan Fiske Stone Scholar.

"With preliminary data expected for three Phase 1 clinical trials by year-end, I am thrilled to join the team at this important stage of growth and development," said Ms. McCain. "I believe Blueprint Medicines has the potential to make a difference in the lives of patients with cancer and other genomically defined diseases, and I am eager to contribute to the effort."

About Blueprint Medicines

Blueprint Medicines is developing a new generation of highly selective and potent kinase medicines to improve the lives of patients with genomically defined diseases. The Company's approach is rooted in a deep understanding of the genetic blueprint of cancer and other diseases driven by the abnormal activation of kinases. Blueprint Medicines is advancing three programs in clinical development for subsets of patients with gastrointestinal stromal tumors, hepatocellular carcinoma and systemic mastocytosis, as well as multiple programs in research and preclinical development. For more information, please visit www.blueprintmedicines.com.

Cautionary Note Regarding Forward-Looking Statements

This press release contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995, as amended, including, without limitation, statements regarding the timing of preliminary clinical data for Blueprint Medicines' Phase 1 clinical trials for BLU-285 and BLU-554; and Blueprint Medicines' strategy, business plans and focus. The words "may," "will," "could," "would," "should," "expect," "plan," "anticipate," "intend," "believe," "estimate," "predict," "project," "potential," "continue," "target" and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. Any forward-looking statements in this press release are based on management's current expectations and beliefs and are subject to a number of risks, uncertainties and important factors that may cause actual events or results to differ materially from those expressed or implied by any forward-looking statements contained in this press release, including, without limitation, risks and uncertainties related to the delay of any current or planned clinical trials or the development of Blueprint Medicines' drug product candidates, including BLU-285 and BLU-554; Blueprint Medicines' advancement of multiple early-stage efforts; Blueprint Medicines' ability to successfully demonstrate the efficacy and safety of its drug product candidates; the preclinical and clinical results for Blueprint Medicines' drug product candidates, which may not support further development of such drug product candidates; and actions of regulatory agencies, which may affect the initiation, timing and progress of clinical trials; Blueprint Medicines' ability to develop and commercialize companion diagnostics for its current and future drug candidates, including a companion diagnostic for BLU-285; and the success of Blueprint Medicines' rare genetic disease collaboration with Alexion Pharma Holding and its cancer immunotherapy collaboration with F. Hoffmann-La

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