UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 8-K

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

Date of Report (Date of Earliest Event Reported): **March 9, 2017**

Blueprint Medicines Corporation

(Exact name of registrant as specified in its charter)

Delaware	**001-37359**	**26-3632015**
(State or other jurisdiction of incorporation)	(Commission File Number)	(I.R.S. Employer Identification No.)

38 Sidney Street, Suite 200 **Cambridge, Massachusetts**	**02139**
(Address of principal executive offices)	(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)
☐ 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))

Item 2.02 Results of Operations and Financial Condition.

On March 9, 2017, Blueprint Medicines Corporation (the "Company") announced its financial results for the quarter and year ended December 31, 2016. The full text of the press release issued in connection with the announcement is furnished as Exhibit 99.1 to this Current Report on Form 8-K and is incorporated by reference herein.

The information in this Current Report on Form 8-K, including Exhibit 99.1 attached hereto, is intended to be furnished and shall not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), or otherwise subject to the liabilities of that section, nor shall it be deemed incorporated by reference in any filing under the Securities Act of 1933, as amended, or the Exchange Act, except as expressly set forth by specific reference in such filing.

Item 9.01 Financial Statements and Exhibits.

(d) Exhibits.

The following exhibit relating to Item 2.02 of this Current Report on Form 8-K shall be deemed to be furnished and not filed:

Exhibit No.	Description
99.1	Press release issued by Blueprint Medicines Corporation on March 9, 2017

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

Date: March 9, 2017

By: /s/ Jeffrey W. Albers
Jeffrey W. Albers
Chief Executive Officer

EXHIBIT INDEX

Exhibit No.	Description
99.1	Press release issued by Blueprint Medicines Corporation on March 9, 2017

Blueprint Medicines Reports Fourth Quarter and Full Year 2016 Financial Results

– Presented proof-of-concept data for BLU-285 and BLU-554 in four patient populations at EORTC-NCI-AACR and ASH Meetings –
– Continuing to enroll patients in expansion portion of Phase 1 trial for HCC, initiated expansion portion of Phase 1 trial for GIST and continuing to advance Phase 1 trial for SM toward expansion –
– Investigational new drug application for BLU-667 approved by the FDA –
– Completed successful public offering of common stock in December 2016 and ended year with $268 million in cash, cash equivalents and investments –

CAMBRIDGE, Mass., March 9, 2017 – Blueprint Medicines Corporation (NASDAQ: BPMC), a leader in discovering and developing targeted kinase medicines for patients with genomically defined diseases, today reported financial results and provided a business update for the fourth quarter and year ended December 31, 2016.

"2016 was a transformative year for Blueprint Medicines in which we achieved all of our corporate goals, including a number of important milestones," said Jeff Albers, Chief Executive Officer of Blueprint Medicines. "When Blueprint Medicines began operations in 2011, we were committed to building a diversified portfolio, grounded in our differentiated scientific platform, with the potential to bring innovative targeted therapies to patients in areas of high medical need. In 2016 we began to realize this vision, and 2017 will be a year where that vision comes into clearer focus. In 2016, we announced proof-of-concept data from three Phase 1 trials in genomically-defined patient populations, received FDA approval to begin a Phase 1 trial for BLU-667, continued to expand our pipeline and announced a collaboration with Roche that enables us to accelerate and build upon our efforts in cancer immunotherapy. Looking ahead to 2017, we expect multiple potential milestones, including presenting updated data for our ongoing Phase 1 trials for BLU-285 and BLU-554, which will provide further insight into the safety, clinical activity and clinical development pathways for these investigational medicines."

Clinical Programs:

BLU-554: Hepatocellular Carcinoma (HCC)

- In November 2016, Blueprint Medicines presented data from its ongoing, global Phase 1 clinical trial for BLU-554 in patients with advanced HCC at the 28th EORTC-NCI-AACR Symposium on Molecular Targets and Cancer Therapeutics (EORTC-NCI-AACR). BLU-554 was designed as a potent and selective inhibitor of FGFR4 and may offer the first biomarker-driven targeted therapy for patients with advanced HCC. The data demonstrated encouraging single agent clinical activity of BLU-554 in heavily pre-treated advanced HCC patients as well as pharmacodynamic evidence of FGFR4 pathway modulation. Read the full data here. The maximum tolerated dose (MTD) was determined to be 600 mg once daily (QD), and enrollment in the dose expansion portion of this clinical trial is ongoing at the MTD. Blueprint Medicines anticipates providing updated data from this clinical trial in 2017.

BLU-285: Gastrointestinal Stromal Tumors (GIST)

- In November 2016, Blueprint Medicines presented data from its ongoing Phase 1 clinical trial for BLU-285 in two patient populations with GIST, a rare disease that is a sarcoma of the GI tract, in an oral presentation at EORTC-NCI-AACR. BLU-285 is a unique, investigational medicine that has been designed to target mutations in the PDGFRα and KIT genes, which are two genetic drivers of GIST. The data showed that BLU-285 demonstrated significant preliminary clinical activity, including tumor reductions in patients with PDGFRα-driven GIST beginning with the first dose level and tumor reductions at higher dose levels in refractory patients with KIT-driven GIST. The data also showed that BLU-285 was well tolerated with no patients discontinuing treatment due to adverse events. Read the full data here. Enrollment in the escalation portion of this clinical trial has been completed, and an MTD of 400 mg QD has been defined. Enrollment in the dose expansion portion of this clinical trial is ongoing. Blueprint Medicines anticipates providing updated data from this clinical trial in 2017.

BLU-285: Systemic Mastocytosis (SM)

- In December 2016, Blueprint Medicines presented data from its ongoing Phase 1 clinical trial for BLU-285 in patients with advanced SM, a rare and severe blood disease that affects the mast cells, at the 2016 American Society of Hematology (ASH) Annual Meeting. As highlighted above, BLU-285 was designed to target mutations in the KIT gene, including the D816V mutation, which is a key disease driver in approximately 90-95% of patients with SM. The data showed encouraging early clinical activity for BLU-285 in patients with advanced SM, beginning at the lowest dose levels, and marked decreases in objective measures of mast cell burden. The data also showed that BLU-285 was well tolerated, with no patients discontinuing treatment due to adverse events. Read the full data here. Enrollment in the dose escalation portion of this clinical trial is ongoing. Blueprint Medicines anticipates providing updated data from this clinical trial in 2017.

BLU-667: Non-Small Cell Lung Cancer (NSCLC), Medullary Thyroid Carcinoma (MTC) and other advanced solid tumors with RET alterations

- BLU-667 is a selective inhibitor of RET activating fusions, mutations and predicted resistance mutations.
- In January 2017, Blueprint Medicines announced that the FDA approved its investigational new drug application for BLU-667 for the treatment of NSCLC, thyroid cancer and other advanced solid tumors.
- Blueprint Medicines expects to initiate a Phase 1 clinical trial for BLU-667 in the first half of 2017. This clinical trial is designed to evaluate the safety and tolerability of BLU-667 in multiple ascending doses in patients with NSCLC, MTC and other advanced solid tumors with the goal of establishing an MTD or a recommended dose. Following the identification of a dose and schedule for BLU-667, Blueprint Medicines plans to open expansion cohorts for patients with NSCLC, MTC and other advanced solid tumors with RET alterations.

Corporate Highlights:

- **Strengthened executive leadership team:** In November 2016, Blueprint Medicines announced the appointment of Marion Dorsch, Ph.D. as Chief Scientific Officer and the transition of Christoph Lengauer, Ph.D., MBA, to the role of Executive Vice President, where he is responsible for driving an integrated approach to progressing Blueprint Medicines' portfolio of investigational drugs.
- **Closed Public Offering:** In December 2016, Blueprint Medicines announced the closing of an underwritten public offering of 5,750,000 shares of its common stock at a public offering price of $25.00 per share, including the exercise in full by the underwriters of their option to purchase additional shares of common stock. Blueprint Medicines received net proceeds from the offering of approximately $134.5 million, after deducting underwriting discounts and commissions and estimated offering expenses.

Fourth Quarter and Year End 2016 Financial Results:

- **Cash Position:** As of December 31, 2016, cash, cash equivalents and investments were $268.2 million, as compared to $162.7 million as of December 31, 2015. This increase was primarily due to $134.5 million in net proceeds from the December 2016 follow-on underwritten public offering and an upfront cash payment of $45.0 million in March 2016 upon execution of the collaboration agreement with Roche, partially offset by cash used in operating activities.
- **Collaboration Revenue:** Collaboration revenues were $7.7 million for the fourth quarter of 2016 and $27.8 million for the year ended December 31, 2016, as compared to $4.6 million for the fourth quarter of 2015 and $11.4 million for the year ended December 31, 2015. This increase was due to increased activity in Blueprint Medicines' collaboration with Alexion and Blueprint Medicines entering into a collaboration with Roche in March 2016.
- **R&D Expenses:** Research and development expenses were $24.1 million for the fourth quarter of 2016 and $81.1 million for the year ended December 31, 2016, as compared to $16.4 million for the fourth quarter of 2015 and $48.6 million for the year ended December 31, 2015. This increase was primarily attributable to increased manufacturing and clinical expenses associated with advancing BLU-285 and BLU-554 into clinical trials, increased personnel-related expenses, including stock-based compensation expenses, and continuing to build Blueprint Medicines' platform and advance its discovery pipeline.
- **G&A Expenses:** General and administrative expenses were $5.0 million for the fourth quarter of 2016 and $19.2 million for the year ended December 31, 2016, as compared to $3.6 million for the fourth quarter of 2015 and $14.5 million for the year ended December 31, 2015. This increase was primarily attributable to increased personnel-related expenses, including stock-based compensation expense, and increased professional fees.
- **Net Loss:** Net loss was $21.3 for the fourth quarter of 2016 and $72.5 million for the year ended December 31, 2016, or a net loss per share of $0.75 and $2.64, respectively, as compared to a net loss of $15.6 million for the fourth quarter of 2015 and $52.8 million for the year ended December 31, 2015, or a net loss per share of $0.58 and $3.07, respectively.

Financial Guidance:

Based on its current plans, Blueprint Medicines expects that its existing cash, cash equivalents and investments, excluding any potential option fees and milestone payments under its existing

collaborations, will be sufficient to enable it to fund its operating expenses and capital expenditure requirements into at least late 2018.

Conference Call Information

Blueprint Medicines will host a live conference call and webcast today at 8:30 a.m. ET. The conference call may be accessed by dialing 855-728-4793 (domestic) or 503-343-6666 (international) and referring to conference ID 66277428. A webcast of the conference call will also be available in the Investors section of Blueprint Medicines' website at http://ir.blueprintmedicines.com. The archived webcast will be available on Blueprint Medicines' website approximately two hours after the conference call and will be available for 30 days following the call.

About Blueprint Medicines

Blueprint Medicines is developing a new generation of targeted and potent kinase medicines to improve the lives of patients with genomically defined diseases. Its 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 four clinical trials for subsets of patients with gastrointestinal stromal tumors, hepatocellular carcinoma, systemic mastocytosis, non-small cell lung cancer and medullary thyroid cancer, 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 for initiation of Blueprint Medicines' Phase 1 clinical trial for BLU-667; plans and timelines for the clinical development of BLU-285, BLU-554 and BLU-667; the timing of updated clinical data for Blueprint Medicines' Phase 1 clinical trials for BLU-285 and BLU-554 and other potential milestones in 2017; expectations regarding Blueprint Medicines' existing cash, cash equivalents and investments; 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, BLU-554 and BLU-667; 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 diagnostic tests for its current and future drug candidates, including companion diagnostic tests for BLU-554 with Ventana Medical Systems, Inc. and for BLU-285 with QIAGEN Manchester Limited; and the success of Blueprint Medicines' rare genetic disease collaboration with Alexion Pharma Holding and its cancer immunotherapy collaboration with F. Hoffmann-La Roche Ltd

and Hoffmann-La Roche Inc. These and other risks and uncertainties are described in greater detail in the section entitled “Risk Factors” in Blueprint Medicines’ Quarterly Report on Form 10-Q for the quarter ended September 30, 2016, as filed with the Securities and Exchange Commission (SEC) on November 10, 2016, and other filings that Blueprint Medicines may make with the SEC in the future. Any forward-looking statements contained in this press release represent Blueprint Medicines’ views only as of the date hereof and should not be relied upon as representing its views as of any subsequent date. Blueprint Medicines explicitly disclaims any obligation to update any forward-looking statements.

Blueprint Medicines Corporation
Selected Condensed Consolidated Balance Sheet Data
(in thousands)
(unaudited)

	December 31, 2016	December 31, 2015
Cash, cash equivalents and investments	$ 268,218	$ 162,707
Unbilled accounts receivable	3,577	3,414
Working capital (1)	191,913	151,776
Total assets	282,795	178,898
Deferred revenue	47,235	13,640
Term loan payable	4,069	7,338
Lease incentive obligation	3,370	3,948
Total stockholders' equity	213,078	143,979

(1) Blueprint Medicines defines working capital as current assets less current liabilities.

Blueprint Medicines Corporation
Condensed Consolidated Statements of Operations Data
(in thousands, except per share data)
(unaudited)

	Three Months Ended December 31,		Years Ended December 31,	
	2016	2015	2016	2015
Collaboration revenue	$ 7,691	$ 4,635	$ 27,772	$ 11,400
Operating expenses:				
Research and development	24,073	16,432	81,131	48,588
General and administrative	4,991	3,624	19,218	14,456
Total operating expenses	29,064	20,056	100,349	63,044
Other income (expense):				
Other income (expense), net	201	6	551	(429)
Interest expense	(91)	(160)	(469)	(696)
Total other income (expense)	110	(154)	82	(1,125)
Net loss	$ (21,263)	$ (15,575)	$ (72,495)	$ (52,769)
Convertible preferred stock dividends	—	—	—	(3,153)
Net loss applicable to common stockholders	$ (21,263)	$ (15,575)	$ (72,495)	$ (55,922)
Net loss per share applicable to common stockholders — basic and diluted	$ (0.75)	$ (0.58)	$ (2.64)	$ (3.07)
Weighted-average number of common shares used in net loss per share applicable to common stockholders — basic and diluted	28,450	26,962	27,492	18,236

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