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 26, 2014

Mast Therapeutics, Inc.
(Exact name of registrant as specified in its charter)

Delaware	**001-32157**	**84-1318182**
(State or other jurisdiction of incorporation)	**(Commission File Number)**	**(I.R.S. Employer Identification No.)**

12390 El Camino Real, Suite 150, San Diego, California	**92130**
(Address of principal executive offices)	**(Zip Code)**

Registrant's telephone number, including area code: 858-552-0866

Not Applicable
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 26, 2014, Mast Therapeutics, Inc. issued a press release announcing its financial results for the three months and year ended December 31, 2013. A copy of the press release is furnished as Exhibit 99.1 hereto.

Item 9.01 Financial Statements and Exhibits.

(d) Exhibits.

The list of exhibits called for by this Item is incorporated by reference to the Exhibit Index filed with this report.

The information set forth under Item 2.02 and in Exhibit 99.1 is not being filed for purposes of Section 18 of the Securities Exchange Act of 1934 and is not to be incorporated by reference into any filing of the registrant, whether made before or after the date hereof, regardless of any general incorporation language in any such filing.

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.

Mast Therapeutics, Inc.

March 26, 2014

By: */s/ Patrick L. Keran*
Name: Patrick L. Keran
Title: President and Chief Operating Officer

Exhibit Index

Exhibit No.	Description
99.1	Press Release dated March 26, 2014

Exhibit 99.1

MAST THERAPEUTICS REPORTS FOURTH QUARTER AND FULL YEAR 2013 FINANCIAL RESULTS

SAN DIEGO – March 26, 2014 – Mast Therapeutics, Inc. (NYSE MKT: MSTX) today reported financial results for the fourth quarter and year ended December 31, 2013.

"2013 was a year of great progress for Mast as we delivered on our operational goal of opening 40 clinical sites in the U.S. for EPIC, our pivotal Phase 3 study of MST-188 in sickle cell disease," said Brian M. Culley, Chief Executive Officer. "Already in 2014, we've achieved numerous operational and strategic milestones. First, we initiated ex-U.S. enrollment for EPIC. Second, we initiated our Phase 2 study of MST-188 in combination with recombinant tissue plasminogen activator in patients with acute limb ischemia. Third, we announced positive nonclinical data in heart failure, which suggests MST-188 provides a new mechanistic approach in an area of significant unmet need and commercial opportunity. Fourth, we added another clinical-stage asset in AIR001 as a result of our February acquisition of Aires Pharmaceuticals. We look forward to progressing our pipeline across all of our programs and building upon last year's achievements in 2014, including having a total of 70 EPIC study sites open globally by year-end and announcing our clinical development plans for MST-188 in heart failure."

Fourth Quarter 2013 Operating Results

The Company's net loss for the fourth quarter of 2013 was $5.7 million, or $0.06 per share (basic and diluted), compared to a net loss of $4.0 million, or $0.08 per share (basic and diluted), for the same period in 2012.

Research and development (R&D) expenses for the fourth quarter of 2013 were $3.5 million, an increase of $1.4 million, or 67%, compared to $2.1 million for the same period in 2012. The increase was primarily due to increases of $1.2 million in external clinical study fees and expenses related primarily to EPIC, the Company's phase 3 study of MST-188 in sickle cell disease, and $0.2 million in personnel expenses.

Selling, general and administrative (SG&A) expenses for the fourth quarter of 2013 were $2.1 million, an increase of $0.3 million, or 20%, compared to $1.8 million for the same period in 2012. The increase resulted primarily from an increase in personnel costs and consulting fees.

Year-to-Date Operating Results

The Company's net loss for the year ended December 31, 2013 was $21.5 million, or $0.28 per share (basic and diluted), compared to a net loss of $15.6 million, or $0.33 per share (basic and diluted), for the same period in 2012.

R&D expenses for the year ended December 31, 2013 were $12.9 million, an increase of $4.8 million, or 60%, compared to $8.1 million for the same period in 2012. The increase was primarily due to increases of $6.2 million in external clinical study fees and expenses, $0.4 million in personnel costs and $0.1 million in share-based compensation expense, offset by a $1.9 million decrease in external nonclinical study fees and expenses. The increase in external clinical study fees and expenses was primarily related to EPIC and the thorough QT/QTc study of MST-188. The decrease in external nonclinical study fees and expenses resulted primarily from a decrease in research-related manufacturing activities for ANX-514, which the Company discontinued in 2012.

SG&A expenses for the year ended December 31, 2013 were $8.5 million, an increase of $1.0 million, or 13%, compared to $7.5 million for the same period in 2012. The increase resulted primarily from an increase in consulting fees and legal expenses.

Balance Sheet Highlights

As of December 31, 2013, the Company had cash, cash equivalents and investment securities totaling $44.4 million. Stockholders' equity amounted to $47.8 million as of December 31, 2013.

About Mast Therapeutics

Mast Therapeutics, Inc. is a publicly traded biopharmaceutical company headquartered in San Diego, California. The Company is leveraging the MAST (Molecular Adhesion and Sealant Technology) platform, derived from over two decades of clinical, nonclinical and manufacturing experience with purified and non-purified poloxamers, to develop MST-188, its lead product candidate, for serious or life-threatening diseases and conditions typically characterized by impaired microvascular blood flow and damaged cell membranes.

The Company is enrolling subjects in EPIC, a pivotal phase 3 study of MST-188 in sickle cell disease, and has initiated a phase 2, clinical proof-of-concept study to evaluate whether MST-188 improves the effectiveness of recombinant tissue plasminogen activator therapy in patients with acute limb ischemia. The Company also is developing MST-188 in heart failure and plans to announce its clinical development plans in this indication in the second half of 2014. More information can be found on the Company's web site at www.masttherapeutics.com. (Twitter: @MastThera)

Forward Looking Statements

Mast Therapeutics cautions you that statements included in this press release that are not a description of historical facts are forward-looking statements that are based on the Company's current expectations and assumptions. Such forward-looking statements include, but are not limited to, statements relating to progress with the EPIC study, including the total number of study sites expected to be open at year-end, and the Company's clinical development plans for MST-188 in heart failure. Among the factors that could cause or contribute to material differences between the Company's actual results and the expectations indicated by the forward-looking statements are risks and uncertainties that include, but are not limited to: the uncertainty of outcomes in ongoing and future studies of the Company's product candidates and the risk that its product candidates, including MST-188, may not demonstrate adequate safety, efficacy or tolerability in one or more such studies, including EPIC; delays in the commencement or completion of clinical studies, including as a result of difficulties in obtaining regulatory agency agreement on clinical development plans or clinical study design, opening trial sites, enrolling study subjects, manufacturing sufficient quantities of clinical trial material, being subject to a "clinical hold," and/or suspension or termination of a clinical study, including due to patient safety concerns or lack of funding; the potential for institutional review boards or the FDA or other regulatory agencies to require additional nonclinical or clinical studies prior to initiation of a phase 2 clinical study of MST-188 in heart failure or other indications; the risk that, even if clinical studies are successful, the FDA or other regulatory agencies may determine they are not sufficient to support a new drug application; the potential that, even if clinical studies of a product candidate in one indication are successful, clinical studies in another indication may not be successful; the Company's reliance on contract research organizations (CROs), contract manufacturing organizations (CMOs), and other third parties to assist in the conduct of important aspects of development of its product candidates, including clinical studies, and regulatory activities for its product candidates and that such third parties may fail to perform as expected; the Company's ability to obtain additional funding on a timely basis or on acceptable terms, or at all; the potential for the Company to delay, reduce or discontinue current and/or planned development activities, including clinical studies, partner its product candidates at inopportune times or pursue less expensive but higher-risk and/or lower return development paths if it is unable to raise sufficient additional capital as needed; the risk that, even if the Company successfully develops a product candidate in one or more indications, it may not realize commercial success with its products and may never generate revenue sufficient to achieve profitability; the risk that the Company is not able to adequately protect its intellectual property rights relating to the MAST platform and MST-188 or AIR001 and prevent competitors from duplicating or developing equivalent versions of its product candidates; and other risks and uncertainties more fully described in the Company's press releases and periodic filings with the Securities and Exchange Commission. The Company's public filings with the Securities and Exchange Commission are available at www.sec.gov.

You are cautioned not to place undue reliance on forward-looking statements, which speak only as of the date when made. Mast Therapeutics does not intend to revise or update any forward-looking statement set forth in this press release to reflect events or circumstances arising after the date hereof, except as may be required by law.

Contact:
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[Tables to Follow]

Mast Therapeutics, Inc.
(A Development Stage Enterprise)
Condensed Consolidated Statements of Operations
(In thousands except per share data)

	Three months ended December 31, (Unaudited)		Year ended December 31, (1)	
	2013	2012	2013	2012
Total net revenue	$ —	$ —	$ —	$ —
Operating expenses:				
Research and development	3,520	2,112	12,902	8,088
Selling, general and administrative	2,147	1,787	8,518	7,519
Transaction-related expenses	44	105	79	(69)
Depreciation and amortization	11	12	40	90
Total operating expenses	5,722	4,016	21,539	15,628
Loss from operations	(5,722)	(4,016)	(21,539)	(15,628)
Interest and other income, net	17	19	59	69
Net loss	$ (5,705)	$ (3,997)	$ (21,480)	$ (15,559)
Net loss per share – basic and diluted	$ (0.06)	$ (0.08)	$ (0.28)	$ (0.33)
Weighted average shares – basic and diluted	102,710	47,419	76,586	47,641

(1) The condensed consolidated statements of operations for the years ended December 31, 2013 and 2012 have been derived from the audited financial statements but do not include all of the information and footnotes required by accounting principles generally accepted in the United States for the complete financial statements.

Mast Therapeutics, Inc.
(A Development Stage Enterprise)
Balance Sheet Data
(In thousands)

	December 31, 2013	December 31, 2012
Cash, cash equivalents and investment securities	$ 44,393	$ 36,511
Working capital	40,695	34,603
Total assets	55,250	46,972
Total liabilities	7,442	5,179
Stockholders' equity	47,808	41,792