

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, DC 20549

SCHEDULE 13D
THE SECURITIES EXCHANGE ACT OF 1934
(Amendment No. 1)*

MELA Sciences, Inc.
(Name of Issuer)

Common Stock, \$0.001 par value per share
(Title of Class of Securities)

55277R100
(CUSIP Number)

Broadfin Capital, LLC
237 Park Avenue, Suite 900
New York, New York 10017
Telephone- (212) 808-2460

(Name, Address and Telephone Number of Person Authorized to Receive
Notices and Communications)

March 31, 2014
(Date of Event Which Requires Filing of this Statement)

If the filing person has previously filed a statement on Schedule 13G to report the acquisition that is the subject of this Schedule 13D, and is filing this schedule because of ss.240.13d-1(e), 240.13d-1(f) or 240.13d-1(g), check the following box [].

Note: Schedules filed in paper format shall include a signed original and five copies of the schedule, including all exhibits. See § 240.13d-7 for other parties to whom copies are to be sent.

* The remainder of this cover page shall be filled out for a reporting person's initial filing on this form with respect to the subject class of securities, and for any subsequent amendment containing information which would alter disclosures provided in a prior cover page.

The information required on the remainder of this cover page shall not be deemed to be "filed" for the purpose of Section 18 of the Securities Exchange Act of 1934 ("Act") or otherwise subject to the liabilities of that section of the Act but shall be subject to all other provisions of the Act (however, see the Notes).

CUSIP No. 55277R100

1. NAME OF REPORTING PERSONS
I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY)

Broadfin Capital, LLC

2. CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP*

(a)
(b)

3. SEC USE ONLY

4. SOURCE OF FUNDS

AF, WC

5. CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e)

6. CITIZENSHIP OR PLACE OF ORGANIZATION

Delaware

NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH

7. SOLE VOTING POWER

0

8. SHARED VOTING POWER

9,086,229

9. SOLE DISPOSITIVE POWER

0

10. SHARES DISPOSITIVE POWER

9,086,229

11. AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

9,086,229

12. CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES*

13. PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)

9.99%¹

14. TYPE OF REPORTING PERSON

OO

¹ The percentage of shares of common stock of the Issuer beneficially owned by the Reporting Persons is calculated in accordance with the limitation on the right of the Reporting Persons to convert its Series A Convertible Preferred Stock and warrants into common stock of the Issuer contained in the purchase agreement described in Item 6.



CUSIP No. 55277R100

1. NAME OF REPORTING PERSONS
I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY)

Broadfin Healthcare Master Fund, Ltd.

2. CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP*

(a)
(b)

3. SEC USE ONLY

4. SOURCE OF FUNDS

AF, WC

5. CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e)

6. CITIZENSHIP OR PLACE OF ORGANIZATION

Cayman Islands

NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH

7. SOLE VOTING POWER

0

8. SHARED VOTING POWER

9,086,229

9. SOLE DISPOSITIVE POWER

0

10. SHARES DISPOSITIVE POWER

9,086,229

11. AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

9,086,229

12. CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES*

13. PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)

9.99%²

14. TYPE OF REPORTING PERSON

OO

² The percentage of shares of common stock of the Issuer beneficially owned by the Reporting Persons is calculated in accordance with the limitation on the right of the Reporting Persons to convert its Series A Convertible Preferred Stock and warrants into common stock of the Issuer contained in the purchase agreement described in Item 6.



CUSIP No. 55277R100

1. NAME OF REPORTING PERSONS
I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY)

Kevin Kotler

2. CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP*

(a)
(b)

3. SEC USE ONLY

4. SOURCE OF FUNDS

AF, WC

5. CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e)

6. CITIZENSHIP OR PLACE OF ORGANIZATION

United States of America

NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH

7. SOLE VOTING POWER

0

8. SHARED VOTING POWER

9,086,229

9. SOLE DISPOSITIVE POWER

0

10. SHARES DISPOSITIVE POWER

9,086,229

11. AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

9,086,229

12. CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES*

13. PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)

9.99%³

14. TYPE OF REPORTING PERSON

IN

³ The percentage of shares of common stock of the Issuer beneficially owned by the Reporting Persons is calculated in accordance with the limitation on the right of the Reporting Persons to convert its Series A Convertible Preferred Stock and warrants into common stock of the Issuer contained in the purchase agreement described in Item 6.

CUSIP No. 55277R100

Item 1. Security and Issuer.

This statement on Schedule 13D (the "Schedule 13D") relates to the Common Stock, \$.001 par value per share (the "Common Stock"), of MELA Sciences, Inc., a Delaware corporation with its principal executive offices located at 50 South Buckhout Street, Suite 1, Irvington, New York 10533 (the "Issuer").

Item 2. Identity and Background.

- (a)-(c), (f) This Schedule 13D is being filed jointly by (i) Broadfin Capital, LLC, a Delaware limited liability company, (ii) Broadfin Healthcare Master Fund, Ltd., an exempted company incorporated and existing under the laws of the Cayman Islands, and (iii) Kevin Kotler, a United States citizen (collectively, the "Reporting Persons").

The principal business address of the Reporting Persons is 237 Park Avenue, Suite 900, New York, New York 10017.

Kevin Kotler is the managing member of Broadfin Capital, LLC, an investment management firm that serves as the investment manager to Broadfin Healthcare Master Fund, Ltd. The principal business of Broadfin Healthcare Master Fund, Ltd. is purchasing, holding and selling securities for investment purposes.

- (d) None of the Reporting Persons has, during the last five years, been convicted in a criminal proceeding (excluding traffic violations or similar misdemeanors).
- (e) None of the Reporting Persons has, during the last five years, been a party to a civil proceeding of a judicial or administrative body of competent jurisdiction and as a result of such proceeding was or is subject to a judgment, decree or final order enjoining future violations of, or prohibiting or mandating activities subject to, Federal or state securities laws or finding any violation with respect to such laws.
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Item 3. Source and Amount of Funds or Other Consideration.

The funds for the purchase of the Shares beneficially owned by the Reporting Persons came from the working capital of Broadfin Healthcare Master Fund, Ltd.

No borrowed funds were used to purchase the Shares, other than any borrowed funds used for working capital purposes (including certain leverage arrangements) in the ordinary course of business.

Item 4. Purpose of Transaction.

The Reporting Persons hold the securities described in Item 5 of this statement for investment purposes only.

No Reporting Person has any present plan or proposal which would relate to or result in any of the matters set forth in subparagraphs (a) - (j) of Item 4 of Schedule 13D except as set forth herein. The Reporting Persons intend to review their investment in the Issuer on a continuing basis. Depending on various factors including, without limitation, the Issuer's financial position and investment strategy, the price levels of the Shares, conditions in the securities markets and general economic and industry conditions, the Reporting Persons may in the future take such actions with respect to their investment in the Issuer as they deem appropriate including, without limitation, making proposals to the Issuer concerning changes to the capitalization, ownership structure or operations of the Issuer, purchasing additional Shares, selling some or all of their Shares, engaging in short selling of or any hedging or similar transaction with respect to the Shares or changing their intention with respect to any and all matters referred to in Item 4.

In connection with the Reporting Persons' investment in the securities described in Item 5, the Reporting Persons were granted the right to designate one director to the Board of Directors of the Issuer, so as long as the Reporting Persons retain 30% of their investment in the Series A Preferred Stock or hold any warrants.

Pursuant to a Letter of Termination of Director Designation Right submitted to the Issuer on March 31, 2014, the Reporting Persons have terminated the aforementioned right to designate one director to the Board of Directors of the Issuer and all rights, obligations and liabilities arising in connection with such right.

Item 5. Interest in Securities of the Issuer.

(a)-(c) As of the date hereof, Broadfin Capital, LLC, Broadcare Healthcare Master Fund, Ltd. and Kevin Kotler may be deemed to be the beneficial owner of 9,086,229 shares of Common Stock or 9.99%⁴ of the shares of the Common Stock of the Issuer, based upon the 47,755,791 shares of Common Stock outstanding as of February 28, 2014, according to the Issuer's Form 10-K filed on March 17, 2014. The 9,086,229 shares of Common Stock include 4,761,905 Shares that may be acquired upon the conversion of Series A Convertible Preferred Stock into Common Stock of the Issuer and 4,324,324 shares of Common Stock that may be acquired upon the exercise of a warrant for Common Stock of the Issuer (the "Warrant").

Each of Broadfin Capital, LLC, Broadfin Healthcare Master Fund, Ltd. and Kevin Kotler has the sole power to vote or direct the vote of 0 shares of Common Stock and the shared power to vote or direct the vote of 9,086,229 shares of Common Stock.

Each of Broadfin Capital, LLC, Broadfin Healthcare Master Fund and Kevin Kotler has the sole power to dispose or direct the disposition of 0 shares of Common Stock and the shared power to dispose or direct the disposition of 9,086,229 shares of Common Stock.

There have been transactions in the securities of the Issuer since the Schedule 13D previously filed by the Reporting Persons on March 3, 2014.

The Reporting Persons specifically disclaim beneficial ownership in the shares of Common Stock reported herein except to the extent of their pecuniary interest therein.

⁴ The percentage of shares of Common Stock of the Issuer beneficially owned by the Reporting Persons is calculated in accordance with the limitation on the right of the Reporting Persons to convert its Series A Convertible Preferred Stock and warrants into Common Stock of the Issuer contained in the purchase agreement described in Item 6.

Item 6. Contracts, Arrangements, Understandings or Relationships with Respect to Securities of the Issuer.

On February 5, 2014, pursuant to the terms of a securities purchase agreement, dated as of January 31, 2014, the Reporting Persons were sold (i) 4,000 shares of Series A Preferred Stock, which may be converted to 4,761,901 shares of Common Stock of the Issuer, and (ii) a Warrant, which may be exercised for 4,324,324 shares of Common Stock of the Issuer. In connection with this securities purchase agreement, the Reporting Persons shall not have the right to convert any portion of the Series A Convertible Preferred Stock or exercise the Warrant to purchase shares of Common Stock, to the extent that, after giving effect to the conversion or exercise, the Reporting Persons (directly or indirectly) would beneficially own in excess of 9.99% of the number of shares of the Common Stock outstanding immediately after giving effect to the issuance of shares of Common Stock issuable upon conversion of the Series A Convertible Preferred Stock or the exercise of the Warrant held by the Reporting Persons.

In connection with the Reporting Persons' investment in the securities pursuant to the securities purchase agreement described above, the Reporting Persons were granted the right to designate one director to the Board of Directors of the Issuer, so long as the Reporting Persons retain 30% of their investment in the Series A Preferred Stock or hold any warrants.

Pursuant to a Letter of Termination of Director Designation Right submitted to the Issuer on March 31, 2014, the Reporting Persons have terminated the aforementioned right to designate one director to the Board of Directors of the Issuer and all rights, obligations and liabilities arising in connection with such right.

Item 7. Material to be Filed as Exhibits.

An agreement relating to the filing of a joint statement as required by Rule 13d-1(f) under the Securities Exchange Act of 1934 is filed herewith as Exhibit A.

A Letter of Termination of Director Designation Right from Broadfin Healthcare Master Fund, LTD to MELA Sciences, Inc. dated March 31, 2014 is filed herewith as Exhibit B.

SIGNATURE

After reasonable inquiry and to the best of my knowledge and belief, I certify that the information set forth in this statement is true, complete and correct.

April 3, 2014

(Date)

BROADFIN CAPITAL, LLC

By: /s/ Kevin Kotler

Kevin Kotler, Managing Member

KEVIN KOTLER

/s/ Kevin Kotler

BROADFIN HEALTHCARE MASTER FUND, LTD.

By: /s/ Kevin Kotler

Kevin Kotler, Director

Attention: Intentional misstatements or omissions of fact constitute Federal criminal violations (see 18 U.S.C. 1001).

LETTER OF TERMINATION OF DIRECTOR DESIGNATION RIGHT

Broadfin Healthcare Master Fund, Ltd.
221 Park Avenue, 9th Floor
New York, NY 10017

March 31, 2014

MELA Sciences, Inc.
50 S. Buckhout Street, Suite 1
Irvington, NY 10536

Attn: Rose Crane

RE: Termination of Director Designation Right

Dear Ms. Crane:

Reference is hereby made to a certain Director Designation Right Letter from MELA Sciences, Inc. dated as of February 5, 2014 ("Designation Right Letter"). For your convenience, we have enclosed a copy of the Designation Right Letter. Broadfin Healthcare Master Fund, Ltd. hereby terminates the Designation Right Letter and all rights, obligations and liabilities arising in connection therewith and hereby requests your acknowledgment and agreement that such termination is effective immediately. Please acknowledge and accept such immediate termination by executing a copy of this letter and returning it to us as soon as possible.

Please do not hesitate to contact the undersigned with any questions you may have in this regard. Thank you in advance for your prompt attention to this matter.

Very truly yours,

Broadfin Healthcare Master Fund, LTD

By: /s/ Kevin Kotler

Kevin Kotler
Director

Acknowledged and agreed:

MELA Sciences, Inc.

By: /s/ Rose Crane

Rose Crane
Chief Executive Officer