

UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
WASHINGTON, DC 20549

SCHEDULE 13D  
THE SECURITIES EXCHANGE ACT OF 1934  
(Amendment No. 2)\*

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MELA Sciences, Inc.  
(Name of Issuer)

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

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55277R308  
(CUSIP Number)

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Broadfin Capital, LLC  
300 Park Avenue, 25<sup>th</sup> Floor  
New York, New York 10022  
Telephone- (212) 808-2460  
(Name, Address and Telephone Number of Person Authorized to Receive  
Notices and Communications)

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August 11, 2015  
(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).

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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  
  
1,274,297
  9. SOLE DISPOSITIVE POWER  
  
0
  10. SHARES DISPOSITIVE POWER   
  
1,274,297
  11. AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON  
  
1,274,297
  12. CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES\*
  13. PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)  
  
12.88%<sup>1</sup>
  14. TYPE OF REPORTING PERSON  
  
OO

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<sup>1</sup> 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 warrants into common stock of the Issuer contained in the purchase agreement described in Item 6.

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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

1,274,297

9. SOLE DISPOSITIVE POWER

0

10. SHARES DISPOSITIVE POWER

1,274,297

11. AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

1,274,297

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

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

12.88%<sup>2</sup>

14. TYPE OF REPORTING PERSON

OO

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<sup>2</sup> 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 warrants into common stock of the Issuer contained in the purchase agreement described in Item 6.

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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

1,274,297

9. SOLE DISPOSITIVE POWER

0

10. SHARES DISPOSITIVE POWER

1,274,297

11. AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

1,274,297

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

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

12.88%<sup>3</sup>

14. TYPE OF REPORTING PERSON

IN

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<sup>3</sup> 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 warrants into common stock of the Issuer contained in the purchase agreement described in Item 6.

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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 100 Lakeside Drive, Suite 100, Horsham, Pennsylvania 19044 (the "Issuer").

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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 300 Park Avenue, 25<sup>th</sup> Floor, New York, New York 10022.

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.

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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.

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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 1,274,297 shares of Common Stock or 12.88%<sup>4</sup> of the shares of the Common Stock of the Issuer, based upon the 9,887,358 shares of Common Stock outstanding as of August 13, 2015, according to the Issuer's Form 10-Q filed on August 14, 2015.

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 1,274,297 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 1,274,297 shares of Common Stock.

There transactions in the securities of the Issuer in the last 60 days are set forth in Exhibit B.

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

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<sup>4</sup> 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 warrants into Common Stock of the Issuer contained in the purchase agreement described in Item 6.

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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 a warrant for Common Stock of the Issuer, which may be exercised for 432,432 shares of Common Stock of the Issuer.

On July 24, 2014, the Reporting Persons were sold a warrant for Common Stock of the Issuer, which may be exercised for 1,267,849 shares of Common Stock of the Issuer.

On July 24, 2014, the Reporting Persons were sold a warrant for Common Stock of the Issuer, which may be exercised for 1,559,454 shares of Common Stock of the Issuer.

On June 22, 2015, the Reporting Persons were sold a warrant for Common Stock of the Issuer, which may be exercised for 1,500,00 shares of Common Stock of the Issuer.

On July 24, 2014, the Reporting Persons were issued debentures which are convertible into shares into 377,177 of Common Stock of the Issuer at a conversion price of \$2.565 per share. The Debentures bear interest at an annual rate of 4%, payable quarterly or upon conversion into shares of Common Stock of the Issuer.

On June 22, 2015, the Reporting Persons were issued debentures which are convertible into shares into 20,000,000 of Common Stock of the Issuer at a conversion price of \$0.75 per share. The Debentures bear interest at an annual rate of 2.25% per year. Under the terms of the Debentures, the issuances of shares of the common stock of the Issuer upon conversion are subject to the approval by the Issuer's stockholders.

In connection with the securities purchase agreement described above, the Reporting Persons shall not have the right to exercise the warrants 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 the exercise of the warrants held by the Reporting Persons.

On June 22, 2015, the Reporting Persons were granted a senior secured note (the "Note"). The Note bears interest at 9% per year with a maturity date of the earlier of 30 days after the Issuer obtains stockholder approval of stock issuances under the certain related debentures and warrants or November 30, 2015.

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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.

Transactions in the Issuer in the last 60 Days is filed herewith as Exhibit B.

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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.

August 24, 2015

(Date)

BROADFIN CAPITAL, LLC

By: /s/ Kevin Kotler

Kevin Kotler, Managing Member

KEVIN KOTLER

/s/ Kevin Kotler

Kevin Kotler, Managing Member

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).

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AGREEMENT

The undersigned agree that this Schedule 13D Amendment, dated August 24, 2015, relating to the Common Stock par value \$0.001 of MELA Sciences, Inc. shall be filed on behalf of the undersigned.

August 24, 2015

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(Date)

BROADFIN CAPITAL, LLC

By: /s/ Kevin Kotler

Kevin Kotler, Managing Member

KEVIN KOTLER

/s/ Kevin Kotler

Kevin Kotler, Managing Member

BROADFIN HEALTHCARE MASTER FUND, LTD.

By: /s/ Kevin Kotler

Kevin Kotler, Director

  

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TRANSACTIONS IN THE ISSUER BY THE REPORTING PERSONS  
DURING THE PAST SIXTY DAYS

<b>DATE</b>	<b>SECURITY</b>	<b>TRANSACTION</b>	<b>AMOUNT</b>	<b>PRICE</b>
06/23/2015	Common Stock \$0.001 par value per share	Conversion*	383,625	\$2.565
08/11/2015	Common Stock \$0.001 par value per share	Conversion**	890,672	\$2.565

\*Conversion of Series B Convertible Preferred Stock into 383,625 shares of Common Stock \$0.001 par value per share.

\*\*Conversion of Convertible Debentures into 890,672 shares of Common Stock \$0.001 par value per share.

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