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**SECURITIES AND EXCHANGE COMMISSION**

Washington, D.C. 20549

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**SCHEDULE 13D**

(Rule 13d-101)

**INFORMATION TO BE INCLUDED IN STATEMENTS FILED PURSUANT TO §240.13d-1(a) AND  
AMENDMENTS THERETO FILED PURSUANT TO §240.13d-1(a).**

**UNDER THE SECURITIES EXCHANGE ACT OF 1934**

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**LipoScience, Inc.**

(Name of Issuer)

**Common Stock, Par Value \$0.001 Per Share**  
(Title of Class of Securities)

**53630M108**  
(CUSIP Number)

**F. Samuel Eberts III**  
**Senior Vice President, Chief Legal Officer and Secretary**  
**Laboratory Corporation of America Holdings**  
**358 South Main Street**  
**Burlington, NC 27215**

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

**September 24, 2014**

(Date of Event which Requires Filing of this Statement)

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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 §§240.13d-1(e), 240.13d-1(f) or 240.13d-1(g), check the following box.

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1	Names of Reporting Persons Laboratory Corporation of America Holdings	
2	Check the Appropriate Box if a Member of a Group (See Instructions) (a) <input type="checkbox"/> (b) <input type="checkbox"/>	
3	SEC Use Only	
4	Source of Funds (See Instructions) WC, OO	
5	Check if Disclosure of Legal Proceedings Is Required Pursuant to Items 2(d) or 2(e) <input type="checkbox"/>	
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 2,709,300*†
	9	Sole Dispositive Power 0
	10	Shared Dispositive Power 2,709,300*†
11	Aggregate Amount Beneficially Owned by Each Reporting Person 2,709,300*†	
12	Check if the Aggregate Amount in Row (11) Excludes Certain Shares (See Instructions) <input type="checkbox"/>	
13	Percent of Class Represented by Amount in Row (11) 17.7%*	
14	Type of Reporting Person (See Instructions) CO	

\* Beneficial ownership of the common stock, par value \$0.001 per share of LipoScience, Inc., a Delaware corporation (the "Issuer"), is being reported hereunder solely because the Reporting Person may be deemed to be the beneficial owner of such Issuer common stock by virtue of the Voting Agreements (defined in Item 4) described in Item 4 of this Schedule 13D. Neither the filing of this Schedule 13D nor any of its contents shall be deemed to constitute an admission by the Reporting Person that it is the beneficial owner of any Issuer common stock for any purposes other than for purposes of Section 13(d) of the Securities Exchange Act of 1934, as amended (the "Exchange Act").

The shares of Issuer common stock over which the Reporting Person may be deemed to have shared voting and dispositive powers are comprised of the 2,709,300 outstanding shares of Issuer common stock that are currently subject to the Voting Agreements.

† See Items 4, 5 and 6.

**Item 1. Security and Issuer**

This statement on Schedule 13D (the "Schedule 13D") relates to the common stock, par value \$0.001 per share (the "Common Stock"), of LipoScience, Inc., a Delaware corporation (the "Issuer"). The principal executive offices of the Issuer are located at 2500 Sumner Boulevard, Raleigh, North Carolina 27616.

**Item 2. Identity and Background**

- (a) This Schedule 13D is being filed by Laboratory Corporation of America Holdings ("LabCorp" or the "Reporting Person").
- (b) The principal business address of the Reporting Person is 358 South Main Street, Burlington, North Carolina, 27215. The telephone number of the Reporting Person is (336) 229-1127.
- (c) LabCorp is the second largest independent clinical laboratory company in the United States based on 2013 net revenues. Through its national network of laboratories, LabCorp offers a broad range of clinical laboratory tests that are used by the medical profession in core testing, patient diagnosis, and in the monitoring and treatment of disease. In addition, LabCorp has developed specialty testing operations, such as oncology testing, HIV genotyping and phenotyping, diagnostic genetics, cardiovascular disease risk assessment, HCV diagnosis and monitoring and clinical trials. With over 34,000 employees worldwide, LabCorp provides clinical laboratory testing services to clients throughout the United States and other countries including Mexico, the Bahamas, Belgium, Germany, Italy, Spain, the United Kingdom, China, Hong Kong, Singapore, Japan, South Korea and three provinces in Canada. Its clients include physicians, hospitals, managed care organizations, governmental agencies, employers, pharmaceutical companies and other independent clinical laboratories that do not have the breadth of LabCorp's testing capabilities.
- (d) – (e) The name, business address, principal occupation and citizenship of the directors and executive officers of the Reporting Person are set forth on Schedule A attached hereto, and are incorporated herein by reference. During the last five years, the Reporting Person has not, and to the best of its knowledge, none of the persons listed on Schedule A have been (i) convicted in a criminal proceeding (excluding traffic violations and other similar misdemeanors) or (ii) 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.
- (f) The Reporting Person is a Delaware corporation.

**Item 3. Source and Amount of Funds and Other Consideration**

Each Stockholder (defined in Item 4) entered into a Voting Agreement (defined in Item 4) as an inducement to the Reporting Person's willingness to enter into the Merger Agreement (defined in Item 4). The Reporting Person did not pay additional consideration to the Stockholders in connection with the execution and delivery of the Voting Agreements and thus no funds were used for such purpose. The total amount of funds required to pay the aggregate Merger Consideration (defined in Item 4) and to cash out outstanding stock options and restricted stock unit awards is approximately \$85.3 million. The Reporting Person will fund the purchase of the Common Stock and the cash out of outstanding stock options and restricted stock unit awards with cash on hand of the Reporting Person.

**Item 4. Purpose of Transaction**

- (a) – (g)

***Merger Agreement***

On September 24, 2014, LabCorp, Bear Acquisition Corp., a Delaware corporation and a wholly owned subsidiary of LabCorp (the "Merger Sub"), and the Issuer entered into an Agreement and Plan of Merger (the "Merger Agreement"), pursuant to which, subject to the terms and conditions of the Merger Agreement, Merger Sub will merge with and into the Issuer, with the Issuer surviving as a wholly owned subsidiary of the Reporting Person (the "Merger"). The Merger Agreement provides for, subject to the satisfaction or waiver of specified conditions, the acquisition of the Issuer at a price of \$5.25 per share of Common Stock in cash, without interest (the "Merger Consideration"). At the effective time of the Merger (the "Effective Time"), on the terms and conditions set forth in the Merger Agreement, each issued and outstanding share of the Issuer's Common Stock, other than any shares cancelled in accordance with the terms of the Merger Agreement or any Dissenting Shares (defined in the Merger Agreement), will be automatically converted

into the right to receive the Merger Consideration. Additionally, each outstanding option to acquire shares of the Common Stock issued under any of the Issuer's equity compensation plans will be fully vested and exercisable immediately prior to the Effective Time and, if not exercised prior to the Effective Time, will be converted into the right to receive payment in cash for each share of Common Stock subject to such option equal to the amount by which the value of the Merger Consideration exceeds such option's exercise price. Also at the Effective Time, each restricted stock unit award granted under any of the Issuer's equity compensation plans will be converted into the right to receive an amount in cash equal to the product of the Merger Consideration multiplied by the number of shares of Common Stock subject to such restricted stock unit award. The surviving corporation of the Merger also will assume certain warrants to purchase shares of Common Stock, which will be converted into a right to receive, upon exercise and payment of the exercise price, a payment in cash equal to the Merger Consideration for each share of Common Stock that would otherwise be issuable under such warrant. The Issuer's board of directors has unanimously determined that the Merger Agreement and the transactions contemplated thereby are advisable, fair to and in the best interests of the Issuer and its stockholders and has recommended approval of the Merger by the Issuer's stockholders.

The consummation of the Merger is subject to customary closing conditions including the approval of the holders of a majority of the outstanding shares of the Issuer's Common Stock, the absence of certain legal impediments to the consummation of the Merger, and the expiration or termination of the waiting period under the Hart-Scott-Rodino Antitrust Improvements Act of 1976, as amended. The closing of the Merger is not subject to any financing condition or a vote of LabCorp's stockholders.

The foregoing description of the Merger Agreement does not purport to be complete and is qualified in its entirety by reference to the full text of the agreement, the terms of which are incorporated by reference to [Exhibit 1](#) hereto.

#### **Voting Agreements**

In connection with the entry into the Merger Agreement, on September 24, 2014, LabCorp entered into separate Voting Agreements (the "Voting Agreements") with each of the following stockholders: (i) Three Arch Capital, L.P., the holder of 1,771,348 shares of Issuer Common Stock; (ii) TAC Associates, L.P., the holder of 83,740 shares of Issuer Common Stock; (iii) Sightline Healthcare Vintage Fund, L.P., the holder of 161,494 shares of Issuer Common Stock; (iv) Sightline Healthcare Opportunity Fund, LLC, the holder of 100,057 shares of Issuer Common Stock; and (v) Sightline Healthcare Fund III, L.P., the holder of 592,661 shares of Issuer Common Stock (collectively, the "Stockholders"). The Voting Agreements provide that each Stockholder shall, among other things, vote all of the Common Stock that it beneficially owns: (i) in favor of adoption and approval of the Merger Agreement and all other transactions contemplated by the Merger Agreement, including the Merger; (ii) against any action or agreement reasonably expected to result in a breach of any covenant, representation or warranty or any other obligation or agreement of the Issuer or any of its Subsidiaries or Affiliates under the Merger Agreement or that would reasonably be expected to result in any of the conditions to the Issuer's or any of its Subsidiaries' or Affiliates' obligations under the Merger Agreement not being fulfilled; and (iii) against any Takeover Proposal (defined in the Merger Agreement), or any agreement, transaction or other matter that is intended to, or would reasonably be expected to, impede, interfere with, delay, postpone, discourage or materially and adversely affect the consummation of the Merger and all other transactions contemplated by the Merger Agreement. Each of the Stockholders granted an irrevocable proxy to the Reporting Person to vote its Common Stock in accordance with the foregoing.

The foregoing description of the Voting Agreements does not purport to be complete and is qualified in its entirety by reference to the full text of each agreement, the terms of which are incorporated by reference to [Exhibit 2](#) hereto.

(h) Upon consummation of the Merger, the Issuer Common Stock will be delisted and no longer be quoted on the NASDAQ Stock Market.

(i) Upon consummation of the Merger, the Issuer Common Stock will no longer be publicly traded and will become eligible for termination of registration pursuant to Section 12(g)(4) of the Exchange Act.

(j) Except as otherwise described herein, the Reporting Person does not presently have any plans or proposals which relate to or would result in any of the events, actions or conditions specified in paragraphs (a) through (i) of Item 4 of this Schedule 13D (although the Reporting Person reserves the right to develop such plans).

#### **Item 5. Interest in Securities of the Issuer**

(a) - (b) As of the date hereof, the Reporting Person owns no shares of Issuer Common Stock. For purposes of Rule 13d-3 under the Exchange Act ("Rule 13d-3"), however, as a result of entering into the Voting Agreements, the Reporting Person may be deemed to possess shared voting power and shared dispositive power over, and therefore

beneficially own, for purposes of Rule 13d-3, the 2,709,300 shares of Issuer Common Stock that are beneficially owned by the Stockholders, representing approximately 17.7% of the Issuer's Common Stock outstanding as of August 8, 2014. The calculation of the Reporting Person's beneficial ownership is based on 15,276,491 shares of Issuer Common Stock issued and outstanding as of August 8, 2014 as reported on the Issuer's Quarterly Report on Form 10-Q for the quarter ended June 30, 2014. Notwithstanding the foregoing, the Reporting Person hereby disclaims beneficial ownership of such shares of Issuer Common Stock for any purposes other than for purposes of Section 13(d) of the Exchange Act, and this Schedule 13D shall not be construed as an admission that the Reporting Person is, for any other purposes, the beneficial owner of the securities covered by this Schedule 13D.

(c) Except as specifically set forth in this Schedule 13D, the Reporting Person has not, nor to the best knowledge of the Reporting Person, have any of the persons listed on Schedule A, effected any transaction in Common Stock during the past 60 days.

(d) To the best knowledge of the Reporting Person, no person other than the Reporting Person has the right to receive or the power to direct the receipt of dividends from, or the proceeds from the sale of, the securities beneficially owned by the Reporting Person identified in this Item 5.

(e) Not applicable.

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

The information set forth in Items 3, 4 and 5 above and the Merger Agreement and Voting Agreements set forth in Exhibits 1 and 2 are incorporated herein by reference in its entirety. Except as described herein, the Reporting Person and, to the knowledge of the Reporting Person, the persons listed on Schedule A do not have any contracts, arrangements, understandings or relationships (legal or otherwise) with any persons with respect to any securities of the Issuer.

**Item 7. Material to be Filed as Exhibits**

Exhibit  
No.

Description

1. Agreement and Plan of Merger, dated September 24, 2014, among, Laboratory Corporation of America Holdings, Bear Acquisition Corp. and LipoScience, Inc. (incorporated by reference to Exhibit 2.1 to the Issuer's Current Report on Form 8-K, filed with the SEC on September 25, 2014).
2. Form of Voting Agreement between Laboratory Corporation of America Holdings and certain Stockholders of LipoScience, Inc. (incorporated by reference to Exhibit 99.1 to the Issuer's Current Report on Form 8-K, filed with the SEC on September 25, 2014).

**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.

Dated: October 3, 2014

LABORATORY CORPORATION OF AMERICA  
HOLDINGS

By: /s/ F. Samuel Eberts III  
Name: F. Samuel Eberts III  
Title: Senior Vice President and Chief Legal Officer

DIRECTORS AND EXECUTIVE OFFICERS OF LABORATORY CORPORATION OF AMERICA HOLDINGS

Set forth below is the name, principal occupation and citizenship of each director and executive officer of Laboratory Corporation of America Holdings. None of the directors or executive officers named below beneficially owns any Common Stock of LipoScience, Inc. The principal business address of each individual listed below is 358 South Main Street, Burlington, North Carolina, 27215.

Directors of Laboratory Corporation of America Holdings

<u>Name</u>	<u>Principal Occupation or Employment</u>	<u>Citizenship</u>
David P. King	Chairman and Chief Executive Officer of Laboratory Corporation of America Holdings	United States
Kerri B. Anderson	Chairwoman of Chiquita Brands International Inc.	United States
Jean-Luc Bélingard	Chairman of bioMérieux	France
D. Gary Gilliland, M.D., Ph.D.	Vice Dean and Vice President for Precision Medicine at the University of Pennsylvania Perelman School of Medicine	United States
Garheng Kong, M.D., Ph.D.	Managing Partner of Sofinnova HealthQuest Capital	United States
Robert E. Mittelstaedt, Jr.	Dean Emeritus of the W.P. Carey School of Business at Arizona State University	United States
Peter M. Neupert	Operating Partner at Health Evolution Partners	United States
Adam H. Schechter	Executive Vice President of Merck & Co., Inc.	United States
R. Sanders Williams, M.D.	President of The J. David Gladstone Institutes and Professor of Medicine at the University of California San Francisco	United States

Executive Officers of Laboratory Corporation of America Holdings

<u>Name</u>	<u>Principal Occupation or Employment</u>	<u>Citizenship</u>
David P. King	Chairman and Chief Executive Officer	United States
James T. Boyle, Jr	Executive Vice President, Chief Operating Officer	United States
Glenn A. Eisenberg	Executive Vice President, Chief Financial Officer and Treasurer	United States
Mark E. Brecher, M.D.	Senior Vice President, Chief Medical Officer	United States
F. Samuel Eberts III	Senior Vice President, Chief Legal Officer and Secretary	United States
Lance V. Berberian	Senior Vice President, Chief Information Officer	United States
Marcia T. Eisenberg, Ph.D.	Senior Vice President, Chief Scientific Officer	United States
Lisa Hoffman Starr	Senior Vice President, Human Resources	United States