UNITED STATES SECURITIES AND EXCHANGE COMMISSION Washington, D.C. 20549

CURRENT REPORT

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

Date of Report (Date of earliest event reported):

February 23, 2010

Lexicon Pharmaceuticals, Inc.

(Exact name of registrant as specified in its charter)

Delaware (State or other jurisdiction of incorporation or organization) 000-30111 (Commission File Number) 76-0474169 (I.R.S. Employer Identification Number)

8800 Technology Forest Place The Woodlands, Texas 77381 (Address of principal executive offices and Zip Code)

(281) 863-3000 (Registrant's telephone number, including area code)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligations of the registrant under any of the

following prov	sions:
	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 February 23, 2010, we issued a press release to report our financial results for the quarter and year ended December 31, 2009. A copy of the press release is attached to this current report on Form 8-K as Exhibit 99.1.

The information in this Form 8-K and the Exhibit attached to this Form 8-K shall not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934 (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 or the Exchange Act, except as expressly set forth by specific reference in such a filing.

Item 9.01 Financial Statements and Exhibits

(d) Exhibits

Exhibit No.Description99.1— Press Release of Lexicon Pharmaceuticals, Inc. dated February 23, 2010

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 thereunto duly authorized.

Lexicon Pharmaceuticals, Inc.

Date: February 23, 2010 By: /s/ Jeffrey L. Wade

Jeffrey L. Wade

Executive Vice President and

General Counsel

Index to Exhibits

Exhibit No. Description

99.1 — Press Release of Lexicon Pharmaceuticals, Inc. dated February 23, 2010

LEXICON PHARMACEUTICALS PROVIDES CLINICAL PIPELINE UPDATE AND REPORTS 2009 FOURTH QUARTER AND FULL YEAR FINANCIAL RESULTS

Conference Call and Webcast at 11:00 a.m. Eastern Time

The Woodlands, Texas, February 23, 2010 – <u>Lexicon Pharmaceuticals</u>, <u>Inc.</u> (Nasdaq: LXRX), a biopharmaceutical company focused on discovering and developing breakthrough treatments for human disease, today updated its drug development progress and reported financial results for the three months and year ended December 31, 2009.

"We have now established proof-of-concept for two of our clinical programs, with positive results in Phase 2 clinical trials for both LX1031 in IBS and LX4211 in type 2 diabetes," said <u>Dr. Arthur T. Sands</u>, president and chief executive officer of Lexicon. "We look forward to reporting Phase 2 clinical results from our next two programs, LX2931 for rheumatoid arthritis and LX1032 for carcinoid syndrome."

Key Developments of 2009

- Lexicon reported positive results from the Phase 2a clinical trial of its drug candidate for non-constipating <u>irritable bowel syndrome</u> (IBS), <u>LX1031</u>, an inhibitor of tryptophan hydroxylase that acts locally to reduce serotonin synthesis in the gastrointestinal tract. Top-line data demonstrated that the high dose of LX1031 produced statistically-significant improvements in a global assessment of relief of IBS pain and discomfort and in stool consistency as compared to placebo clinical benefits that correspond with a reduction in serotonin synthesis.
- § Lexicon completed Phase 2a studies of its drug candidate for <u>type 2 diabetes</u>, <u>LX4211</u>, an inhibitor of sodium-glucose cotransporter 2 (SGLT2). Top-line data from the Phase 2a trial, reported in January 2010, showed statistically-significant and rapid improvements in multiple parameters in patients with type 2 diabetes, including improved glycemic control and reduced HbA1c within four weeks. In addition, reductions in weight, blood pressure, and triglyceride levels were observed for both treatment arms relative to placebo.
- § Lexicon advanced LX2931, an inhibitor of sphingosine-1-phosphate (S1P) lyase, into a Phase 2a study in patients with <u>rheumatoid arthritis</u>. The Phase 2 clinical trial is designed as a 12-week, randomized, double-blind, placebo-controlled study to evaluate the safety and tolerability of LX2931 and its effects on symptoms associated with rheumatoid arthritis. With enrollment in the study proceeding ahead of schedule, the Company has filed for regulatory authorization to permit enrollment of up to 200 patients, an increase from the originally-planned enrollment of up to 120 patients, which will increase the likelihood of observing a positive statistical trend. The study is being conducted at multiple centers in the United States and Eastern Europe. Top-line data from the expanded trial are expected to be available around the end of the year.
- § Lexicon continues to enroll patients in a Phase 2a study of its drug candidate for <u>carcinoid syndrome</u>, <u>LX1032</u>, an inhibitor of tryptophan hydroxylase that reduces peripheral serotonin production without affecting brain serotonin levels. The Phase 2 clinical trial is designed as a randomized, double-blind, placebo-controlled study to evaluate the safety and tolerability of LX1032 and its effects on symptoms associated with carcinoid syndrome. The study is expected to include up to 28 patients with carcinoid syndrome who are symptomatic despite treatment with currently available therapy. Top-line data from the trial are expected to be available in the second half of 2010.

§ In October 2009, Lexicon completed the public offering and sale of 38.3 million shares of its common stock at \$1.50 per share. The net proceeds of the offering were \$55.2 million, after deducting underwriting discounts and offering expenses.

LX1031 and LX1032 are being developed in a product development collaboration with Symphony Capital Partners, L.P. and its co-investors.

Financial Results

Revenues: Lexicon's revenues for the three months ended December 31, 2009 decreased 78 percent to \$1.4 million from \$6.4 million for the corresponding period in 2008. The decrease was primarily attributable to reduced revenues under Lexicon's alliances with N.V. Organon, Bristol-Myers Squibb and Genentech, Inc., partially offset by increases in revenue under the company's collaboration with Taconic Farms, Inc. For the year ended December 31, 2009, revenues decreased 67 percent to \$10.7 million from \$32.3 million for the corresponding period in 2008.

Research and Development Expenses: Research and development expenses for the three months ended December 31, 2009 decreased 16 percent to \$18.8 million from \$22.4 million for the corresponding period in 2008. The decrease was primarily attributable to lower external preclinical research and development expenses as well as lower salary and benefit costs, partially offset by higher external clinical research and development expenses. For the year ended December 31, 2009, research and development expenses decreased 24 percent to \$81.2 million from \$107.2 million for the corresponding period in 2008.

General and Administrative Expenses: General and administrative expenses for the three months ended December 31, 2009 decreased nine percent to \$4.4 million from \$4.9 million for the corresponding period in 2008. The decrease was primarily attributable to lower consulting and stock-based compensation expenses. For the year ended December 31, 2009, general and administrative expenses decreased 10 percent to \$19.4 million from \$21.6 million for the corresponding period in 2008.

Net Loss Attributable to Lexicon Pharmaceuticals, Inc.: Net loss for the three months ended December 31, 2009 was \$22.0 million, or \$0.13 per share, compared to a net loss of \$15.4 million, or \$0.11 per share, in the corresponding period in 2008. Net loss for the year ended December 31, 2009 was \$82.8 million, or \$0.57 per share, compared to a net loss of \$76.9 million, or \$0.56 per share, for the corresponding period in 2008. For the three months and year ended December 31, 2009, net loss included non-cash, stock-based compensation expense of \$1.2 million and \$5.3 million, respectively. For the three months and year ended December 31, 2008, net loss included non-cash, stock-based compensation expense of \$1.7 million and \$6.5 million, respectively.

Cash and Investments: As of December 31, 2009, Lexicon had \$125.1 million in cash and investments net of its obligations under the credit line secured by its auction rate securities, as compared to \$87.3 million as of September 30, 2009 and \$158.8 million as of December 31, 2008.

Lexicon Conference Call:

Lexicon management will hold a conference call to discuss its clinical development progress and financial results for 2009 and financial guidance for 2010 at 11:00 a.m. Eastern Time on February 23, 2010. The dial-in number for the conference call is 888-220-1244 (within the US/Canada) or 706-679-5615 (international). The conference ID for all callers is 57354686. Investors can access a live webcast of the call at www.lexpharma.com. An archived version of the webcast will be available on the website through March 2, 2010.

About Lexicon

Lexicon is a biopharmaceutical company focused on discovering and developing breakthrough treatments for human disease. Lexicon currently has five drug candidates in development for autoimmune disease, carcinoid syndrome, diabetes, glaucoma and irritable bowel syndrome, all of which were discovered by Lexicon's research team. Lexicon has used its proprietary gene knockout technology to identify more than 100 promising drug targets. Lexicon has focused drug discovery efforts on these biologically-validated targets to create its extensive pipeline of clinical and preclinical programs. For additional information about Lexicon and its programs, please visit www.lexpharma.com.

Safe Harbor Statement

This press release contains "forward-looking statements," including statements relating to Lexicon's clinical development of LX1031, LX1032, LX2931, and LX4211 and the potential therapeutic and commercial potential of LX1031, LX1032, LX2931, and LX4211. This press release also contains forward-looking statements relating to Lexicon's growth and future operating results, discovery and development of products, strategic alliances and intellectual property, as well as other matters that are not historical facts or information. All forward-looking statements are based on management's current assumptions and expectations and involve risks, uncertainties and other important factors, specifically including those relating to Lexicon's ability to successfully conduct clinical development of LX1031, LX1032, LX2931, and LX4211 and preclinical and clinical development of its other potential drug candidates, advance additional candidates into preclinical and clinical development, obtain necessary regulatory approvals, achieve its operational objectives, obtain patent protection for its discoveries and establish strategic alliances, as well as additional factors relating to manufacturing, intellectual property rights, and the therapeutic or commercial value of its drug candidates, that may cause Lexicon's actual results to be materially different from any future results expressed or implied by such forward-looking statements. Information identifying such important factors is contained under "Factors Affecting Forward-Looking Statements" and "Risk Factors" in Lexicon's annual report on Form 10-K for the year ended December 31, 2008, as filed with the Securities and Exchange Commission. Lexicon undertakes no obligation to update or revise any such forward-looking statements, whether as a result of new information, future events or otherwise.

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Lexicon Pharmaceuticals, Inc.

Selected Financial Data

Consolidated Statements of Operations Data	Three Months Ended December 31.					Year Ended December 31,			
(In thousands, except per share data)				2008	_	2009		2008	
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Revenues:		(unau	aiccu)	1		(unau	anco	.,	
Collaborative research	\$	1,292	\$	4,388	\$	9,334	\$	27,177	
Subscription and license fees		120		1,962		1,366		5,144	
Total revenues		1,412		6,350		10,700		32,321	
Operating expenses:		,		ĺ		Ź		Ź	
Research and development, including stock-based compensation									
of \$694, \$1,028, \$3,022 and \$3,941, respectively		18,834		22,364		81,238		107,232	
General and administrative, including stock-based compensation									
of \$502, \$691, \$2,252 and \$2,559, respectively		4,425		4,875		19,418		21,624	
Total operating expenses		23,259		27,239		100,656		128,856	
Loss from operations		(21,847)		(20,889)		(89,956)		(96,535)	
Gain (loss) on investments, net		165		2,008		1,173		(1,314)	
Interest income		211		607		880		5,762	
Interest expense		(786)		(671)		(2,966)		(2,691)	
Other expense, net		(513)		(485)		(2,550)		(2,106)	
Consolidated loss before income taxes		(22,770)		(19,430)		(93,419)		(96,884)	
Income tax benefit		<u> </u>				102		<u> </u>	
Consolidated net loss		(22,770)		(19,430)		(93,317)		(96,884)	
Loss attributable to noncontrolling interest in Symphony Icon, Inc.		765		4,013		10,537		20,024	
Net loss attributable to Lexicon Pharmaceuticals, Inc.	\$	(22,005)	\$	(15,417)	\$	(82,780)	\$	(76,860)	
Net loss attributable to Lexicon Pharmaceuticals, Inc. per common share, basic and diluted	\$	(0.13)	\$	(0.11)	\$	(0.57)	\$	(0.56)	
Shares used in computing net loss attributable to Lexicon Pharmaceuticals, Inc. per common share, basic and diluted		169,872		136,797		145,465		136,797	

Consolidated Balance Sheet Data (In thousands)	As of December 31, 2009	As of December 31, 2008	
	(unaudited)		
Cash and investments, including cash and investments held by Symphony Icon, Inc.	\$ 162,513	\$ 158,798	
Obligations under line of credit	(37,435)		
Cash and investments, net of obligations under line of credit	125,078	158,798	
Property and equipment, net	58,754	65,087	
Goodwill	25,798	25,798	
Total assets	257,761	261,508	
Deferred revenue	15,154	19,884	
Current and long-term debt, including line of credit	66,964	30,492	
Noncontrolling interest in Symphony Icon, Inc.	(290)	10,247	
Accumulated deficit	(570,175)	(487,395)	
Total Lexicon Pharmaceuticals, Inc. stockholders' equity	163,787	185,580	