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

SCHEDULE 14A

Proxy Statement Pursuant to Section 14(a) of the Securities  
Exchange Act of 1934 (Amendment No. )

Filed by the Registrant   
Filed by a Party other than the Registrant

Check the appropriate box:

- Preliminary Proxy Statement
- Confidential, for Use of the Commission Only (as permitted by Rule 14a-6(e)(2))**
- Definitive Proxy Statement
- Definitive Additional Materials
- Soliciting Material Pursuant to §240.14a-12

**Lexicon Genetics Incorporated**

(Name of Registrant as Specified In Its Charter)

(Name of Person(s) Filing Proxy Statement, if other than the Registrant)

Payment of Filing Fee (Check the appropriate box):

- No fee required.
- Fee computed on table below per Exchange Act Rules 14a-6(i)(1) and 0-11.

1) Title of each class of securities to which transaction applies:

2) Aggregate number of securities to which transaction applies:

3) Per unit price or other underlying value of transaction computed pursuant to Exchange Act Rule 0-11 (set forth the amount on which the filing fee is calculated and state how it was determined):

4) Proposed maximum aggregate value of transaction:

5) Total fee paid:

Fee paid previously with preliminary materials.

Check box if any part of the fee is offset as provided by Exchange Act Rule 0-11(a)(2) and identify the filing for which the offsetting fee was paid previously. Identify the previous filing by registration statement number, or the Form or Schedule and the date of its filing.

1) Amount Previously Paid:

2) Form, Schedule or Registration Statement No.:

3) Filing Party:

4) Date Filed:



March 23, 2007

TO OUR STOCKHOLDERS:

I am pleased to invite you to attend the 2007 annual meeting of stockholders of Lexicon Genetics Incorporated to be held on Wednesday, April 25, 2007 at 1:30 p.m., local time, at The Marriott Woodlands Waterway Hotel and Convention Center, 1601 Lake Robbins Drive, The Woodlands, Texas. We have enclosed with this letter:

- an official notice of the annual meeting;
- a proxy statement that describes the matters to be considered and acted upon at the annual meeting; and
- a form of proxy that we are asking you to complete and return to us, indicating your vote with respect to the matters described in the proxy statement.

Your vote is important, regardless of the number of shares that you hold. Whether or not you plan to attend the annual meeting, I hope you will vote as soon as possible by signing and returning the enclosed form of proxy in the postage-paid envelope we have provided for that purpose.

Thank you for your ongoing support of and continued interest in Lexicon Genetics. We look forward to seeing you at the annual meeting.

Sincerely,

/s/ Arthur T. Sands

Arthur T. Sands, M.D., Ph.D.  
*President and Chief Executive Officer*

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**LEXICON GENETICS INCORPORATED**  
**8800 Technology Forest Place**  
**The Woodlands, Texas 77381**  
**(281) 863-3000**

**NOTICE OF ANNUAL MEETING OF STOCKHOLDERS**  
**TO BE HELD APRIL 25, 2007**

TO OUR STOCKHOLDERS:

The annual meeting of stockholders of Lexicon Genetics Incorporated will be held on Wednesday, April 25, 2007 at 1:30 p.m., local time, at The Marriott Woodlands Waterway Hotel and Convention Center, 1601 Lake Robbins Drive, The Woodlands, Texas, to:

- elect three Class I directors;
- ratify and approve an amendment to our restated certificate of incorporation changing the name of our company to “Lexicon Pharmaceuticals, Inc.”;
- ratify and approve the appointment of Ernst & Young LLP as our independent auditors for the fiscal year ending December 31, 2007; and
- act on any other business that properly comes before the annual meeting.

You are entitled to vote at the annual meeting only if you are the record owner of shares of our common stock at the close of business on March 6, 2007.

It is important that your shares be represented at the annual meeting whether or not you plan to attend. **Please mark, sign and date the enclosed proxy and return it in the accompanying postpaid envelope as promptly as possible.** If you are present at the annual meeting, and wish to do so, you may revoke the proxy and vote in person.

By order of the board of directors,

/s/ Jeffrey L. Wade

Jeffrey L. Wade  
*Secretary*

The Woodlands, Texas  
March 23, 2007

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**LEXICON GENETICS INCORPORATED**  
**8800 Technology Forest Place**  
**The Woodlands, Texas 77381**  
**(281) 863-3000**

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**PROXY STATEMENT**  
**FOR**  
**ANNUAL MEETING OF STOCKHOLDERS**

**To Be Held April 25, 2007**

**GENERAL INFORMATION**

**Purpose of this Proxy Statement**

We have prepared this proxy statement to solicit proxies on behalf of our board of directors for use at our 2007 annual meeting of stockholders and any adjournment or postponement of such meeting. We are mailing this proxy statement and the accompanying notice of annual meeting of stockholders and form of proxy to our stockholders on or about March 23, 2007.

**Time and Place of Annual Meeting**

The annual meeting will be held on Wednesday, April 25, 2007 at 1:30 p.m., local time, at The Marriott Woodlands Waterway Hotel and Convention Center, 1601 Lake Robbins Drive, The Woodlands, Texas.

**Matters to Be Considered at the Annual Meeting**

At the annual meeting, our stockholders will be asked to consider and act upon the following matters:

- the election of three Class I directors;
- a proposal to ratify and approve an amendment to our restated certificate of incorporation changing the name of our company to "Lexicon Pharmaceuticals, Inc."; and
- a proposal to ratify and approve the appointment of Ernst & Young LLP as our independent auditors for the fiscal year ending December 31, 2007.

Our board of directors does not intend to bring any other matters before the annual meeting and has not been informed that any other matters are to be presented by others. Our bylaws contain several requirements that must be satisfied in order for any of our stockholders to bring a proposal before one of our annual meetings, including a requirement of delivering proper advance notice to us. Stockholders are advised to review our bylaws if they intend to present a proposal at any of our annual meetings.

**Record Date for Determining Entitlement to Vote**

You are entitled to vote at the annual meeting if you were the record owner of shares of our common stock as of the close of business on March 6, 2007, the record date for the annual meeting established by our board of directors.

**How to Vote Your Shares**

You may vote in person at the annual meeting or by proxy. To ensure that your shares are represented at the annual meeting, we recommend you vote by proxy even if you plan to attend the annual meeting in person. Even if you vote by proxy, if you wish, you can revoke your proxy and vote in person at the annual meeting. If you want to vote at the annual meeting but your shares are held by an intermediary, such as a broker or bank, you will need to obtain from the intermediary either proof of your ownership of such shares as of March 6, 2007 or a proxy from such intermediary authorizing you to vote your shares at the meeting.

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You may receive more than one proxy depending on how you hold your shares. If you hold your shares through someone else, such as a broker or a bank, you may get materials from them asking you how you want your shares to be voted at the annual meeting.

### **Quorum**

We must have a quorum to conduct any business at the annual meeting. This means that at least a majority of our outstanding shares eligible to vote at the annual meeting must be represented at the annual meeting, either in person or by proxy. Abstentions are counted for purposes of determining whether a quorum is present. In addition, shares of our common stock held by intermediaries that are voted for at least one matter at the annual meeting will be counted as being present for purposes of determining a quorum for all matters, even if the beneficial owner's discretion has been withheld for voting on some or all other matters (commonly referred to as a "broker non-vote").

### **Outstanding Shares**

On the record date, we had 77,985,736 shares of our common stock outstanding. If you were the record owner of shares of our common stock on the record date, you will be entitled to one vote for each share of stock that you own on each matter that is called to vote at the annual meeting.

### **Vote Needed to Approve Proposals**

Our Class I directors will be elected by a plurality vote. As a result, if a quorum is present at the annual meeting, the three persons receiving the greatest number of votes will be elected to serve as our Class I directors. Withholding authority to vote for a director nominee will not affect the outcome of the election of directors.

The ratification and approval of the change in our company name will require the affirmative vote of a majority of the shares of our common stock outstanding on the record date. The ratification and approval of the appointment of Ernst & Young LLP as our independent auditors for the year ending December 31, 2007 will require the affirmative vote of a majority of the votes cast with respect to such matter. Any other business that may properly come before the annual meeting for a vote will require the affirmative vote of a majority of the votes cast with respect to such matter unless a greater vote is required by law or our charter or bylaws. On any such matter, an abstention from voting will have the same effect as a vote against the proposal. A broker non-vote will have the same effect as a vote against the proposal to change our company name, but will not count as a vote for or against the other proposals and will not be considered in calculating the number of votes necessary for their approval.

### **How Your Proxy Will Be Voted**

Giving us your proxy means that you are authorizing us to vote your shares at the annual meeting in the manner you direct. You may vote for our nominees for election as Class I directors or withhold your vote for any one or more of those nominees. You may vote for or against the change in our company name or the appointment of Ernst & Young LLP as our independent auditors for the year ending December 31, 2007 or abstain from voting on those proposals.

If you sign and return the enclosed proxy card and do not withhold authority to vote for the election of our nominees for election as Class I directors, all of your shares will be voted for the election of those nominees. If you withhold authority to vote for one or more of our nominees for election as Class I directors, none of your shares will be voted for those nominees.

If any of our nominees for election as Class I directors become unavailable for any reason before the election, we may reduce the number of directors serving on our board of directors, or our board of directors may designate substitute nominees, as necessary. We have no reason to believe that any of our nominees for election as Class I directors will be unavailable. If our board of directors designates any substitute nominees, the persons named in the enclosed proxy card will vote your shares for such substitute(s) if they are instructed to do so by our board of directors or, in the absence of any such instructions, in accordance with their own best judgment.

If you sign and return the enclosed proxy but do not specify how you want your shares voted, your shares will be voted in favor of our nominees for election as Class I directors and in favor of the change in our company name and the appointment of Ernst & Young LLP as our independent auditors for the year ending December 31, 2007.

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If you sign and return the enclosed proxy and any additional business properly comes before the annual meeting, the persons named in the enclosed proxy will vote your shares on those matters as instructed by our board of directors or, in the absence of any such instructions, in accordance with their own best judgment. As of the date of this proxy statement, we are not aware of any other matter to be raised at the annual meeting.

### **How to Revoke Your Proxy**

You may revoke your proxy at any time before your shares are voted by providing our corporate secretary with either a new proxy with a later date or a written notice of your desire to revoke your proxy at the following address:

Lexicon Genetics Incorporated  
8800 Technology Forest Place  
The Woodlands, Texas 77381  
Attention: Corporate Secretary

You may also revoke your proxy at any time prior to your shares having been voted by attending the annual meeting in person and notifying the inspector of election of your desire to revoke your proxy. Your proxy will not automatically be revoked merely because you attend the annual meeting.

### **Inspector of Election**

Mellon Investor Services L.L.C., our transfer agent and registrar, will count votes and provide a representative who will serve as an inspector of election for the annual meeting.

### **List of Stockholders Entitled to Vote**

A list of our stockholders entitled to vote at the annual meeting will be available for inspection at the annual meeting. The stockholder list will also be available for inspection for ten days prior to the annual meeting at our corporate offices located at 8800 Technology Forest Place, The Woodlands, Texas. Any inspection of this list at our offices will need to be conducted during ordinary business hours. If you wish to conduct an inspection of the stockholder list, we request that you please contact our corporate secretary before coming to our offices.

### **Solicitation of Proxies and Expenses**

We are asking for your proxy on behalf of our board of directors. We will bear the entire cost of preparing, printing and soliciting proxies. We will send proxy solicitation materials to all of our stockholders of record as of the record date and to all intermediaries, such as brokers and banks, that held any of our shares on that date on behalf of others. These intermediaries will then forward solicitation materials to the beneficial owners of our shares, and we will reimburse them for their reasonable out-of-pocket expenses for forwarding such materials. Our directors, officers and employees may solicit proxies by mail, in person or by telephone or other electronic communication. Our directors, officers and employees will not receive additional compensation for their solicitation efforts, but they will be reimbursed for any out-of-pocket expenses they incur.

### **Householding of Annual Disclosure Documents**

The Securities and Exchange Commission has approved a rule allowing us to send a single set of our annual report and proxy statement to any household at which two or more stockholders reside if we believe the stockholders are members of the same family. This rule benefits both you and us by reducing the volume of duplicate information received at your household and helping to reduce our expenses. The rule applies to our annual reports, proxy statements and information statements. Each stockholder will continue to receive a separate proxy card or voting instruction card.

If your household received a single set of disclosure documents for this year, but you would prefer to receive your own copy, please contact our transfer agent, Mellon Investor Services L.L.C., by calling their toll-free number, (800) 635-9270. If you would like to receive your own set of our annual disclosure documents in future years, follow the instructions described below. Similarly, if you share an address with another stockholder and together both of you would like to receive only a single set of our annual disclosure documents, follow these instructions:



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- If your shares are registered in your own name, please contact our transfer agent, Mellon Investor Services, and inform them of your request by calling them at (800) 635-9270 or writing them at 480 Washington Boulevard., Jersey City, New Jersey 07310.
- If a broker or other nominee holds your shares, please contact ADP and inform them of your request by calling them at (888) 603-5847 or writing them at Householding Department, 51 Mercedes Way, Edgewood, New York 11717. Be sure to include your name, the name of your brokerage firm and your account number.

### **PROPOSAL NUMBER 1: ELECTION OF DIRECTORS**

Our board of directors, which currently has eight members, is divided or “classified” into three classes. Directors in each class are elected to hold office for a term ending on the date of the third annual meeting following the annual meeting at which they were elected. The current term of our Class I directors will expire at this annual meeting. The current terms of our Class II and Class III directors will expire at our 2008 and 2009 annual meetings of stockholders, respectively.

The board of directors has nominated and urges you to vote for the election of the individuals identified below, who have been nominated to serve as Class I directors until our 2010 annual meeting of stockholders or until their successors are duly elected and qualified. Each of these individuals is a member of our present board of directors. Your signed proxy will be voted for the nominees named below unless you specifically indicate on the proxy that you are withholding your vote.

#### **Nominees for Class I Directors**

The following individuals are nominated for election as Class I directors:

<u>Name</u>	<u>Age</u>	<u>Position with the Company</u>	<u>Year First Became a Director</u>
Robert J. Lefkowitz, M.D.	63	Director (Class I)	2001
Alan S. Nies, M.D.	69	Director (Class I)	2003
Clayton S. Rose	48	Director (Class I)	2004

*Robert J. Lefkowitz, M.D.* has been a director since February 2001 and a consultant to our company since March 2003. Dr. Lefkowitz is the James B. Duke Professor of Medicine, professor of biochemistry and a Howard Hughes Medical Institute investigator at Duke University Medical Center, where he has served on the faculty since 1973. He is a member of the National Academy of Sciences. Dr. Lefkowitz received his B.A. from Columbia University and his M.D. from Columbia University College of Physicians and Surgeons.

*Alan S. Nies, M.D.* has been a director since November 2003 and chairman of our medical advisory board since March 2003. From 1992 through September 2002, Dr. Nies served in a series of senior management positions at Merck & Co. Inc., most recently as senior vice president, clinical sciences from 1999 to 2002. Prior to joining Merck, Dr. Nies spent fifteen years as professor of medicine and pharmacology and head of the Division of Clinical Pharmacology at the University of Colorado Health Sciences Center. Dr. Nies holds a B.S. from Stanford University and an M.D. from Harvard Medical School.

*Clayton S. Rose* has been a director since July 2004. Mr. Rose has been an adjunct professor at Columbia University’s Graduate School of Business since 2002, and has also taught at New York University’s Stern School of Business. From 1981 through 2000, Mr. Rose worked at JP Morgan & Co, Inc. He held a series of senior management positions at JP Morgan, including heading each of the firm’s Global Investment Banking and Global Equities divisions and serving as a member of the firm’s executive committee. He also served as vice chairman and chief operating officer of the investment bank of JP Morgan Chase & Co. following the merger of the two firms. Mr. Rose serves as a director of Public/Private Ventures and The Reinvestment Fund, is a trustee of the National Opinion Research Center, and is a member of the Council for the Graduate School of Business at the University of Chicago. He received his A.B and M.B.A. from the University of Chicago and his M.A. from the University of Pennsylvania.

**The Board of Directors recommends that stockholders vote “FOR” the foregoing nominees for election as Class I directors.**

### Current and Continuing Directors

The current directors of the Company are identified below:

<u>Name</u>	<u>Age</u>	<u>Position with the Company</u>
Arthur T. Sands, M.D., Ph.D.	45	President and Chief Executive Officer and Director (Class III)
Samuel L. Barker, Ph.D. (1)	64	Chairman of the Board of Directors (Class II)
Robert J. Lefkowitz, M.D. (3)	63	Director (Class I)
Barry Mills, J.D., Ph.D. (2) (3)	56	Director (Class II)
Alan S. Nies, M.D.	69	Director (Class I)
Frank P. Palantoni (1) (2)	49	Director (Class III)
Clayton S. Rose (1) (2)	48	Director (Class I)
Kathleen M. Wiltsey	51	Director (Class II)

(1) Member of the Audit Committee

(2) Member of the Compensation Committee

(3) Member of the Corporate Governance Committee

Information regarding the business experience of Dr. Lefkowitz, Dr. Nies and Mr. Rose is set forth above under the heading “—Nominees for Class I Directors.”

*Arthur T. Sands, M.D., Ph.D.* co-founded our company and has been our president and chief executive officer and a director since September 1995. At Lexicon, Dr. Sands pioneered the development of large-scale gene knockout technology for use in drug discovery. Before founding Lexicon, Dr. Sands served as an American Cancer Society postdoctoral fellow in the Department of Human and Molecular Genetics at Baylor College of Medicine. Dr. Sands is a member of the board of directors of the Texas Institute for Genomic Medicine. He received his B.A. in economics and political science from Yale University and his M.D. and Ph.D. from Baylor College of Medicine.

*Samuel L. Barker, Ph.D.* has been a director since March 2000 and became chairman of our board of directors in March 2005. In March 2001, Dr. Barker co-founded Clearview Projects, Inc., a provider of partnering and transaction services to biopharmaceutical companies, and served as its president and chief executive officer from July 2003 until November 2004. Dr. Barker served in a series of leadership positions at Bristol-Myers Squibb Company until his retirement in 1999. His positions at Bristol-Myers Squibb included service as executive vice president, Worldwide Franchise Management and Strategy during 1998; president, United States Pharmaceuticals from 1992 to 1997; and president, Bristol-Myers Squibb Intercontinental Commercial Operations from 1990 to 1992. Prior to 1990, Dr. Barker held executive positions in research and development, manufacturing, finance, business development and sales and marketing at Squibb Pharmaceuticals. Dr. Barker currently serves as a director of AtheroGenics, Inc. and Cadence Pharmaceuticals, Inc. Dr. Barker received his B.S. from Henderson State College, his M.S. from the University of Arkansas and his Ph.D. from Purdue University.

*Barry Mills, J.D., Ph.D.* has been a director since June 2006. Dr. Mills has been the president of Bowdoin College since 2001 and previously served as deputy presiding partner of Debevoise & Plimpton LLP, where he spent more than twenty years as an attorney focusing on corporate law, real estate and corporate finance. He currently serves as a director of Maine Bank & Trust Co., a Maine bank subsidiary of Chittenden Bank, and Galileo Fund Management Limited, as well as on several philanthropic boards. Dr. Mills received his A.B. from Bowdoin College, his Ph.D. from Syracuse University and his J.D. from the Columbia University School of Law.

*Frank P. Palantoni* has been a director since November 2004. Mr. Palantoni served as chief executive officer of Prestige Brands Holding, Inc. from April to June 2006 and as a director from January to June 2006. From 1998 to 2004, Mr. Palantoni held a variety of senior management positions with Novartis AG, most recently as president and chief executive officer, worldwide of its Gerber Products Company, Novartis Infant and Baby Division. Mr. Palantoni also served as president and chief executive officer for North American operations of Novartis Consumer Health Division

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from 2000 to 2001. Prior to joining Novartis, he held a series of senior management positions with The Danone Group. He holds a B.S. from Tufts University and an M.B.A. from Columbia University.

*Kathleen M. Wiltsey* has been a director since February 2007. From 1984 through 1998, Ms. Wiltsey served in a series of senior marketing and business development positions at Amgen Inc., including as co-product development team leader and marketing director for EPOGEN® and as vice president with responsibility for Amgen's product licensing function. From May to October 2006, Ms. Wiltsey served the X Prize Foundation as executive director for the development and launch of the Archon X PRIZE for Genomics, a global technology competition to dramatically reduce the cost of sequencing human genomes and accelerate personalized medicine. Ms. Wiltsey has served in a variety of business and corporate development advisory roles for numerous biotechnology companies and is currently vice president of the board of The Associates of the California Institute of Technology. She holds a B.S. from the Colorado School of Mines and an M.B.A. from Harvard University.

### **PROPOSAL NUMBER 2:**

#### **RATIFICATION AND APPROVAL OF CHANGE OF OUR COMPANY NAME TO "LEXICON PHARMACEUTICALS, INC."**

Our restated certificate of incorporation currently specifies the name of our company as "Lexicon Genetics Incorporated," which reflects our genetics-based approach to research and drug discovery. We believe that "Lexicon Pharmaceuticals, Inc." more accurately reflects our evolution from a genetics-based research company to an integrated biopharmaceutical company focused on the discovery and development of breakthrough treatments for human disease.

We are asking that stockholders ratify and approve an amendment to our restated certificate of incorporation changing the name of our company from "Lexicon Genetics Incorporated" to "Lexicon Pharmaceuticals, Inc." The complete text of the certificate of amendment is set forth in Appendix A to this proxy statement.

**The Board of Directors recommends that stockholders vote "FOR" ratification and approval of the amendment to our restated certificate of incorporation changing our company name to "Lexicon Pharmaceuticals, Inc."**

### **PROPOSAL NUMBER 3:**

#### **RATIFICATION AND APPROVAL OF INDEPENDENT AUDITORS**

The board of directors has appointed the firm of Ernst & Young LLP as our independent auditors to make an examination of our accounts for the fiscal year ending December 31, 2007, subject to ratification by our stockholders. Representatives of Ernst & Young LLP, are expected to be present at the annual meeting, will have an opportunity to make a statement if they desire to do so and are expected to be available to respond to appropriate questions.

**The Board of Directors recommends that stockholders vote "FOR" ratification and approval of the appointment of Ernst & Young LLP as our independent auditors for the fiscal year ending December 31, 2007.**

#### **Compensation of Independent Auditors**

The following table presents the estimated aggregate fees billed and to be billed by Ernst & Young LLP for services performed during our last two fiscal years.

	<b>Years Ended December 31,</b>	
	<b>2006</b>	<b>2005</b>
Audit fees(1)	\$ 317,500	\$ 260,500
Audit-related fees(2)	20,500	19,000
Tax fees(3)	—	30,900
All other fees(4)	—	—
	<u>\$ 338,000</u>	<u>\$ 310,400</u>

(1) "Audit fees" include professional services rendered for (i) the audit of our management's assessment of effective internal control over financial reporting, as required by the Sarbanes-Oxley Act of 2002, for the fiscal years ended December 31, 2005 and 2006, (ii) the audit of our annual financial statements for the fiscal years ended December 31, 2005 and 2006, (iii) the reviews of the financial

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statements included in our quarterly reports on Form 10-Q for such years and (iv) the issuance of consents and other matters relating to registration statements filed by us.

- (2) "Audit-related fees" include assurance or related services reasonably related to our audit for the fiscal years ended December 31, 2005 and 2006. These fees related to the audit of the financial statements of our 401(k) plan and consultation concerning financial accounting and reporting standards.
- (3) "Tax fees" include professional services related to the preparation of our tax returns, tax planning and other tax advice for the fiscal years ended December 31, 2005 and 2006.
- (4) "All other fees" include products and services other than those disclosed as audit fees, audit-related fees and tax fees.

The audit committee approved all the fees described above. As part of its duties, the audit committee has determined that the provision by Ernst & Young LLP of the non-audit services described above is compatible with maintaining the auditors' independence.

### **Audit Committee Pre-Approval Policies and Procedures**

The audit committee has adopted policies and procedures requiring the pre-approval of all audit and non-audit services rendered by our independent auditors, either as part of the audit committee's approval of the scope of the engagement of the independent auditors or on a case-by-case basis before the independent auditors are engaged to provide each service. The audit committee's pre-approval authority may be delegated to one or more of its members, but any pre-approval decision must be reported to the full audit committee at its next regularly scheduled meeting.

### **Audit Committee Report**

The role of the audit committee is to assist the board of directors in its oversight of our financial reporting process. The audit committee reviews our internal accounting procedures and consults with, and reviews the services provided by, our independent auditors.

The management of our company is responsible for the preparation, presentation and integrity of our financial statements, our accounting and financial reporting principles and internal controls and procedures designed to assure compliance with the accounting standards and applicable laws and regulations. Our independent auditors are responsible for auditing our financial statements and expressing an opinion as to their conformity with generally accepted accounting principles.

In the performance of its oversight function, the audit committee has reviewed and discussed the audited financial statements with management. The committee has also discussed with our independent auditors the matters required to be discussed by Statement on Auditing Standards No. 61, *Communication with Audit Committees*, as currently in effect. Finally, the committee has received the written disclosures and the letter from our independent auditors required by Independence Standards Board Standard No. 1, *Independence Discussions with Audit Committees*, as currently in effect, and has discussed with our independent auditors their independence.

Based upon the review and discussions described in this report, and subject to the limitations on the role and responsibilities of the audit committee referred to in the audit committee charter, the committee recommended to the board of directors that the audited financial statements be included in our annual report on Form 10-K for the year ended December 31, 2006.

### **Audit Committee**

Clayton S. Rose (Chairman)  
Samuel L. Barker, Ph.D.  
Frank P. Palantoni

The foregoing audit committee report shall not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, or otherwise subject to the liabilities of that section, nor shall it be deemed incorporated by reference by any general statement incorporating by reference this proxy statement into any filing under the Securities Act of 1933 or under the Securities Exchange Act of 1934, except to the extent that we specifically incorporate this compensation committee report by reference, and shall not otherwise be deemed filed under such acts.

**STOCK OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT**

The following table presents information regarding the beneficial ownership of our common stock as of March 6, 2007 by:

- each of the individuals listed in “Executive Compensation – Summary Compensation Table”;
- each of our directors;
- each person, or group of affiliated persons, who is known by us to own beneficially five percent or more of our common stock; and
- all current directors and executive officers as a group.

Beneficial ownership is determined in accordance with the rules of the Securities and Exchange Commission computing the number of shares beneficially owned by a person and the percentage ownership of that person. Shares of common stock under options held by that person that are currently exercisable or exercisable within 60 days of March 6, 2007 are considered outstanding. These shares, however, are not considered outstanding when computing the percentage ownership of each other person.

Except as indicated in the footnotes to this table and pursuant to state community property laws, each stockholder named in the table has sole voting and investment power for the shares shown as beneficially owned by them. Percentage of ownership is based on 77,985,736 shares of common stock outstanding on March 6, 2007. Unless otherwise indicated in the footnotes, the address of each of the individuals named below is: c/o Lexicon Genetics Incorporated, 8800 Technology Forest Place, The Woodlands, Texas 77381.

	<b>Number of Shares Beneficially Owned</b>	<b>Beneficial Ownership Shares Issuable Pursuant to Options Exercisable within 60 Days of March 6, 2007</b>	<b>Percentage Ownership</b>
Royce & Associates, LLC (1)	9,285,600	—	11.9%
Robert C. McNair (2)	5,949,400	—	7.6%
Barclays Global Investors, NA and Barclays Global Fund Advisors (3)	5,506,677	—	7.1%
Baylor College of Medicine (4)	3,903,850	—	5.0%
Arthur T. Sands, M.D., Ph.D. (5)	1,450,162	2,478,797	4.9%
Julia P. Gregory (6)	55,047	786,272	1.1%
Alan J. Main, Ph.D.	—	504,994	*
Jeffrey L. Wade, J.D.	3,000	794,017	1.0%
Brian P. Zambrowicz, Ph.D.	101,600	1,024,479	1.4%
Samuel L. Barker, Ph.D.	7,000	94,000	*
Robert J. Lefkowitz, M.D.	—	68,000	*
Barry Mills, J.D., Ph.D.	25,000	5,000	*
Alan S. Nies, M.D.	—	49,000	*
Frank P. Palantoni	—	25,000	*
Clayton S. Rose	10,000	36,500	*
Kathleen M. Wiltsey	—	1,000	*
All directors and executive officers as a group (5)(6) (15 persons)	1,662,009	6,764,543	9.9%

\* Represents beneficial ownership of less than 1 percent.

- (1) Based upon a Schedule 13G filed with the SEC on January 23, 2007, reflecting the beneficial ownership of our common stock by Royce & Associates, LLC. The address for Royce & Associates, LLC is 1414 Avenue of the Americas, New York, New York 10019.
- (2) Based upon a Schedule 13D filed with the SEC on July 18, 2003, reflecting the beneficial ownership of our common stock by RCM Financial Services, L.P. (4,250,000 shares), Cogene Biotech Ventures, L.P. (1,679,400 shares) and Palmetto Partners, Ltd. (20,000 shares). Mr. McNair has sole voting and investment power with respect to all of such shares. The address for Mr. McNair is 4400 Post Oak Parkway, Suite 1400, Houston, Texas 77027.
- (3) Based upon a Schedule 13G filed with the SEC on January 23, 2007, reflecting the beneficial ownership of our common stock by Barclays Global Investors, NA (3,651,367 shares) and Barclays Global Fund Advisors (1,855,310 shares). Barclays Global Investors, NA has sole voting power with respect to 3,349,935 shares and sole investment power with respect to 3,651,367 shares. Barclays Global Fund Advisors has sole voting and

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investment power with respect to 1,855,310 shares. The address for Barclays Global Investors, NA and Barclays Global Fund Advisors is 45 Fremont Street, San Francisco, California 94105.

- (4) Based upon a Schedule 13G/A filed with the SEC on January 30, 2007, reflecting the beneficial ownership of our common stock by Baylor College of Medicine and BCM Technologies, Inc., a wholly owned subsidiary of Baylor College of Medicine. The number of shares beneficially owned includes 28,940 shares owned by BCM Technologies, Inc. The address of Baylor College of Medicine is One Baylor Plaza, T-100, Houston, Texas 77030-3411.
- (5) The number of shares beneficially owned by Dr. Sands includes 60,000 shares held in the name of minor children and 817,500 shares owned by Sands Associates LP. The general partners of Sands Associates LP are ATS Associates, L.L.C., owned by Dr. Sands, and MES Associates, L.L.C., owned by Dr. Sands' wife.
- (6) The number of shares beneficially owned by Ms. Gregory includes 4,847 shares held in the name of dependent children and trusts for their benefit of which she serves as a trustee.

### **Section 16(a) Beneficial Ownership Reporting Compliance**

Section 16(a) of the Exchange Act requires our directors and executive officers, and persons who own more than 10% of our common stock, to file initial reports of ownership and reports of changes in ownership of our common stock with the Securities and Exchange Commission. Directors, executive officers and greater than 10% stockholders are required by Securities and Exchange Commission regulations to furnish us with copies of all such forms that they file.

To our knowledge, based solely on our review of the copies of such reports received by us and on written representations by certain reporting persons that no reports on Form 5 were required, we believe that during the fiscal year ended December 31, 2006, with the exception of one late filing reporting twelve purchases by Dr. Mills of an aggregate of 25,000 shares of our common stock, all Section 16(a) filing requirements applicable to our executive officers, directors and 10% stockholders were complied with in a timely manner.

## **CORPORATE GOVERNANCE**

### **Independence of the Board of Directors**

After reviewing all relevant transactions and relationships involving each member of the board of directors (and his or her family), the board of directors has affirmatively determined that Samuel L. Barker, Ph.D., Robert J. Lefkowitz, M.D., Barry Mills, J.D., Ph.D., Frank P. Palantoni, Clayton S. Rose and Kathleen M. Wiltsey, which members constitute a majority of the board of directors, are "independent" in accordance with the applicable listing standards of The Nasdaq Stock Market, Inc. After such review, the board of directors also determined that Patricia M. Cloherty, who resigned from our board of directors effective April 30, 2006, was "independent" in accordance with the applicable listing standards of The Nasdaq Stock Market, Inc. during her service as a director.

In making such determinations, the board of directors considered our consulting agreement with Robert J. Lefkowitz, M.D., under which Dr. Lefkowitz serves as a consultant to us on matters relating to our drug discovery and development efforts.

### **Board Committees**

*Audit Committee.* Our audit committee has been established in accordance with Section 3(a)(58)(A) of the Securities Exchange Act of 1934 and monitors the integrity of our financial statements, reviews our internal accounting procedures and oversees the qualifications, independence and performance of our independent auditors. The audit committee operates pursuant to a charter that was last amended and restated by the board of directors on October 26, 2005, a copy of which appears on our website at [www.lexicon-genetics.com](http://www.lexicon-genetics.com) under the caption "Investor Relations - Corporate Governance."

The current members of our audit committee are Clayton S. Rose (chair), Samuel L. Barker, Ph.D. and Frank P. Palantoni. The board of directors, in its business judgment, has determined that Mr. Rose, Dr. Barker and Mr. Palantoni are "independent" in accordance with the applicable listing standards of The Nasdaq Stock Market, Inc. The board of directors, in its business judgment, has also determined that Mr. Rose is an "audit committee financial expert" as defined in Item 407(d)(5) of Regulation S-K.

*Compensation Committee.* Our compensation committee evaluates the performance of management, determines the compensation of our executive officers and reviews general policy relating to compensation and benefits of our

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employees. The compensation committee also administers the issuance of stock options and other awards under our 2000 Equity Incentive Plan. The compensation committee operates pursuant to a charter that was approved by the board of directors on February 11, 2004, a copy of which appears on our website at [www.lexicon-genetics.com](http://www.lexicon-genetics.com) under the caption “Investor Relations — Corporate Governance.”

The compensation committee may delegate any of its authority to subcommittees consisting of one or more compensation committee members, with all subcommittee decisions being presented to the full compensation committee at its next scheduled meeting. The compensation committee did not delegate any such authority with respect to 2006 compensation matters. The compensation committee may retain compensation consultants or other advisors to assist in its evaluation of executive compensation. Although the compensation committee has engaged consultants to advise the committee on matters relating to executive compensation in prior years, the compensation committee did not engage any consultants with respect to 2006 compensation matters.

The compensation committee meets in connection with most regularly scheduled meetings of the board of directors, and on at least two occasions after the commencement of each year specifically devoted to making compensation decisions regarding the year just ended. In preparation for such decisions, our president and chief executive officer reviews the performance of executive officers other than himself and, in consultation with the compensation committee and at its direction, makes certain recommendations to the compensation committee relating to their compensation. The compensation committee reviews such recommendations and makes changes to such recommendations as it deems appropriate. All executive compensation determinations are made by the compensation committee in the absence of management.

During the meetings at which 2006 compensation determinations were made, the members of the compensation committee were Clayton S. Rose (chair), Samuel L. Barker, Ph.D., Barry Mills, J.D., Ph.D. and Frank P. Palantoni. The current members of the compensation committee are Mr. Palantoni (chair), Mr. Rose and Dr. Mills. The board of directors, in its business judgment, has determined that Mr. Palantoni, Mr. Rose, Dr. Mills and Dr. Barker are “independent” in accordance with the applicable listing standards of The Nasdaq Stock Market, Inc.

*Corporate Governance Committee.* Our corporate governance committee identifies individuals qualified to become members of our board of directors, selects candidates or nominees for director positions to be filled by the board of directors or our stockholders and develops appropriate corporate governance principles. The corporate governance committee operates pursuant to a charter that was approved by the board of directors on February 11, 2004, a copy of which appears on our website at [www.lexicon-genetics.com](http://www.lexicon-genetics.com) under the caption “Investor Relations — Corporate Governance.”

The corporate governance committee has not established any specific minimum qualifications for membership on our board of directors. Rather, the committee will generally consider all relevant factors, which may include independence, experience, diversity, leadership qualities and strength of character. The corporate governance committee uses its available network of contacts when compiling a list of potential director candidates and may also engage outside consultants when appropriate. The committee also considers potential director candidates recommended by stockholders and other parties and all potential director candidates are evaluated based on the above criteria. Because the corporate governance committee makes no distinction in its evaluation of candidates based on whether such candidates are recommended by stockholders or other parties, no formal policy or procedure has been established for the consideration of director candidates recommended by stockholders.

Any stockholder wishing to propose a potential director candidate may submit a recommendation in writing within the time frame specified in our bylaws. All such communications should be sent to 8800 Technology Forest Place, The Woodlands, Texas 77381, Attn: Corporate Governance Committee. Submissions should include the full name of the proposed candidate and a detailed description of the candidate’s qualifications, business experience and other relevant biographical information.

The current members of the corporate governance committee are Barry Mills, J.D., Ph.D. (chair) and Robert J. Lefkowitz, M.D. The board of directors, in its business judgment, has determined that Dr. Mills and Dr. Lefkowitz are “independent” in accordance with the applicable listing standards of The Nasdaq Stock Market, Inc. In making such determinations, the board of directors considered our consulting agreement with Dr. Lefkowitz described under the heading “Corporate Governance— Independence of the Board of Directors.”

## **Board and Committee Meetings and Attendance in 2006**

The board of directors met nine times in 2006 and took certain additional actions by unanimous written consent. The audit committee and compensation committee each met five times in 2006. The corporate governance committee met twice in 2006 and took certain additional actions by unanimous written consent. During 2006, none of our incumbent directors attended fewer than 75 percent of the aggregate number of meetings of the board of directors and committees during the period served.

It is our policy to encourage the members of our board of directors to attend all annual meetings of stockholders. Three members of our board of directors attended our 2006 annual meeting of stockholders.

## **Code of Business Conduct and Ethics**

We have adopted a code of business conduct and ethics that applies to all of our directors, officers and employees, the text of which appears on our website at [www.lexicon-genetics.com](http://www.lexicon-genetics.com) under the caption "Investor Relations — Corporate Governance." We intend to disclose on our website the nature of any amendment to or waiver from our code of business conduct and ethics that applies to our principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions within four business days following the date of such amendment or waiver. In the case of any such waiver, including an implicit waiver, we also intend to disclose the name of the person to whom the waiver was granted and the date of the waiver.

## **Corporate Governance Guidelines**

We have adopted corporate governance guidelines, including, among other things, guidelines with respect to the structure of our board of directors, director selection and qualifications, and non-employee director compensation. The text of our corporate governance guidelines appears on our website at [www.lexicon-genetics.com](http://www.lexicon-genetics.com) under the caption "Investor Relations — Corporate Governance."

## **Related Party Transaction Policies**

We have adopted written policies and procedures for the review, approval and ratification of interested transactions with related parties. Subject to certain exceptions provided in Item 404(a) of Regulation S-K, an "interested transaction" means any transaction, arrangement or relationship in which we are a participant and the amount involved will or may be expected to exceed \$120,000 in any calendar year, and in which any related party has or will have a direct or indirect material interest. A "related party" means (a) any executive officer, director, nominee for election as a director or any person beneficially owning five percent or more of our common stock and (b) any immediate family member of such parties.

All interested transactions are subject to the review and approval of our audit committee and if advance audit committee approval is not feasible, then the interested transaction will be considered for ratification at the audit committee's next regularly scheduled meeting. In determining whether to approve or ratify any interested transaction, the audit committee will consider, among other factors it may deem appropriate, whether the interested transaction is on terms no less favorable than terms generally available to an unaffiliated third party under similar circumstances and the extent of the related party's interest in the transaction. No director participates in any discussion or approval of an interested transaction for which he or she is a related party. On at least an annual basis, the audit committee reviews and assesses any ongoing interested transactions to ensure that the transaction remains appropriate.

## **Stockholder Communications with the Board of Directors**

We believe that our stockholders are currently provided a reasonable means to communicate with our board of directors and individual directors. As a result, our board of directors has not established a formal process for stockholders to send communications to the board of directors or individual directors. However, the corporate governance committee will consider, from time to time, whether adoption of a formal process for such stockholder communications has become necessary or appropriate. Stockholders may send communications to the board of directors or individual directors by mail at 8800 Technology Forest Place, The Woodlands, Texas 77381, Attn: Board of Directors or any individual director.



## **Compensation Committee Interlocks and Insider Participation**

During 2006, Samuel L. Barker, Ph.D., Patricia M. Cloherty, Barry Mills, J.D., Ph.D., Frank P. Palantoni and Clayton S. Rose served as members of the compensation committee of our board of directors. During 2006, none of our executive officers served as a member of the board of directors or compensation committee of another entity, one of whose executive officers served as a member of our board of directors or compensation committee.

## **EXECUTIVE AND DIRECTOR COMPENSATION**

### **Compensation Discussion and Analysis**

We have developed a compensation policy that is designed to attract and retain key executives responsible for our success and motivate management to enhance long-term stockholder value. The annual compensation package for executive and other officers primarily consists of:

- a base salary, which reflects the responsibilities relating to the position and individual performance;
- variable annual cash bonus awards tied to the achievement of specified individual and corporate goals and milestones; and
- long-term stock-based incentive awards which strengthen the mutuality of interests between our executive and other officers and our stockholders.

We generally seek to set targeted total cash compensation, consisting of base salaries and annual cash bonus award targets, and total direct compensation, consisting of targeted total cash compensation and long-term stock-based incentive awards, at or near the median of a peer group of biopharmaceutical companies if such compensation level is justified by company performance, individual performance and prevailing financial conditions. All compensation decisions are made by our compensation committee pursuant to authority delegated by our board of directors. In making compensation determinations and reviewing comparative data, the compensation committee reviews total direct compensation in its totality, assigning dollar values to each of the elements of such compensation, including base salary, annual cash bonus award targets and long-term stock-based incentive awards. The committee generally allocates a greater percentage of total direct compensation to long-term stock-based incentive awards in acknowledgment of the unique challenges present in the biopharmaceutical industry and in order to reinforce the alignment of interests between our executive and other officers and our stockholders.

In determining the level and composition of compensation of each of our executive and other officers, we take into account various qualitative and quantitative indicators of corporate and individual performance. Among the challenges faced by us and other companies in the biopharmaceutical industry is the unique combination of the relatively long time period typically necessary to discover, develop and commercialize drugs and the historically low success rate in doing so. As a result, in evaluating the performance of management, the compensation committee takes into consideration such factors as the number and quality of drug candidates in human clinical trials, the pipeline of potential drug candidates for which the required regulatory filings for the initiation of clinical trials may be filed, the value and scope of strategic collaborations and alliances with leading pharmaceutical companies, and the ability to otherwise finance our operations from external sources. In addition, the compensation committee recognizes performance and achievements that are more difficult to quantify, such as the successful supervision of major corporate projects and demonstrated leadership ability.

The compensation committee supplements this evaluation by reviewing comparative compensation data from a survey of similarly situated companies. In determining peer group compensation, we use available survey data from several sources, relying principally on data from a comprehensive survey of the compensation practices of several hundred companies in the biopharmaceutical industry. We expand on this survey data with reviews of the publicly-disclosed compensation practices of a group of biopharmaceutical companies selected for comparison purposes based on one or more factors, including number of employees, revenues, stage of development, and location of principal operations. In 2006, this group of companies consisted of Curagen Corporation, deCODE genetics, Inc., Exelixis, Inc., Encysive Pharmaceuticals Inc., Human Genome Sciences, Inc., Incyte Corporation, Medarex, Inc., Millennium Pharmaceuticals, Inc., Myriad Genetics, Inc., PDL Biopharma, Inc., Vertex Pharmaceuticals Incorporated and ZymoGenetics, Inc. The peer group of biopharmaceutical companies for which we obtained survey data and the

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additional group of companies listed above do not necessarily coincide with the companies comprising the Nasdaq Biotechnology Index. Although we acknowledge the inherent limitations in comparing our compensation practices with the compensation practices of these companies, we believe that these comparisons are useful and important points of reference in making compensation determinations.

The compensation committee may also retain compensation consultants or other advisors when it deems appropriate to assist in its evaluation of executive compensation. Pursuant to such authority, the compensation committee engaged Aon Consulting, Inc. in 2005 as an independent compensation consultant to advise the committee on matters relating to executive compensation. The compensation committee did not engage any consultants with respect to 2006 compensation matters.

### *Company Performance Criteria*

We generally make executive compensation determinations in February of each year, taking into account company and individual performance over the preceding year, as well as prevailing financial conditions. In February 2007, the compensation committee made determinations regarding 2006 bonus awards and annual stock option grants and 2007 base salaries, taking into account the following factors in its evaluation of corporate performance in 2006: the submission of the required regulatory filings and initiation of clinical trials for our most advanced drug candidate, *LX6171*; the submission of the required regulatory filings for the initiation of clinical trials for another drug candidate, *LX1031*; our progress relative to our objectives in advancing our other drug discovery and development programs; our performance relative to our objectives for our net use of cash in operations and for capital expenditures; and our cash and investments at the end of 2006. We largely achieved our objectives relating to our drug discovery and development programs, fell short of our objectives relating to net use of cash in operations and for capital expenditures, and achieved our objectives relating to cash and investments at the end of the year.

### *Base Salary*

Base salary of executive and other officers is established through negotiation between the company and the officer at the time he or she is hired, and then subsequently adjusted when the officer's base compensation is subject to review or reconsideration. While we have entered into employment agreements with certain of our executive officers, these agreements provide that base salaries after the initial year will be reviewed and determined by the compensation committee. When establishing base salary levels for executive and other officers, the compensation committee, in accordance with its general compensation policy, considers numerous factors, including the responsibilities relating to the position, the qualifications of the executive and the relevant experience the individual brings to the company, strategic goals for which the executive has responsibility, and compensation levels of companies at a comparable stage of development who compete with us for business, scientific and executive talents. When considering increases to base salary levels for officers, which typically occurs each February, we consider individual and company performance in addition to the foregoing factors. No pre-determined weights are given to any one of these factors.

We left 2006 base salaries of each of our executive officers unchanged from the rate established in February 2004. We increased the base salaries of each of our executive officers in February 2007. The base salaries of our executive officers are generally competitive with those paid by our peer group companies, with most falling near the median for such peer group companies. In establishing base salaries for 2006 and 2007, we considered the competitiveness of our cash compensation arrangements for executive officers and our cash position and needs for the year.

### *Incentive Compensation*

#### *Cash Bonus Awards*

In addition to base salary, we may award variable annual cash bonus awards to chosen executive and other officers depending on the extent to which certain predefined corporate and personal performance goals are achieved. These performance goals include those discussed generally above, as well as strategic and operational goals for the company as a whole. We typically consider the award of cash bonuses each February relating to performance for the preceding year. For each of our officers, the compensation committee establishes a bonus target, expressed as a percentage of base salary, which is used to determine the cash bonus amount, assuming that corporate and individual goals are fully achieved. The compensation committee retains broad discretion over the amount and payment of such awards.

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In determining the cash bonus awards paid in February 2007 with respect to 2006 performance, the compensation committee included the relevant factors described above under “— Company Performance Criteria” in its evaluation of corporate performance. After taking into account these factors, the compensation committee determined that our objectives for the year had been largely but not fully achieved, and awarded bonuses for 2006 performance to executive officers other than our president and chief executive officer in amounts reflecting such partial achievement. In determining the bonus payable to Dr. Sands, our president and chief executive officer, the compensation committee also took into account the competitiveness of his overall level of compensation and his contributions to the company, and awarded a bonus for 2006 performance above his bonus target for the year.

### *Stock-Based Awards*

All of our employees, including our executive and other officers, are eligible to receive long-term stock-based incentive awards under our 2000 Equity Incentive Plan as a means of providing such individuals with a continuing proprietary interest in our success. These grants are typically awarded each February and align the interests of our employees and our stockholders by providing significant incentives for our employees to achieve and maintain high levels of performance. Our 2000 Equity Incentive Plan enhances our ability to attract and retain the services of qualified individuals. Factors considered in determining whether and in what amounts such awards are granted to an officer include the executive’s position, his or her performance and responsibilities, the amount of stock options currently held by the officer, the vesting schedules of any such options and the officer’s other compensation. While we do not adhere to any firmly established formulas or schedules for the issuance of awards such as options or restricted stock, we take into account, in making award decisions, the total direct compensation objectives described above. In addition, we will generally tailor the terms of any such grant to achieve its goal as a long-term incentive award by providing for a vesting schedule encompassing several years.

In February 2007, the compensation committee approved annual stock option grants to executive officers and other employees who satisfied eligibility requirements, including time of service. In making such grants, the compensation committee considered corporate and individual performance in 2006, total direct compensation objectives for individual officers, and information regarding stock option grants made by other companies in the biotechnology industry.

### **Summary Compensation Table for 2006**

The following table presents summary information regarding the compensation of each of Arthur T. Sands, M.D., Ph.D., our president and chief executive officer, Julia P. Gregory, our executive vice president, corporate development and chief financial officer, and our three other most highly compensated executive officers for the year ended December 31, 2006. We have entered into employment agreements with each of the named executive officers and the material terms of those employment agreements are described below.

Based on the summary compensation information provided below, “Salary” accounted for approximately 36% and “Bonus” accounted for approximately 14% of the total compensation paid to the named executive officers for 2006.

<b>Name and Position</b>	<b>Salary</b>	<b>Bonus</b>	<b>Option Awards<sup>(1)</sup></b>	<b>All Other Compensation <sup>(2)</sup></b>	<b>Total</b>
Arthur T. Sands, M.D., Ph.D. <i>President, Chief Executive Officer and Director</i>	\$473,000	\$300,000	\$792,267	\$373,466 <sup>(3)</sup>	\$1,938,733
Julia P. Gregory <i>Executive Vice President Corporate Development and Chief Financial Officer</i>	\$329,000	\$ 80,000	\$332,168	\$ 5,974	\$ 747,142
Alan J. Main, Ph.D. <i>Executive Vice President of Pharmaceutical Research</i>	\$312,000	\$ 90,000	\$220,103	\$ 5,949	\$ 628,052
Jeffrey L. Wade, J.D. <i>Executive Vice President and General Counsel</i>	\$292,000	\$ 80,000	\$290,675	\$ 5,920	\$ 668,595
Brian P. Zambrowicz, Ph.D. <i>Executive Vice President and Chief Scientific Officer</i>	\$312,000	\$120,000	\$362,435	\$ 5,949	\$ 800,384

(1) Reflects the dollar amount recognized for financial statement reporting purposes for the year ended December 31, 2006 in accordance with FAS 123(R) (but disregarding forfeiture estimates related to service-based vesting conditions) and, accordingly, includes amounts from options

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granted prior to 2006. See the information appearing under the heading entitled “Stock-Based Compensation” in footnote 2 to our consolidated financial statements included as part of our Annual Report on Form 10-K for the year ended December 31, 2006 for certain assumptions made in the valuation of options granted in the years ended December 31, 2006, 2005 and 2004. See the information appearing under the heading entitled “Stock-Based Compensation” in footnote 12 to our consolidated financial statements included as part of our Annual Report on Form 10-K for the year ended December 31, 2004 for certain assumptions made in the valuation of options granted in the years ended December 31, 2003 and 2002.

- (2) Includes the following amounts in respect of company matching contributions under our 401(k) plan and company-paid premiums for group term life insurance. The company-paid life insurance premiums reflect payments for group term life policies maintained for the benefit of all employees.

	<u>Company 401(k) Matching Contribution</u>	<u>Company-Paid Group Term Life Insurance Premiums</u>
Arthur T. Sands, M.D., Ph.D.	\$5,500	\$681
Julia P. Gregory	\$5,500	\$474
Alan J. Main, Ph.D.	\$5,500	\$449
Jeffrey L. Wade, J.D.	\$5,500	\$420
Brian P. Zambrowicz, Ph.D.	\$5,500	\$449

- (3) Reflects an agreement with Dr. Sands terminating our obligation under his employment agreement to fund a split-dollar life insurance policy for his benefit, pursuant to which we (a) agreed to forego our right under the split-dollar agreement with the trust that owns the policy to the reimbursement of \$147,828 in premiums that we previously paid for such policy prior to 2002 and (b) made a payment to Dr. Sands of \$219,457 enabling him to pay, for his own account, the premiums under the policy for 2004 and 2005 and the taxes associated with the termination of the trust’s reimbursement obligations under the split-dollar agreement. We entered into the employment agreement with Dr. Sands in October 1999 and entered into the split-dollar agreement with the trust that owns the policy in October 2000.

### *Employment Agreements*

In October 1999, we entered into an employment agreement with Arthur T. Sands, M.D., Ph.D., our president and chief executive officer, which was subsequently restated in February 2006. Under the agreement, Dr. Sands receives a base salary, currently \$530,000 a year, subject to adjustment, with an annual discretionary bonus based upon specific objectives to be determined by the compensation committee. The employment agreement is at-will and contains a non-competition agreement. The agreement also provides for certain severance payments upon the termination of Dr. Sands’ employment, as described below under the heading “Executive and Director Compensation—Potential Payments upon Termination or Change in Control.”

In February 2000, we entered into an employment agreement with Julia P. Gregory to serve as our executive vice president and chief financial officer starting in February 2000. In August 2003, Ms. Gregory was named executive vice president, corporate development and chief financial officer. Under the agreement, Ms. Gregory receives a base salary, currently \$335,000 a year, subject to adjustment, with an annual discretionary bonus based upon specific objectives to be determined by the compensation committee. The employment agreement is at-will and contains a non-competition agreement. The agreement also provides for certain severance payments upon the termination of Ms. Gregory’s employment, as described below under the heading “Executive and Director Compensation—Potential Payments upon Termination or Change in Control.”

In July 2001, we entered into an employment agreement with Alan J. Main, Ph.D., then our senior vice president, Lexicon Pharmaceuticals. In February 2007, Dr. Main was named executive vice president of pharmaceutical research. Under the agreement, Dr. Main receives a base salary, currently \$325,000 a year, subject to adjustment, with an annual discretionary bonus based upon specific objectives to be determined by the compensation committee. The employment agreement is at-will and contains a non-competition agreement. The agreement also provides for certain severance payments upon the termination of Dr. Main’s employment, as described below under the heading “Executive and Director Compensation—Potential Payments upon Termination or Change in Control.”

In December 1998, we entered into an employment agreement with Jeffrey L. Wade, J.D. to serve as our senior vice president and chief financial officer starting in January 1999. In February 2000, Mr. Wade was named executive vice president and general counsel. Under the agreement, Mr. Wade receives a base salary, currently \$320,000 a year, subject to adjustment, with an annual discretionary bonus based upon specific objectives to be determined by the compensation committee. The employment agreement is at-will and contains a non-competition agreement. The agreement also provides for certain severance payments upon the termination of Mr. Wade’s employment, as described below under the heading “Executive and Director Compensation—Potential Payments upon Termination or Change in Control.”

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In February 2000, we entered into an employment agreement with Brian P. Zambrowicz, Ph.D., then our senior vice president of genomics. Dr. Zambrowicz was named executive vice president of research in August 2002 and executive vice president and chief scientific officer in February 2007. Under the agreement, Dr. Zambrowicz receives a base salary, currently \$345,000 a year, subject to adjustment, with an annual discretionary bonus based upon specific objectives to be determined by the compensation committee. The employment agreement is at-will and contains a non-competition agreement. The agreement also provides for certain severance payments upon the termination of Dr. Zambrowicz's employment, as described below under the heading "Executive and Director Compensation—Potential Payments upon Termination or Change in Control."

### Grants of Plan-Based Awards in 2006

The following table presents each grant of stock options in 2006 to the individuals named in the summary compensation table.

Name	Grant Date	Number of Securities Underlying Options	Exercise Price of Option Awards	Grant Date Fair Value of Options
Arthur T. Sands, M.D., Ph.D.	2/1/2006	380,000	\$4.00	\$1,154,516
Julia P. Gregory	2/1/2006	100,000	\$4.00	\$ 303,820
Alan J. Main, Ph.D.	2/1/2006	65,000	\$4.00	\$ 197,483
Jeffrey L. Wade, J.D.	2/1/2006	120,000	\$4.00	\$ 364,584
Brian P. Zambrowicz, Ph.D.	2/1/2006	170,000	\$4.00	\$ 516,494

Each of the options in the foregoing table was granted under our 2000 Equity Incentive Plan and expires on the tenth anniversary of the grant date. Each option vests with respect to 25% of the shares underlying the option on the first anniversary of the grant date and 1/48<sup>th</sup> per month for each month of service thereafter. Each option becomes fully vested with respect to all remaining unvested shares upon a change in control of our company. In accordance with the process for determination of fair market value under the plan, the exercise price for each option is equal to the closing price of our common stock, as quoted on the Nasdaq Global Market, on the last trading day prior to the grant date. The exercise price for each option may be paid in cash or in shares of our common stock valued at fair market value on the exercise date or through a cashless exercise procedure involving a same-day sale of the purchased shares.

### Outstanding Equity Awards at December 31, 2006

The following table presents information about unexercised options that were held by each of the individuals listed in the summary compensation table as of December 31, 2006.

	Number of Securities Underlying Unexercised Options		Option Exercise Price	Option Expiration Date
	Exercisable	Unexercisable (1)		
Arthur T. Sands, M.D., Ph.D.	300,000	—	\$ 1.67	5/8/2007
	900,000	—	\$ 2.50	9/29/2008
	555,000	—	\$ 2.50	2/3/2010
	100,000	—	\$14.44	2/2/2011
	170,000	—	\$ 9.38	2/19/2012
	129,405	5,595	\$ 3.90	2/14/2013
	106,272	43,728	\$ 7.59	2/12/2014
	68,760	81,240	\$ 5.76	2/18/2015
	—	380,000	\$ 4.00	2/1/2016
Julia P. Gregory	433,000	—	\$ 2.50	2/8/2010
	60,000	—	\$14.44	2/2/2011
	90,000	—	\$ 9.38	2/19/2012
	69,016	2,984	\$ 3.90	2/14/2013
	53,136	21,864	\$ 7.59	2/12/2014
	34,380	40,620	\$ 5.76	2/18/2015
	—	100,000	\$ 4.00	2/1/2016

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	Number of Securities Underlying Unexercised Options		Option Exercise Price	Option Expiration Date
	Exercisable	Unexercisable (1)		
Alan J. Main, Ph.D.	49,001	—	\$ 1.97	12/14/2009
	300,000	—	\$10.93	7/12/2011
	15,000	—	\$ 9.38	2/19/2012
	51,762	2,238	\$ 3.90	2/14/2013
	35,424	14,576	\$ 7.59	2/12/2014
	22,920	27,080	\$ 5.76	2/18/2015
	—	65,000	\$ 4.00	2/1/2016
Jeffrey L. Wade, J.D.	372,500	—	\$ 2.50	1/13/2009
	135,000	—	\$ 2.50	2/3/2010
	50,000	—	\$14.44	2/2/2011
	65,000	—	\$ 9.38	2/19/2012
	51,762	2,238	\$ 3.90	2/14/2013
	42,508	17,492	\$ 7.59	2/12/2014
	27,504	32,496	\$ 5.76	2/18/2015
—	120,000	\$ 4.00	2/1/2016	
Brian P. Zambrowicz, Ph.D.	90,000 <sup>(2)</sup>	—	\$ 1.67	3/16/2007
	480,000	—	\$ 2.50	9/29/2008
	210,000	—	\$ 2.50	2/3/2010
	50,000	—	\$14.44	2/2/2011
	75,000	—	\$ 9.38	2/19/2012
	60,389	2,611	\$ 3.90	2/14/2013
	49,593	20,407	\$ 7.59	2/12/2014
32,088	37,912	\$ 5.76	2/18/2015	
—	170,000	\$ 4.00	2/1/2016	

(1) Each option vests with respect to 25% of the shares underlying the option on the first anniversary of the grant date and 1/48<sup>th</sup> per month for each month of service thereafter.

(2) Dr. Zambrowicz exercised this option with respect to all 90,000 shares on February 1, 2007.

**Option Exercises in 2006**

None of the individuals listed in the summary compensation table exercised any stock options in 2006.

**Potential Payments upon Termination or Change in Control**

*Employment Agreements*

*Arthur T. Sands, M.D., Ph.D.* Our employment agreement with Dr. Sands provides that if we terminate his employment without “cause,” if Dr. Sands terminates his employment for “good reason,” or if his employment is terminated at the end of any renewal term through notice of non-renewal, in each case prior to a “change in control” of our company, we will pay Dr. Sands his then-current salary for twelve months pursuant to our normal payroll procedures.

If we terminate Dr. Sands’ employment without “cause,” if Dr. Sands terminates his employment for “good reason,” or if his employment is terminated at the end of any renewal term through notice of non-renewal, in each case following a “change in control” of our company, we will pay Dr. Sands his then-current salary for twelve months pursuant to our normal payroll procedures, plus an additional single sum payment equal to his full target bonus for the year in which the termination occurred.

Under our employment agreement with Dr. Sands, “good reason” means any of the following, without Dr. Sands’ prior written consent:

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- before a “change in control,” a five percent or greater reduction in Dr. Sands’ salary, unless such pay cut is applied across the board to our other executive officers, followed by Dr. Sands terminating his employment for “good reason” within 120 days after receiving notice of such reduction;
- following a “change in control,” any reduction in Dr. Sands’ salary, followed by Dr. Sands terminating his employment for “good reason” within 120 days after receiving notice of such reduction;
- any breach by our company of any material provision of the agreement, followed by Dr. Sands terminating his employment for “good reason” within 120 days after receiving notice of such breach;
- a substantial and adverse change in Dr. Sands’ duties, control, authority, status or position, or the assignment to Dr. Sands of any duties or responsibilities which are materially inconsistent with such status or position, or a material reduction in the duties and responsibilities exercised by Dr. Sands, or a loss of title, loss of office, loss of significant authority, power or control, or any removal of Dr. Sands from, or any failure to reappoint or reelect him to his positions as chief executive officer and director, followed by Dr. Sands terminating his employment for “good reason” within 120 days after receiving notice of any such action;
- following a “change in control,” the failure by the surviving entity to expressly assume and agree to continue and perform the agreement in the same manner as we would otherwise be required to perform if the “change in control” had not occurred, followed by Dr. Sands terminating his employment for “good reason” within six months after receiving actual notice of such failure; or
- following a “change in control,” the failure by the surviving entity to continue any pension, medical, health-and-accident, life insurance, or disability income plan or program in which Dr. Sands was participating at the time of the “change in control,” or the taking of any action by the surviving entity that would adversely affect Dr. Sands’ participation in or materially reduce his benefits under any such plan that was enjoyed by him immediately prior to the “change in control,” followed by Dr. Sands terminating his employment for “good reason” within six months after receiving actual notice of such failure or action.

*Julia P. Gregory.* Our employment agreement with Ms. Gregory provides that if we terminate her employment without “cause” or if Ms. Gregory terminates her employment for “good reason,” in either case prior to a “change in control” of our company, we will pay Ms. Gregory her then-current salary for six months pursuant to our normal payroll procedures. If her employment is terminated at the end of any renewal term through notice of non-renewal prior to a “change in control” of our company, we will pay Ms. Gregory her then-current salary pursuant to our normal payroll procedures for up to six months if she has not violated the confidential information, non-competition and other covenants under the agreement and is not employed by another employer.

If we terminate Ms. Gregory’s employment without “cause” or if Ms. Gregory terminates her employment for “good reason,” in either case following a “change in control” of our company, we will pay Ms. Gregory her then-current salary for twelve months pursuant to our normal payroll procedures, plus an additional single sum payment equal to 50% of her target bonus for the year in which the termination occurred. If her employment is terminated at the end of any renewal term through notice of non-renewal following a “change in control” of our company, we will pay Ms. Gregory her then-current salary for six months pursuant to our normal payroll procedures.

Under our employment agreement with Ms. Gregory, “good reason” means any of the following, without Ms. Gregory’s prior written consent:

- any reduction in Ms. Gregory’s salary, followed by Ms. Gregory terminating her employment for “good reason” within 120 days after receiving notice of such reduction;
- any breach by our company of any material provision of the agreement, followed by Ms. Gregory terminating her employment for “good reason” within 120 days after receiving notice of such breach;
- following a “change in control,” the failure by the surviving entity to expressly assume and agree to continue and perform the agreement in the same manner as we would otherwise be required to perform

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if the “change in control” had not occurred, followed by Ms. Gregory terminating her employment for “good reason” within 12 months after receiving actual notice of such failure;

- following a “change in control,” the material reduction of Ms. Gregory’s duties or responsibilities, followed by Ms. Gregory terminating her employment for “good reason” within 12 months after receiving actual notice of such reduction; or
- following a “change in control,” the failure by the surviving entity to continue any pension, medical, health-and-accident, life insurance, or disability income plan or program in which Ms. Gregory was participating at the time of the “change in control,” or the taking of any action by the surviving entity that would adversely affect Ms. Gregory’s participation in or materially reduce her benefits under any such plan that was enjoyed by her immediately prior to the “change in control,” followed by Ms. Gregory terminating her employment for “good reason” within 12 months after receiving actual notice of such failure or action.

*Alan J. Main, Ph.D.* Our employment agreement with Dr. Main provides that if we terminate his employment without “cause” or if Dr. Main terminates his employment for “good reason,” in either case prior to a “change in control” of our company, we will pay Dr. Main his then-current salary for six months pursuant to our normal payroll procedures. If his employment is terminated at the end of any renewal term through notice of non-renewal prior to a “change in control” of our company, we will pay Dr. Main his then-current salary pursuant to our normal payroll procedures for up to six months if he has not violated the confidential information, non-competition and other covenants under the agreement and is not employed by another employer.

If we terminate Dr. Main’s employment without “cause” or if Dr. Main terminates his employment for “good reason,” in either case following a “change in control” of our company, we will pay Dr. Main his then-current salary for twelve months pursuant to our normal payroll procedures, plus an additional single sum payment equal to 50% of his target bonus for the year in which the termination occurred. If his employment is terminated at the end of any renewal term through notice of non-renewal following a “change in control” of our company, we will pay Dr. Main his then-current salary for six months pursuant to our normal payroll procedures.

Under our employment agreement with Dr. Main, “good reason” means any of the following, without Dr. Main’s prior written consent:

- before a “change in control,” a five percent or greater reduction in Dr. Main’s salary, followed by Dr. Main terminating his employment for “good reason” within 120 days after receiving notice of such reduction;
- following a “change in control,” any reduction in Dr. Main’s salary, followed by Dr. Main terminating his employment for “good reason” within 120 days after receiving notice of such reduction;
- any breach by our company of any material provision of the agreement, followed by Dr. Main terminating his employment for “good reason” within 120 days after receiving notice of such breach;
- following a “change in control,” the failure by the surviving entity to expressly assume and agree to continue and perform the agreement in the same manner as we would otherwise be required to perform if the “change in control” had not occurred, followed by Dr. Main terminating his employment for “good reason” within 12 months after receiving actual notice of such failure; or
- following a “change in control,” the failure by the surviving entity to continue any pension, medical, health-and-accident, life insurance, or disability income plan or program in which Dr. Main was participating at the time of the “change in control,” or the taking of any action by the surviving entity that would adversely affect Dr. Main’s participation in or materially reduce his benefits under any such plan that was enjoyed by him immediately prior to the “change in control,” followed by Dr. Main terminating his employment for “good reason” within 12 months after receiving actual notice of such failure or action.

*Jeffrey L. Wade, J.D.* Our employment agreement with Mr. Wade provides that if we terminate his employment without “cause” or if Mr. Wade terminates his employment for “good reason,” in either case prior to a “change in



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control” of our company, we will pay Mr. Wade his then-current salary for six months pursuant to our normal payroll procedures, provided that if such termination occurs within 120 days following a reduction in his salary, such salary continuation shall be based on Mr. Wade’s salary prior to such reduction. If his employment is terminated at the end of any renewal term through notice of non-renewal prior to a “change in control” of our company, we will pay Mr. Wade a severance payment of \$14,000 per month pursuant to our normal payroll procedures for up to six months if he has not violated the confidential information, non-competition and other covenants under the agreement and is not employed by another employer.

If we terminate Mr. Wade’s employment without “cause” or if Mr. Wade terminates his employment for “good reason,” in either case following a “change in control” of our company, we will pay Mr. Wade his then-current salary for twelve months pursuant to our normal payroll procedures, plus an additional single sum payment equal to 50% of his target bonus for the year in which the termination occurred, provided that if such termination occurs within 120 days following a reduction in his salary, the salary continuation payments shall be based on Mr. Wade’s salary prior to such reduction. If his employment is terminated at the end of any renewal term through notice of non-renewal following a “change in control” of our company, we will pay Mr. Wade his then-current salary for six months pursuant to our normal payroll procedures.

Under our employment agreement with Mr. Wade, “good reason” means any of the following, without Mr. Wade’s prior written consent:

- before a “change in control,” a five percent or greater reduction in Mr. Wade’s salary, unless such pay cut is applied across the board to our other executive officers except our chief executive officer, followed by Mr. Wade terminating his employment for “good reason” within 120 days after receiving notice of such reduction;
- following a “change in control,” any reduction in Mr. Wade’s salary, followed by Mr. Wade terminating his employment for “good reason” within 120 days after receiving notice of such reduction;
- any breach by our company of any material provision of the agreement, followed by Mr. Wade terminating his employment for “good reason” within 120 days after receiving notice of such breach;
- following a “change in control,” the failure by the surviving entity to expressly assume and agree to continue and perform the agreement in the same manner as we would otherwise be required to perform if the “change in control” had not occurred, followed by Mr. Wade terminating his employment for “good reason” within 12 months after receiving actual notice of such failure;
- following a “change in control,” the material reduction of Mr. Wade’s duties or responsibilities, followed by Mr. Wade terminating his employment for “good reason” within 12 months after receiving actual notice of such reduction; or
- following a “change in control,” the failure by the surviving entity to continue any pension, medical, health-and-accident, life insurance, or disability income plan or program in which Mr. Wade was participating at the time of the “change in control,” or the taking of any action by the surviving entity that would adversely affect Mr. Wade’s participation in or materially reduce his benefits under any such plan that was enjoyed by him immediately prior to the “change in control,” followed by Mr. Wade terminating his employment for “good reason” within 12 months after receiving actual notice of such failure or action.

*Brian P. Zambrowicz, Ph.D.* Our employment agreement with Dr. Zambrowicz provides that if we terminate his employment without “cause” or if Dr. Zambrowicz terminates his employment for “good reason,” in either case prior to a “change in control” of our company, we will pay Dr. Zambrowicz his then-current salary for six months pursuant to our normal payroll procedures. If his employment is terminated at the end of any renewal term through notice of non-renewal prior to a “change in control” of our company, we will pay Dr. Zambrowicz his then-current salary pursuant to our normal payroll procedures for up to six months if he has not violated the confidential information, non-competition and other covenants under the agreement and is not employed by another employer.

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If we terminate Dr. Zambrowicz's employment without "cause" or if Dr. Zambrowicz terminates his employment for "good reason," in either case following a "change in control" of our company, we will pay Dr. Zambrowicz his then-current salary for twelve months pursuant to our normal payroll procedures, plus an additional single sum payment equal to 50% of his target bonus for the year in which the termination occurred. If his employment is terminated at the end of any renewal term through notice of non-renewal following a "change in control" of our company, we will pay Dr. Zambrowicz his then-current salary for six months pursuant to our normal payroll procedures.

Under our employment agreement with Dr. Zambrowicz, "good reason" means any of the following, without Dr. Zambrowicz's prior written consent:

- before a "change in control," a five percent or greater reduction in Dr. Zambrowicz's salary, unless such pay cut is applied across the board to our other executive officers except our chief executive officer, followed by Dr. Zambrowicz terminating his employment for "good reason" within 120 days after receiving notice of such reduction;
- following a "change in control," any reduction in Dr. Zambrowicz's salary, followed by Dr. Zambrowicz terminating his employment for "good reason" within 120 days after receiving notice of such reduction;
- any breach by our company of any material provision of the agreement, followed by Dr. Zambrowicz terminating his employment for "good reason" within 120 days after receiving notice of such breach;
- following a "change in control," the failure by the surviving entity to expressly assume and agree to continue and perform the agreement in the same manner as we would otherwise be required to perform if the "change in control" had not occurred, followed by Dr. Zambrowicz terminating his employment for "good reason" within 12 months after receiving actual notice of such failure;
- following a "change in control," the material reduction of Dr. Zambrowicz's duties or responsibilities, followed by Dr. Zambrowicz terminating his employment for "good reason" within 12 months after receiving actual notice of such reduction; or
- following a "change in control," the failure by the surviving entity to continue any pension, medical, health-and-accident, life insurance, or disability income plan or program in which Dr. Zambrowicz was participating at the time of the "change in control," or the taking of any action by the surviving entity that would adversely affect Dr. Zambrowicz's participation in or materially reduce his benefits under any such plan that was enjoyed by him immediately prior to the "change in control," followed by Dr. Zambrowicz terminating his employment for "good reason" within 12 months after receiving actual notice of such failure or action.

Under each of our employment agreements with the individuals named in the summary compensation table, "cause" means any of the following:

- the individual having engaged in intentional misconduct causing our material violation of any state or federal laws;
- the individual having engaged in a theft of corporate funds or corporate assets or in a material act of fraud upon us;
- an act of personal dishonesty taken by the individual that was intended to result in personal enrichment of the individual at our expense;
- the individual's final conviction in a court of competent jurisdiction of a felony; or
- a breach by the individual during his or her employment of the conflict of interest, confidential information and non-competition covenants under the agreement.

Under each of our employment agreements with the individuals named in the summary compensation table, a "change in control" shall have occurred upon any of the following events:

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- any person, other than certain specified persons, becomes the beneficial owner of securities representing 35% or more of the combined voting power of our outstanding voting securities;
- a reorganization, merger, or consolidation pursuant to which our stockholders immediately prior to such reorganization, merger or consolidation do not, immediately thereafter, own or control more than 50% of the combined voting power of the surviving entity's outstanding voting securities in substantially the same proportions as prior to such reorganization, merger or consolidation;
- our liquidation or dissolution or the sale of all or substantially all of our assets;
- the election by our stockholders of any person to our board of directors who has not been nominated for election by a majority of the board of directors or any duly appointed committee thereof;
- following the election or removal of directors, a majority of the board of directors consists of individuals who were not members of the board of directors two years before such election or removal, unless the election of such individuals to the board of directors has been approved in advance by directors representing a majority of the directors then in office who were directors at the beginning of the two-year period; or
- any other corporate event affecting the company deemed to be a "change in control" by the board of directors.

### *Stock Option Agreements*

Our stock option agreements with the individuals named in the summary compensation table provide that all remaining unvested stock options shall become fully vested upon a change in control of our company. Under the stock option agreements, a "change in control" shall have occurred upon any of the following events:

- any person becomes the beneficial owner of securities representing 35% or more of the combined voting power of our outstanding voting securities;
- a reorganization, merger, or consolidation pursuant to which our stockholders immediately prior to such reorganization, merger or consolidation do not, immediately thereafter, own or control more than 50% of the combined voting power of the surviving entity's outstanding voting securities in substantially the same proportions as prior to such reorganization, merger or consolidation;
- our liquidation or dissolution or the sale of all or substantially all of our assets;
- the election by our stockholders of any person to our board of directors who has not been nominated for election by a majority of the board of directors or any duly appointed committee thereof;
- following the election or removal of directors, a majority of the board of directors consists of individuals who were not members of the board of directors two years before such election or removal, unless the election of such individuals to the board of directors has been approved in advance by directors representing a majority of the directors then in office who were directors at the beginning of the two-year period; or
- any other corporate event affecting the company deemed to be a "change in control" by the compensation committee.

The following table reflects the amounts the individuals named in the summary compensation table would have been entitled to receive if the foregoing termination and change-in-control events had occurred on December 31, 2006 and does not take into account any taxes that may have been payable in connection with those payments:

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Name	Aggregate Salary Continuation <sup>(1)</sup>	Bonus <sup>(2)</sup>	Accelerated Portion of Stock Options <sup>(3)</sup>
Arthur T. Sands, M.D., Ph.D.	\$ 473,000	\$ 236,500	\$ —
Julia P. Gregory	\$ 329,000	\$ 57,575	\$ —
Alan J. Main, Ph.D.	\$ 312,000	\$ 46,800	\$ —
Jeffrey L. Wade, J.D.	\$ 292,000	\$ 51,100	\$ —
Brian P. Zambrowicz, Ph.D.	\$ 312,000	\$ 62,400	\$ —

- (1) Reflects aggregate salary continuation payments due as a result of terminations occurring after a change in control of our company. If such terminations had occurred prior to a change in control, the aggregate salary continuation payments for Dr. Sands, Ms. Gregory, Dr. Main, Mr. Wade and Dr. Zambrowicz would have been \$473,000, \$164,500, \$156,000, \$146,000 and \$156,000, respectively. If Mr. Wade's employment had been terminated at the end of a renewal term through notice of non-renewal prior to a change in control of our company, he would have been entitled to aggregate salary continuation payments of \$84,000.
- (2) Reflects single-sum bonus payments due as a result of terminations occurring after a change in control of our company. If such terminations had occurred prior to a change in control, no single-sum bonus payments would be due to Dr. Sands, Ms. Gregory, Dr. Main, Mr. Wade or Dr. Zambrowicz.
- (3) Based on the closing price of our common stock on the Nasdaq Global Market on December 29, 2006 of \$3.61 per share, less the exercise price payable with respect to the stock options for which vesting would have been accelerated.

### **Director Compensation in 2006**

Each non-employee member of our board of directors currently receives the following cash compensation:

- an annual retainer of \$15,000 for service on the board of directors (\$30,000 for service as non-executive chairman of the board of directors), prorated for any partial year of service;
- an annual retainer of \$2,500 for service on each committee of the board of directors of which he or she is a member (\$5,000 for service as chairman of any such committee), prorated for any partial year of service;
- a fee of \$2,500 for each meeting of the board of directors that he or she attends in person (\$500 for each telephonic meeting of the board of directors in which he or she participates); and
- a fee of \$1,000 for each committee meeting that he or she attends in person other than in connection with a meeting of the full board of directors (\$500 for each telephonic committee meeting in which he or she participates).

Arthur T. Sands, M.D., Ph.D., our president and chief executive officer, does not receive additional compensation for his service as a director. We make additional cash payments to Dr. Lefkowitz for his consulting services and to Dr. Nies for his consulting services as chairman of our medical advisory board. During 2006, we also made additional cash payments to C. Thomas Caskey, M.D., whose term on our board of directors expired on April 26, 2006, for his consulting services earned while a member of our board of directors.

Our 2000 Non-Employee Directors' Stock Option Plan provides for the grant of options to purchase shares of common stock to our non-employee directors. Non-employee directors first elected after the closing of our initial public offering in April 2000 receive an initial option to purchase 30,000 shares of common stock. In addition, all non-employee directors who have served in such capacity for six months receive an annual option to purchase 10,000 shares of common stock. All options granted under the non-employee directors' plan have an exercise price equal to the fair market value of our common stock on the date of grant.

The chairman of our board of directors receives an additional annual option under our 2000 Equity Incentive Plan to purchase 10,000 shares of common stock. All such options have an exercise price equal to the fair market value of our common stock on the date of grant.

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The following table presents summary information for the year ended December 31, 2006 regarding the compensation of the non-employee members of our board of directors. Dr. Caskey's term as a director expired on April 26, 2006 and Ms. Cloherty resigned as a director effective April 30, 2006. Dr. Mills was elected as a director on June 21, 2006. Ms. Wiltsey was elected as a director on February 26, 2007 and did not receive any compensation for 2006.

Name	Fees Earned or Paid in Cash	Option Awards (1) (2) (3)	All Other Compensation	Total
Samuel L. Barker, Ph.D.	\$ 51,000	\$ 91,843	—	\$ 142,843
C. Thomas Caskey, M.D.	\$ 7,333	\$ 10,060	\$ 18,750 <sup>(4)</sup>	\$ 36,143
Patricia M. Cloherty	\$ 10,139	\$ 39,383	—	\$ 49,522
Robert J. Lefkowitz, M.D.	\$ 30,000	\$ 44,643	\$ 50,000 <sup>(5)</sup>	\$ 124,643
Barry Mills, J.D., Ph.D.	\$ 16,542	\$ 10,023	—	\$ 26,565
Alan S. Nies, M.D.	\$ 27,500	\$ 64,395	\$ 75,000 <sup>(6)</sup>	\$ 166,895
Frank P. Palantoni	\$ 37,194	\$ 59,240	—	\$ 96,434
Clayton S. Rose	\$ 40,792	\$ 65,111	—	\$ 105,903

(1) Reflects the dollar amount recognized for financial statement reporting purposes for the year ended December 31, 2006 in accordance with FAS 123(R) (but disregarding forfeiture estimates related to service-based vesting conditions) and, accordingly, includes amounts from options granted prior to 2006. See the information appearing under the heading entitled "Stock-Based Compensation" in footnote 2 to our consolidated financial statements included as part of our Annual Report on Form 10-K for the year ended December 31, 2006 for certain assumptions made in the valuation of options granted in the years ended December 31, 2006, 2005 and 2004. See the information appearing under the heading entitled "Stock-Based Compensation" in footnote 12 to our consolidated financial statements included as part of our Annual Report on Form 10-K for the year ended December 31, 2003 for certain assumptions made in the valuation of options granted in the years ended December 31, 2003, 2002 and 2001.

(2) The non-employee members of our board of directors who held such position on December 31, 2006 held the following aggregate number of unexercised options as of such date:

Name	Number of Securities Underlying Unexercised Options
Samuel L. Barker, Ph.D.	94,000
Robert J. Lefkowitz, M.D.	68,000
Barry Mills, J.D., Ph.D.	30,000
Alan S. Nies, M.D.	58,500
Frank P. Palantoni	40,000
Clayton S. Rose	50,000

(3) The following table presents the fair value of each grant of stock options in 2006 to non-employee members of our board of directors, computed in accordance with FAS 123(R):

Name	Grant Date	Number of Securities Underlying Options	Exercise Price of Option Awards	Grant Date Fair Value of Options
Samuel L. Barker, Ph.D.	2/15/2006	10,000	\$ 4.40	\$ 29,074
	4/27/2006	10,000	\$ 5.10	\$ 38,905
	4/27/2006	10,000	\$ 5.10	\$ 38,905
Patricia M. Cloherty	4/27/2006	10,000	\$ 5.10	\$ 38,905
Robert J. Lefkowitz, M.D.	4/27/2006	10,000	\$ 5.10	\$ 38,905
Barry Mills, J.D., Ph.D.	4/27/2006	30,000	\$ 4.15	\$ 95,121
Alan S. Nies, M.D.	4/27/2006	10,000	\$ 5.10	\$ 38,905
Frank P. Palantoni	4/27/2006	10,000	\$ 5.10	\$ 38,905
Clayton S. Rose	4/27/2006	10,000	\$ 5.10	\$ 38,905

(4) Consists of amounts payable to Dr. Caskey for his consulting services earned while a member of our board of directors.

(5) Consists of amounts payable to Dr. Lefkowitz for his consulting services.

(6) Consists of amounts payable to Dr. Nies for his consulting services as chairman of our medical advisory board.

## Compensation Committee Report

The compensation committee of our board of directors is responsible for evaluating the performance of management, determining the compensation of our executive and other officers and administering our 2000 Equity Incentive Plan, under which stock option grants and other stock awards may be made to our employees.

In performing these functions, the compensation committee has reviewed and discussed with the management of our company the information set forth above under the heading “Executive and Director Compensation— Compensation Discussion and Analysis.” Based upon that review and discussion, the compensation committee has recommended to the board of directors that the information set forth above under the heading “Executive and Director Compensation— Compensation Discussion and Analysis” be included in this proxy statement and incorporated by reference into our annual report on Form 10-K for the year ended December 31, 2006.

### Compensation Committee

Frank P. Palantoni (chair)  
Clayton S. Rose  
Barry Mills, J.D., Ph.D.

The foregoing compensation committee report shall not be deemed “filed” for purposes of Section 18 of the Securities Exchange Act of 1934, or otherwise subject to the liabilities of that section, nor shall it be deemed incorporated by reference by any general statement incorporating by reference this proxy statement into any filing under the Securities Act of 1933 or under the Securities Exchange Act of 1934, except to the extent that we specifically incorporate this compensation committee report by reference.

## PROPOSALS OF STOCKHOLDERS

In order for a stockholder proposal to be considered for inclusion in our proxy statement for next year’s annual meeting, we must receive the written proposal at our principal executive offices no later than November 23, 2007. Any such proposal must also comply with Securities and Exchange Commission regulations regarding the inclusion of stockholder proposals in company-sponsored proxy materials. Similarly, in order for any stockholder proposal to be otherwise raised during next year’s annual meeting, we must receive written notice of the proposal, containing the information required by our bylaws, at our principal executive offices no later than November 23, 2007. You may contact the corporate secretary at our principal executive offices for a copy of the relevant bylaw provisions for making stockholder proposals.

## FINANCIAL INFORMATION

Our annual report to stockholders, including financial statements, accompanies this proxy statement but does not constitute a part of the proxy solicitation materials. **You may obtain, without charge, a copy of our annual report on Form 10-K, including the financial statements and exhibits thereto, by written request to Corporate Communications, Lexicon Genetics Incorporated, 8800 Technology Forest Place, The Woodlands, Texas 77381.**

By order of the board of directors,

/s/ Jeffrey L. Wade

Jeffrey L. Wade  
Secretary

March 23, 2007  
The Woodlands, Texas

**FIRST CERTIFICATE OF AMENDMENT  
TO  
RESTATED CERTIFICATE OF INCORPORATION  
OF  
LEXICON GENETICS INCORPORATED**

LEXICON GENETICS INCORPORATED (the "Corporation"), a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware ("DGCL"), hereby certifies as follows pursuant to Section 242 of the DGCL:

FIRST: That at a meeting of the Board of Directors of the Corporation, resolutions were duly adopted setting forth a proposed amendment of the Corporation's Restated Certificate of Incorporation, declaring such amendment to be advisable and calling a meeting of the Corporation's stockholders for consideration thereof. The resolution setting forth the proposed amendment is as follows:

RESOLVED that, subject to stockholder approval, the Corporation's restated certificate of incorporation be amended by changing Article I thereof so that, as amended, such Article shall be and read as follows:

"ARTICLE I

Name

The name of the Corporation is "Lexicon Pharmaceuticals, Inc."

SECOND: That thereafter, pursuant to a resolution of its Board of Directors, the regular meeting of the Corporation's stockholders was duly called and held upon notice in accordance with the provisions of Section 222 of the DGCL, at which meeting the necessary number of shares as required by applicable law were voted in favor of such amendment.

THIRD: That such amendment was duly adopted in accordance with the provisions of Section 242 of the DGCL.

IN WITNESS WHEREOF, the Corporation has caused this First Certificate of Amendment to be signed by Jeffrey L. Wade, its Executive Vice President and General Counsel, this \_\_\_ day of April, 2007.

LEXICON GENETICS INCORPORATED

By: \_\_\_\_\_  
Jeffrey L. Wade  
*Executive Vice President and General Counsel*

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THE BOARD OF DIRECTORS RECOMMENDS A VOTE FOR PROPOSALS 1, 2 AND 3.

Please Mark Here for Address Change or Comments  
**0**  
SEE REVERSE SIDE

THIS PROXY WILL BE VOTED AS DIRECTED OR, IF NO DIRECTION IS INDICATED, WILL BE VOTED:

"FOR" the election of the nominees for Class I Director; "FOR" the proposal to ratify and approve an amendment to the Company's restated certificate of incorporation changing the name of the Company to "Lexicon Pharmaceuticals, Inc."; and "FOR" the proposal to ratify and approve the appointment of Ernst & Young LLP as the Company's independent auditors for the fiscal year ending December 31, 2007.

1. Election of Class I Directors	FOR all nominees listed except as indicated	WITHHOLD AUTHORITY to vote for all nominees
Nominees: 01 Robert J. Lefkowitz, M.D. 02 Alan S. Nies, M.D. 03 Clayton S. Rose	<b>0</b>	<b>0</b>

2. Ratification and approval of an amendment to the Company's restated certificate of incorporation changing the name of the Company to "Lexicon Pharmaceuticals, Inc."	FOR	AGAINST	ABSTAIN
	<b>0</b>	<b>0</b>	<b>0</b>

3. Ratification and approval of the appointment of Ernst & Young LLP as the Company's independent auditors for the fiscal year ending December 31, 2007.	FOR	AGAINST	ABSTAIN
	<b>0</b>	<b>0</b>	<b>0</b>

INSTRUCTION: To withhold authority to vote for any individual nominee, write that nominee's name on the following line.

\_\_\_\_\_

If you plan to attend the meeting in person, please mark the following box. **0**

Dated \_\_\_\_\_, 2007



\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Signature if held jointly)

Please date, sign as name appears at the left, and return promptly. If the shares are registered in the names of two or more persons, each should sign. When signing as Corporate Officer, President, Executor, Administrator, Trustee or Guardian, please give full title. Please note any changes in your address alongside the address as it appears in the proxy.

5 FOLD AND DETACH HERE 5



PROXY  
**LEXICON GENETICS INCORPORATED**  
ANNUAL MEETING OF STOCKHOLDERS  
APRIL 25, 2007

**THIS PROXY IS SOLICITED ON BEHALF OF THE BOARD OF DIRECTORS OF  
LEXICON GENETICS INCORPORATED**

The undersigned hereby appoints Arthur T. Sands and Jeffrey L. Wade, and each of them, as proxies and attorneys-in-fact, with the power to act without the other and with power of substitution, to represent the undersigned at the Annual Meeting of Stockholders of Lexicon Genetics Incorporated (the "Company") to be held at The Marriott Woodlands Waterway Hotel and Convention Center, 1601 Lake Robbins Drive, The Woodlands, Texas, on April 25, 2007, at 1:30 p.m., local time, and any adjournments or postponements thereof, and to vote all of the shares of stock the undersigned would be entitled to vote if personally present at such meeting (1) as provided on the other side of this proxy and (2), in their discretion, on such other business as may properly come before such meeting or any adjournment or postponement thereof.

(Continued and to be marked, dated and signed on other side)

Address Change/Comments (Mark the corresponding box on the reverse side)

5FOLD AND DETACH HERE5

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SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_ TIME: \_\_\_\_\_

Mark this box if you would like the Proxy Card EDGARized:  ASCII  EDGAR II (HTML)

Registered Quantity (common) \_\_\_\_\_ 401k/ESOP/Plans \_\_\_\_\_ Broker Quantity \_\_\_\_\_

Registered Quantity (preferred) \_\_\_\_\_ Color Stripe \_\_\_\_\_ Color Stripe \_\_\_\_\_