

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

SCHEDULE 14A
(RULE 14a-101)

INFORMATION REQUIRED IN PROXY STATEMENT

SCHEDULE 14A INFORMATION

PROXY STATEMENT PURSUANT TO SECTION 14(a) OF THE SECURITIES
EXCHANGE ACT OF 1934 (AMENDMENT NO.)

Filed by the Registrant [X]
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))
- [X] Definitive Proxy Statement
- [] Definitive Additional Materials
- [] Soliciting Material Pursuant to Rule 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):

- [X] 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:

[LEXICON LOGO]

March 16, 2001

TO OUR STOCKHOLDERS:

I am pleased to invite you to attend the 2001 annual meeting of stockholders of Lexicon Genetics Incorporated to be held on Wednesday, April 18, 2001, at 1:30 p.m., local time at our corporate offices located at 4000 Research Forest Drive, The Woodlands, Texas. We have enclosed with this letter:

- o an official notice of the annual meeting;
- o a proxy statement that describes the matters to be considered and acted upon at the annual meeting; and
- o 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,

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

LEXICON GENETICS INCORPORATED
4000 RESEARCH FOREST DRIVE
THE WOODLANDS, TEXAS 77381
(281) 364-0100

NOTICE OF ANNUAL MEETING OF STOCKHOLDERS
TO BE HELD APRIL 18, 2001

TO OUR STOCKHOLDERS:

The annual meeting of stockholders of Lexicon Genetics Incorporated will be held on Wednesday, April 18, 2001, at 1:30 p.m., local time, at our corporate offices located at 4000 Research Forest Drive, The Woodlands, Texas, to:

- o elect one Class I director;
- o ratify and approve the appointment of Arthur Andersen LLP as our independent public accountants for the fiscal year ending December 31, 2001; and
- o 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 12, 2001.

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,

Jeffrey L. Wade
Secretary

The Woodlands, Texas
March 16, 2001

LEXICON GENETICS INCORPORATED
4000 RESEARCH FOREST DRIVE
THE WOODLANDS, TEXAS 77381
(281) 364-0100

PROXY STATEMENT
FOR
ANNUAL MEETING OF STOCKHOLDERS

TO BE HELD APRIL 18, 2001

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 2001 annual meeting of stockholders and any adjournment or postponement thereof. 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 16, 2001.

TIME AND PLACE OF ANNUAL MEETING

The annual meeting will be held on Wednesday, April 18, 2001, at 1:30 p.m., local time, at our corporate offices located at 4000 Research Forest 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:

- o the election of one Class I director; and
- o a proposal to ratify and approve the appointment of Arthur Andersen LLP as our independent public accountants for the fiscal year ending December 31, 2001.

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 12, 2001, 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 12, 2001 or a proxy to vote your shares.

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 48,469,173 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 director will be elected by a plurality vote. As a result, if a quorum is present at the annual meeting, the person receiving the greatest number of votes will be elected to serve as our Class I director. Withholding authority to vote for the director nominee will not affect the outcome of the election of directors.

The ratification and approval of the appointment of Arthur Andersen LLP as our independent public accountants for the year ending December 31, 2001, and any other business that may properly come before the annual meeting for a vote, will require 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. Broker non-votes do not count as votes for or against these proposals and are not considered in calculating the number of votes necessary for 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 nominee for election as a Class I director or withhold your vote for that nominee. You may vote for or against the proposal to ratify and approve the appointment of Arthur Andersen LLP as our independent public accountants for the year ending December 31, 2001, or abstain from voting on that proposal.

If you sign and return the enclosed proxy card and do not withhold authority to vote for the election of our nominee for election as a Class I director, all of your shares will be voted for the election of that nominee. If you withhold authority to vote for our nominee for election as a Class I director, none of your shares will be voted for that nominee.

If our nominee for election as a Class I director becomes 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 a substitute nominee. We have no reason to believe that our nominee for election as a Class I director will be unavailable. If our Board of Directors designates a substitute nominee, the persons named in the enclosed proxy card will vote your shares for such substitute 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 nominee for election as a Class I director and in favor of the proposal to ratify and approve the appointment of Arthur Andersen LLP as our independent accountants for the year ending December 31, 2001.

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, 4000 Research Forest Drive, 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 4000 Research Forest Drive, 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.

STOCK OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

The following table presents information regarding the beneficial ownership of our common stock as of March 12, 2001 by:

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

Beneficial ownership is determined in accordance with the rules of the SEC 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 12, 2001 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 48,469,173 shares of common stock outstanding on March 12, 2001. Unless otherwise indicated in the footnotes, the address of each of the individuals named below is: c/o Lexicon Genetics Incorporated, 4000 Research Forest Drive, The Woodlands, Texas 77381.

BENEFICIAL OWNERSHIP			
NUMBER OF SHARES BENEFICIALLY OWNED	SHARES ISSUABLE PURSUANT TO OPTIONS EXERCISABLE WITHIN 60 DAYS OF MARCH 12, 2001		PERCENTAGE OWNERSHIP
Gordon A. Cain(1).....	13,001,000	--	26.8%
Baylor College of Medicine(2).....	4,758,961	--	9.8%
Apax Partners & Co., Ltd.(3).....	2,850,000	--	5.9%
Patricof & Co. Ventures, Ltd.(4).....	2,757,500	--	5.7%
Arthur T. Sands, M.D., Ph.D.(5).....	964,800	1,870,067	5.6%
Julia P. Gregory(6).....	81,847	136,433	*
Jeffrey L. Wade, J.D.	5,000	287,883	*
James R. Piggott, Ph.D.	--	127,971	*
Brian P. Zambrowicz, Ph.D.	--	621,713	1.3%
C. Thomas Caskey, M.D.	400	40,624	*
Sam L. Barker, Ph.D.	3,000	6,500	*
Patricia M. Cloherty.....	--	1,500	*
Robert J. Lefkowitz, M.D.	--	1,000	*
William A. McMinn.....	1,309,091	--	2.7%
All directors and executive officers as a group(16 persons)(1)(5)(6).....	15,379,338	3,521,858	36.4%

* Represents beneficial ownership of less than 1 percent.

(1) The number of shares beneficially owned by Mr. Cain includes 2,000,000 shares owned by The Gordon and Mary Cain Foundation, of which Mr. Cain is a trustee. Mr. Cain disclaims beneficial ownership of these shares.

(2) The address for Baylor College of Medicine is c/o BCM Technologies, Inc., 1709 Dryden Road, Suite 901, Medical Towers Building, Houston, Texas 77030. The number of shares beneficially owned includes 475,461 shares owned by BCM Technologies, Inc.

- (3) Based upon a Schedule 13G filed on February 14, 2001, reflecting the beneficial ownership of our common stock by Apax Partners & Co., Ltd. and certain of its affiliates. The address for Apax Partners & Co., Ltd. is 15 Portland Place, London, W1B 1PT, England.
- (4) Based upon a Schedule 13G filed on February 14, 2001, reflecting the beneficial ownership of our common stock by Patricof & Co. Ventures, Inc. and certain of its affiliates. The address for Patricof & Co. Ventures, Inc. is 445 Park Avenue, New York, New York 10022
- (5) The number of shares beneficially owned by Dr. Sands includes 45,000 shares held in the name of minor children.
- (6) The number of shares beneficially owned by Ms. Gregory includes 5,047 shares held in the name of minor 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 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, 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, 2000, all Section 16(a) filing requirements applicable to our officers, directors and 10% stockholders were complied with in a timely manner, with the exception of one late filing on Form 4 by C. Thomas Caskey, M.D., relating to two purchases of shares of our common stock.

PROPOSAL NUMBER 1: ELECTION OF DIRECTOR

Our Board of Directors, which currently has seven 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 director will expire at this annual meeting. The current terms of our Class II and Class III directors will expire at our 2002 and 2003 annual meetings of stockholders, respectively.

The Board of Directors has nominated and urges you to vote for the election of the nominee identified below, a member of our present Board of Directors, who has been nominated to serve as a Class I director until the 2004 annual meeting of stockholders or until his successor is duly elected and qualified. Your signed proxy will be voted for the nominee named below unless you specifically indicate on the proxy that you are withholding your vote.

NOMINEE FOR CLASS I DIRECTOR

The following individual is nominated for election as a Class I director:

NAME	AGE	POSITION WITH THE COMPANY	YEAR FIRST BECAME A DIRECTOR
- - - - -	- - -	- - - - -	- - - - -
Robert J. Lefkowitz	57	Director (Class I)	2001

Robert J. Lefkowitz, M.D. has been a director since February 2001. 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.

THE BOARD OF DIRECTORS RECOMMENDS THAT STOCKHOLDERS VOTE "FOR" THE FOREGOING NOMINEE FOR ELECTION AS A CLASS I DIRECTOR.

CURRENT AND CONTINUING DIRECTORS

The current directors of the Company are identified below:

NAME - - - - -	AGE ---	POSITION WITH THE COMPANY -----
Arthur T. Sands, M.D., Ph.D.	39	President and Chief Executive Officer and Director (Class III)
C. Thomas Caskey, M.D.	62	Chairman of the Board of Directors (Class III)
Sam L. Barker, Ph.D.(1)(2).....	58	Director (Class II)
Gordon A. Cain	88	Director (Class II)
Patricia M. Cloherty(1)(2).....	58	Director (Class II)
Robert J. Lefkowitz, M.D.	57	Director (Class I)
William A. McMinn(1).....	70	Director (Class III)

(1) Member of the Audit Committee.

(2) Member of the Compensation Committee.

Information regarding the business experience of Dr. Lefkowitz is set forth above under the heading "--Nominee for Class I Director."

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. From 1992 to September 1995, Dr. Sands served as an American Cancer Society postdoctoral fellow in the Department of Human and Molecular Genetics at Baylor College of Medicine, where he studied the function of the p53 gene in cancer formation and created the XPC knockout mouse, a model for skin cancer. 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.

C. Thomas Caskey, M.D. became Chairman of our Board of Directors in April 2000. Dr. Caskey has been President and Chief Executive Officer of CoGene Biotech Ventures, Ltd., a venture capital firm, since April 2000. He served as Senior Vice President, Research at Merck Research Laboratories from 1995 to March 2000 and as President of the Merck Genome Research Institute from 1996 to March 2000. Before joining Merck, Dr. Caskey served 25 years at Baylor College of Medicine in a series of senior positions, including Chairman, Department of Human and Molecular Genetics and Director, Human Genome Center. He is a member of the National Academy of Sciences. Dr. Caskey serves as a director of Luminex Corporation and several private companies. He received his B.A. from the University of South Carolina and his M.D. from Duke University Medical School.

Sam L. Barker, Ph.D. has been a director since March 2000. Dr. Barker served in a series of senior domestic and international management positions at Bristol-Myers Squibb until his retirement in 1998. His positions at Bristol-Myers Squibb included service as Executive Vice President, Worldwide Franchise Management and Strategy during 1998, President, U.S. Pharmaceutical Group from 1995 to 1997 and President, U.S. Pharmaceuticals from 1992 to 1995. 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.

Gordon A. Cain has been a director since September 1995 and served as Chairman of our Board of Directors from September 1995 until July 1999. Mr. Cain also serves as Chairman of the Board of Agennix Inc., another biotechnology company in which he is a principal investor. From August 1982 until his retirement in December 1992, he was Chairman of the Board of The Sterling Group, Inc. Mr. Cain was the Chairman of the Board of Sterling Chemicals, Inc. from 1986 until it was sold in August 1996 and was a member of the board of directors of Arcadian Corporation from May 1989 until it was sold in April 1997. Prior to organizing The Sterling Group, Mr. Cain was involved in the purchase of a variety of businesses and provided consulting services to these and other companies. Mr. Cain was also Chairman of the Board of Cain Chemical Inc. from its organization in March 1987 until its acquisition by Occidental Petroleum Corporation in May 1988 and the Chairman of the Board of Vista

Chemical Company from 1984 until 1986. Mr. Cain presently serves as a director of Texas Petrochemicals Corporation. He received a B.S. in Chemical Engineering from Louisiana State University.

Patricia M. Cloherty has been a director since May 1998. Since 1998, Ms. Cloherty has served as Chairman of the U.S. Russia Investment Fund, established by the United States government to invest in Russian companies. From 1988 through 1999, she was General Partner of Patricof & Co. Ventures, Inc., an international venture capital company, and successively served as Senior Vice President, President and Co-Chairman of that company. Ms. Cloherty served as deputy administrator of the U.S. Small Business Administration from 1977 to 1978 and has served as Chairman of the U.S. Russia Investment Fund since 1995. She is past president and chairman of the National Venture Capital Association. Ms. Cloherty serves as a director of Diversa Corporation and several private companies and philanthropies. She holds a B.A. from the San Francisco College for Women and an M.A. and an M.I.A. from Columbia University.

William A. McMinn has been a director since September 1997 and was the Chairman of our Board of Directors from July 1999 until April 2000. Mr. McMinn has served as Chairman of the Board of Texas Petrochemicals Corporation since 1996. He was Corporate Vice President and Manager of the Industrial Chemical Group of FMC Corporation, a manufacturer of machinery and chemical products, from 1973 through 1985. He became President and Chief Executive Officer of Cain Chemical Inc. in 1987, and served in that capacity until its acquisition by Occidental Petroleum in May 1988. He became Chairman of the board of directors of Arcadian Corporation in August 1990 and served in that capacity until it was sold in April 1997. Mr. McMinn received his B.S. from Vanderbilt University.

BOARD COMMITTEES

Audit Committee. Our audit committee reviews our internal accounting procedures and consults with, and reviews the services provided by, our independent public accountants. Current members of our audit committee are William A. McMinn, Sam L. Barker, Ph.D. and Patricia M. Cloherty.

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 employees. The compensation committee also administers the issuance of stock options and other awards under our 2000 Equity Incentive Plan. Current members of the compensation committee are Sam L. Barker, Ph.D. and Patricia M. Cloherty.

BOARD AND COMMITTEE MEETINGS IN 2000

The Board of Directors met six times in 2000 and took certain additional actions by unanimous written consent in lieu of meetings. The audit committee and compensation committee met three and five times, respectively, in 2000. During 2000, none of our directors other than Gordon A. Cain attended fewer than 75 percent of the meetings of the Board of Directors or committee during the period served.

DIRECTOR COMPENSATION

Each non-employee director currently receives a fee of \$2,000 for each meeting of the Board of Directors that he or she attends in person, and \$500 for each committee meeting (other than a committee meeting held at the same time as a meeting of the full Board of Directors) or telephonic meeting of the Board of Directors in which he or she participates. During 2000, Sam L. Barker, Ph.D. was the only director who received compensation under these arrangements, which were extended to all non-employee directors in 2001. Directors who are also employees, currently Arthur T. Sands, M.D., Ph.D. and C. Thomas Caskey, M.D., do not receive additional compensation for their service as directors. All directors are reimbursed for expenses in connection with attendance at board of directors and committee meetings.

Dr. Caskey receives a salary of \$150,000 per year for his service as an employee and Chairman of our Board of Directors. In connection with his employment as our Chairman of the Board in April 2000, Dr. Caskey received an option under our 2000 Equity Incentive Plan to purchase 150,000 shares of common stock at an exercise

price of \$19.80 per share, the fair market value of our common stock on the date of grant as determined by our Board of Directors.

In connection with his election as a director in March 2000, Dr. Barker received an option under our 2000 Equity Incentive Plan to purchase 30,000 shares of common stock at an exercise price of \$19.80 per share, the fair market value of our common stock on the date of grant as determined by our Board of Directors.

In February 2000, we adopted our 2000 Non-employee Directors' Stock Option Plan to provide for the automatic grant of options to purchase shares of common stock to our directors who are not employees. Non-employee directors elected after the closing of our initial public offering will receive an initial option to purchase 30,000 shares of common stock. Starting at the annual stockholder meeting in 2001, all non-employee directors will receive an annual option to purchase 6,000 shares of common stock. All options granted under the non-employee directors' plan will have an exercise price equal to the fair market value of our common stock on the date of grant. No options were granted under the non-employee directors' plan in 2000.

CERTAIN TRANSACTIONS

In August 1997, we entered into a loan agreement with William A. McMinn, one of our directors. Under the terms of the promissory note, we borrowed a principal amount of \$1,000,000 at an interest rate of 8.0% to be repaid in 36 monthly installments of \$16,666.67 each. The monthly installments commenced on August 31, 1999, and the outstanding principal balance of the loan was to be due, together with all accrued but unpaid interest, on August 31, 2002. The note was pre-payable, in whole or in part, at any time without penalty. In connection with this loan agreement, we issued to Mr. McMinn a warrant to purchase 135,000 shares of our common stock at an exercise price of \$2.50 per share. We repaid the note to Mr. McMinn, and Mr. McMinn exercised the warrant, in June 2000.

We believe that the transactions described above were made on terms no less favorable to us than could have been obtained from unaffiliated third parties. All future transactions, including loans, between us and our officers, directors, principal stockholders and their affiliates will be approved by a majority of the board of directors, including a majority of the independent and disinterested directors, and will continue to be on terms no less favorable to us than could be obtained from unaffiliated third parties.

COMPENSATION COMMITTEE INTERLOCKS AND INSIDER PARTICIPATION

During 2000, Paul Haycock, M.D. and Stephen J. Banks, both former members of our board of directors, and Patricia M. Cloherty and Sam L. Barker, Ph.D. served as members of the compensation committee of our board of directors. No member of the compensation committee serves as a member of the board of directors or compensation committee of any other entity that has one or more executive officers serving as a member of our board of directors or compensation committee.

PROPOSAL NUMBER 2: RATIFICATION AND APPROVAL OF INDEPENDENT PUBLIC ACCOUNTANTS

The Board of Directors has appointed the firm of Arthur Andersen LLP as our independent public accountants to make an examination of our accounts for the fiscal year ending December 31, 2001, subject to ratification by our stockholders. Representatives of Arthur Andersen 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 ARTHUR ANDERSEN LLP AS OUR INDEPENDENT PUBLIC ACCOUNTANTS FOR THE FISCAL YEAR ENDING DECEMBER 31, 2001.

COMPENSATION OF INDEPENDENT PUBLIC ACCOUNTANTS

Audit Fees

The estimated aggregate fees billed and to be billed by Arthur Andersen LLP for professional services rendered for the audit of our annual financial statements for the fiscal year ended December 31, 2000 and for the reviews of the financial statements included in our quarterly reports on Form 10-Q for that fiscal year were \$143,000.

Financial Information Systems Design and Implementation Fees

Arthur Andersen LLP did not provide us any information technology services relating to financial information systems design and implementation in 2000.

All Other Fees

The aggregate fees billed by Arthur Andersen LLP for services rendered to us in 2000, other than the services described above under "Audit Fees" and "Financial Information Systems Design and Implementation Fees," were \$249,500. These fees related primarily to services in connection with our April 2000 initial public offering, our October 2000 synthetic lease and the preparation of tax returns.

REPORT OF THE AUDIT COMMITTEE OF THE BOARD OF DIRECTORS

The audit committee of our Board of Directors currently consists of William A. McMinn, Sam L. Barker, Ph.D. and Patricia M. Cloherty. A former member of our Board of Directors, Stephen J. Banks, served on the committee during 2000 until his resignation from our Board of Directors. Dr. Barker was elected as a member of the committee in September 2000. The Board of Directors, in its business judgment, has determined that all members of the audit committee are "independent," as required by applicable listing standards of The Nasdaq Stock Market, Inc. The committee has furnished the following report for 2000:

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 public accountants. The committee operates pursuant to a charter that was last amended and restated by the Board of Directors on March 15, 2000, a copy of which is attached to this proxy statement as Appendix A.

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 public accountants 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 considered and discussed the audited financial statements with management and our independent public accountants. The committee has also discussed with our independent public accountants 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 the independent public accountants required by Independence Standards Board Standard No. 1, Independence Discussions with Audit Committees, as currently in effect, and has discussed with the independent public accountants their independence.

Based upon the reports 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, 2000.

AUDIT COMMITTEE

William A. McMinn
Sam L. Barker, Ph.D.
Patricia M. Cloherty

The foregoing report of the audit committee shall not 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 information by reference, and shall not otherwise be deemed filed under such acts.

EXECUTIVE COMPENSATION

EXECUTIVE OFFICERS

The executive officers of the Company and their ages and positions are listed below.

NAME - - - - -	AGE ---	POSITION WITH THE COMPANY -----
Arthur T. Sands, M.D., Ph.D.	39	President and Chief Executive Officer and Director
Julia P. Gregory	48	Executive Vice President and Chief Financial Officer
Jeffrey L. Wade, J.D.	36	Executive Vice President and General Counsel
James R. Piggott, Ph.D.	46	Senior Vice President of Pharmaceutical Biology
Randall B. Riggs	34	Senior Vice President of Business Development
Brian P. Zambrowicz, Ph.D.	38	Senior Vice President of Genomics
Walter F. Colbert	51	Vice President of Human Resources
Carol L. Hensley	37	Vice President of Corporate Communications
Lance K. Ishimoto, Ph.D., J.D.	41	Vice President of Intellectual Property
Christophe Person	34	Vice President of Informatics

Information regarding the business experience of Dr. Sands is set forth above under the heading "Election of Director--Current and Continuing Directors."

Julia P. Gregory has been our Executive Vice President and Chief Financial Officer since February 2000. From 1998 to February 2000, Ms. Gregory served as the Head of Investment Banking for Punk, Ziegel & Company, L.P. and, from 1996 to February 2000, as the Head of the firm's Life Sciences practice. From 1980 to 1996, Ms. Gregory was an investment banker with Prime Charter Ltd. and then Dillon, Read & Co., Inc., where she represented life sciences companies beginning in 1986. Ms. Gregory is a member of the Board of Directors and the Scientific Advisory Board of the Lauder Foundation's Institute for the Study of Aging, Inc. She received her B.A. in International Affairs from George Washington University and her M.B.A. from the Wharton School of the University of Pennsylvania.

Jeffrey L. Wade, J.D. has been our Executive Vice President and General Counsel since February 2000 and was our Senior Vice President and Chief Financial Officer from January 1999 to February 2000. From 1988 through December 1998, Mr. Wade was a corporate securities and finance attorney with the law firm of Andrews & Kurth L.L.P., for the last two years as a partner, where he represented companies in the biotechnology, information technology and energy industries. Mr. Wade is a member of the boards of directors of the Texas Healthcare and

Bioscience Institute and the Texas Life Sciences Foundation. He received his B.A. and J.D. from The University of Texas.

James R. Piggott, Ph.D. has been our Senior Vice President of Pharmaceutical Biology since January 2000. From 1990 through October 1999, Dr. Piggott worked for ZymoGenetics, Inc., a subsidiary of Novo Nordisk, most recently as Senior Vice President--Research Biology. Dr. Piggott's pharmaceutical research experience also includes service at the Smith Kline & French Laboratories Ltd. unit of SmithKline Beecham plc and the G.D. Searle & Co. unit of Monsanto Company. Dr. Piggott received his B.A. and Ph.D. from Trinity College, Dublin.

Randall B. Riggs has been our Senior Vice President of Business Development since February 2000 and served as our Vice President of Business Development from December 1998 to February 2000. From January through November 1998, Mr. Riggs was director of Business Development for the Infectious Disease Business Unit of GENEMEDICINE, INC. From 1992 to January 1998, Mr. Riggs was employed by Eli Lilly and Company, for the last two years as Manager, Corporate Business Development at Eli Lilly's Indianapolis, Indiana headquarters. Before joining Eli Lilly, Mr. Riggs' experience included service as a business analyst for the National Aeronautics and Space Administration and a subsidiary of Amoco Production Company. He received his B.B.A. from Texas A&M University and his M.B.A. from The University of Houston.

Brian P. Zambrowicz, Ph.D. has been our Senior Vice President of Genomics since February 2000. Dr. Zambrowicz served as our Vice President of Research from January 1998 to February 2000 and as Senior Scientist from April 1996 to January 1998. From 1993 to April 1996, Dr. Zambrowicz served as an NIH postdoctoral fellow at The Fred Hutchinson Cancer Center in Seattle, Washington, where he studied gene trapping and gene targeting technology. Dr. Zambrowicz received his B.S. in Biochemistry from the University of Wisconsin. He received his Ph.D. from the University of Washington, where he studied tissue-specific gene regulation using transgenic mice.

Walter F. Colbert has been our Vice President of Human Resources since December 2000. From September 1997 to December 2000, Mr. Colbert was Vice President, Human Resources and Public Affairs at the Sony Technology Center--San Diego of Sony Electronics Inc. From September 1995 to September 1997, Mr. Colbert served as Vice President, Human Resources for The NutraSweet Kelco Company, Monsanto Company's food ingredients business unit. From 1976 through September 1995, Mr. Colbert served in a variety of human resources positions in the United States and Europe with Ford Motor Company and Monsanto Company. He received his B.A. in Political Science from Stanford University and his M.A. in International Affairs from The Fletcher School of Law and Diplomacy at Tufts University.

Carol L. Hensley has been our Vice President of Corporate Communications since January 2001. From November 1993 through December 2000, Ms. Hensley worked for Enron Corp., where she was Vice President of Marketing and Communications for Azurix, Enron's water infrastructure and technology company, and a Director in the Enron Corp. Public Relations Department. From 1986 to 1993, Ms. Hensley served in a variety of public relations positions for Anadarko Petroleum Corporation, Transco Energy Company and Blue Bell Creameries. She received her B.J. from the University of Texas.

Lance K. Ishimoto, J.D., Ph.D. has been our Vice President of Intellectual Property since July 1998. From 1994 to July 1998, Dr. Ishimoto was a biotechnology patent attorney at the Palo Alto, California office of Pennie & Edmonds LLP. Dr. Ishimoto received his B.A. and Ph.D. from the University of California at Los Angeles, where he studied molecular mechanisms of virus assembly and the regulation of virus ultrastructure. After receiving his Ph.D., Dr. Ishimoto served as an NIH postdoctoral fellow at University of Washington School of Medicine. He received his J.D. from Stanford University.

Christophe Person has been our Vice President of Informatics since November 1999 and served as our Director of Informatics from May 1997 to November 1999. From 1994 to May 1997, Mr. Person was the Senior Scientific Programmer for the Center for Theoretical Neurosciences at Baylor College of Medicine. From 1990 to 1994, Mr. Person was the CEPH Database Manager at the Human Polymorphism Studies Center in Paris, France. Mr. Person received his degree in Electrical Engineering from Groupe ESTE/ESIEE (Ecole Supérieure de Technologie Electronique/Ecole Supérieure d'Ingenieurs en Electrotechnique et Electronique).

SUMMARY COMPENSATION TABLE

The following table presents summary information for the years ended December 31, 1999 and 2000 regarding the compensation of each of our five most highly compensated executive officers.

NAME AND POSITION	ANNUAL COMPENSATION			LONG-TERM COMPENSATION AWARDS	ALL OTHER COMPENSATION(1)
	YEAR	SALARY	BONUS	SECURITIES UNDERLYING OPTIONS	
Arthur T. Sands, M.D., Ph.D. President, Chief Executive Officer and Director	2000	\$270,833	\$175,812	555,000	\$78,824
	1999	\$200,000	\$ 50,000	--	
Julia P. Gregory(2) Executive Vice President and Chief Financial Officer	2000	\$179,615	\$ 75,000	555,000	\$17,829
Jeffrey L. Wade, J.D. Executive Vice President and General Counsel	2000	\$198,333	\$ 56,277	135,000	\$ 4,778
	1999	\$170,000	\$ 25,000	390,000	
James R. Piggott, Ph.D.(3) Senior Vice President of Pharmaceutical Biology	2000	\$191,666	\$ 48,800	360,000	\$ 8,739
Brian P. Zambrowicz, Ph.D. Senior Vice President of Genomics	2000	\$206,250	\$ 47,953	210,000	\$ 4,778
	1999	\$175,000	\$ --	--	

- (1) Other compensation during 2000 includes the following amounts in respect of company matching contributions under our 401(k) plan, company-paid premiums for group term and split-dollar life insurance, and payment or reimbursement of relocation expenses:

	COMPANY 401(k) MATCHING CONTRIBUTION	COMPANY-PAID GROUP TERM LIFE INSURANCE PREMIUMS	COMPANY-PAID SPLIT-DOLLAR LIFE INSURANCE PREMIUMS	RELOCATION EXPENSES
Arthur T. Sands, M.D., Ph.D.	\$4,250	\$660	\$73,914	\$ --
Julia P. Gregory	\$ --	\$440	\$ --	\$17,389
Jeffrey L. Wade, J.D.	\$4,250	\$528	\$ --	\$ --
James R. Piggott, Ph.D.	\$4,250	\$484	\$ --	\$ 4,005
Brian P. Zambrowicz, Ph.D.	\$4,250	\$528	\$ --	\$ --

The company-paid life insurance premiums in the foregoing table reflect payments for group term life policies maintained for the benefit of all employees, with exception of the additional premiums paid under a split-dollar life insurance arrangement for Dr. Sands under his employment agreement with us. Upon the death of both Dr. Sands, we will receive cash under the policy in an amount equal to the aggregate premiums we paid for the policy, and the balance of the proceeds will be paid to the trust that is the beneficiary of the policy.

- (2) Ms. Gregory joined us in February 2000. Her base salary for 2000 reflects compensation at an annualized rate of \$200,000 for the portion of the year she was an employee.
- (3) Dr. Piggott joined us in January 2000. His base salary for 2000 reflects compensation at an annualized rate of \$200,000 for the portion of the year he was an employee.

OPTION GRANTS IN 2000

The following table presents each grant of stock options in 2000 to the individuals named in the summary compensation table.

NAME	NUMBER OF SECURITIES UNDERLYING OPTIONS GRANTED	PERCENTAGE OF TOTAL OPTIONS GRANTED IN 2000	EXERCISE PRICE PER SHARE	EXPIRATION DATE	POTENTIAL REALIZABLE VALUE AT ASSUMED ANNUAL RATES OF STOCK PRICE APPRECIATION FOR OPTION TERM	
					5%	10%
Arthur T. Sands, M.D., Ph.D. ...	555,000	12.5%	\$2.50	2/3/2010	\$872,591	\$2,211,318
Julia P. Gregory.....	555,000	12.5%	\$2.50	2/8/2010	\$872,591	\$2,211,318
Jeffrey L. Wade, J.D.	135,000	3.0%	\$2.50	2/3/2010	\$212,252	\$ 537,888
James R. Piggott, Ph.D.	270,000	6.1%	\$2.50	1/19/2010	\$424,504	\$1,075,776
	90,000	2.0%	\$2.50	2/3/2010	\$141,501	\$ 358,592
Brian P. Zambrowicz, Ph.D.	210,000	4.7%	\$2.50	2/3/2010	\$330,170	\$ 836,715

All of the options in the foregoing table were issued prior to our April 2000 initial public offering and give effect to a three-for-one split of our common stock on April 5, 2000. The exercise price of each option was equal to the fair market value of our common stock as determined by our Board of Directors on the date of grant. In determining the fair market value of our common stock on the date of grant our Board of Directors considered many factors, including:

- o the option grants involved illiquid securities in a nonpublic company;
- o prices of preferred stock issued by us to outside investors in arm's-length transactions;
- o the rights, preferences and privileges of the preferred stock over the common stock;
- o our performance and operating results at the time of grant;
- o our stage of development and business strategy; and
- o the likelihood of achieving a liquidity event for the shares of common stock underlying these options, such as an initial public offering or a sale of our company.

The exercise price for each option may be paid in cash, promissory notes, 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.

The potential realizable value of these options is calculated based on the ten-year term of the option at the time of grant. Stock price appreciation of 5% and 10% is assumed pursuant to rules promulgated by the Securities and Exchange Commission and does not represent our prediction of our stock price performance.

Percentages shown under "Percentage of Total Options Granted in 2000" are based on an aggregate of 4,445,950 options granted to our employees, consultants and directors under our stock option plans during 2000.

AGGREGATED OPTION EXERCISES IN 2000 AND OPTION VALUES AT DECEMBER 31, 2000

The following table presents information about:

- o option exercises in 2000 by each of the individuals listed in the summary compensation table; and

- o the number and value of the shares of common stock underlying unexercised options that are held by each of the individuals listed in the summary compensation table as of December 31, 2000.

Amounts shown under the column "Value Realized" are based on the market price of our common stock on the date of exercise, without taking into account any taxes that may be payable in connection with the transaction, less the exercise price paid for the purchased shares.

Amounts shown under the column "Value of Unexercised In-the-Money Options at December 31, 2000" are based on the closing price of our common stock on The Nasdaq National Market on December 29, 2000 of \$16.625 per share, without taking into account any taxes that may be payable in connection with the transaction, less the exercise price payable for these shares.

NAME	SHARES ACQUIRED ON EXERCISE	VALUE REALIZED	NUMBER OF SECURITIES UNDERLYING UNEXERCISED OPTIONS AT DECEMBER 31, 2000		VALUE OF UNEXERCISED IN-THE-MONEY OPTIONS AT DECEMBER 31, 2000	
			EXERCISABLE	UNEXERCISABLE	EXERCISABLE	UNEXERCISABLE
Arthur T. Sands, M.D., Ph.D. ...	--	\$ --	1,720,455	754,545	\$26,325,143	\$10,683,993
Julia P. Gregory.....	24,000	\$439,125	91,622	439,378	\$ 1,294,161	\$ 6,206,214
Jeffrey L. Wade, J.D.	2,000	\$ 29,125	239,714	283,286	\$ 3,385,960	\$ 4,001,415
James R. Piggott, Ph.D.	--	\$ --	36,562	323,438	\$ 516,438	\$ 4,568,562
Brian P. Zambrowicz, Ph.D.	--	\$ --	563,453	336,547	\$ 8,305,429	\$ 4,755,271

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. Under the agreement, Dr. Sands received an initial base salary of \$200,000 a year, subject to adjustment, with an annual discretionary bonus based upon specific objectives to be determined by the compensation committee. Dr. Sands' current annual salary is \$400,000. The employment agreement is at-will and contains a non-competition agreement. The agreement also provides that if we terminate Dr. Sands' employment without cause or Dr. Sands voluntarily terminates his employment for good reason, we will pay him his then-current salary for 12 months.

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. Under the agreement, Ms. Gregory received an initial base salary of \$200,000 a year, subject to adjustment, with an annual discretionary bonus based upon specific objectives to be determined by the compensation committee. Ms. Gregory's current annual salary is \$260,000. The employment agreement is at-will and contains a non-competition agreement. The agreement also provides that during the first year, if we terminate Ms. Gregory's employment without cause or Ms. Gregory voluntarily terminates her employment for good reason, we will pay her then-current salary for twelve months; if we terminate Ms. Gregory's employment without cause or Ms. Gregory voluntarily terminates her employment for good reason after such time, we will pay her then-current salary for six months. If any such termination follows a change in control of our company, we will pay Ms. Gregory her then-current salary for 12 months.

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 received an initial base salary of \$170,000 a year, subject to adjustment, with an annual discretionary bonus based upon specific objectives to be determined by the compensation committee. Mr. Wade's current annual salary is \$250,000. The employment agreement is at-will and contains a non-competition agreement. The agreement also provides that if we terminate Mr. Wade's employment without cause or Mr. Wade voluntarily terminates his employment for good reason, we will pay him his then-current salary for six months. If any such termination follows a change in control of our company, we will pay Mr. Wade his then-current salary for 12 months.

In December 1998, we entered into an employment agreement with Randall B. Riggs to serve as our Vice President of Business Development. In February 2000, Mr. Riggs was named Senior Vice President of Business Development. Under the agreement, Mr. Riggs received an initial base salary of \$160,000 a year, subject to adjustment, with an annual discretionary bonus based upon specific objectives to be determined by the compensation committee. Mr. Riggs's current annual salary is \$234,000. The employment agreement is at-will and contains a non-competition agreement. The agreement also provides that if we terminate Mr. Riggs's employment without cause or Mr. Riggs voluntarily terminates his employment for good reason, we will pay him his then-current salary for six months. If any such termination follows a change in control of our company, we will pay Mr. Riggs his then-current salary for 12 months.

In January 2000, we entered into an employment agreement with James R. Piggott, Ph.D. to serve as our Senior Vice President of Pharmaceutical Biology. Under the agreement, Dr. Piggott received an initial base salary of \$200,000 a year, subject to adjustment, with an annual discretionary bonus based upon specific objectives to be determined by the compensation committee. Dr. Piggott's current annual salary is \$250,000. The employment agreement is at-will and contains a non-competition agreement. The agreement also provides that if we terminate Dr. Piggott's employment without cause or Dr. Piggott voluntarily terminates his employment for good reason, we will pay him his then-current salary for six months. If any such termination follows a change in control of our company, we will pay Dr. Piggott his then-current salary for 12 months.

In February 2000, we entered into an employment agreement with Brian P. Zambrowicz, Ph.D., our Senior Vice President of Genomics. Under the agreement, Dr. Zambrowicz received an initial base salary of \$200,000 a year, subject to adjustment, with an annual discretionary bonus based upon specific objectives to be determined by the compensation committee. Dr. Zambrowicz's current annual salary is \$250,000. The employment agreement is at-will and contains a non-competition agreement. The agreement also provides that if we terminate Dr. Zambrowicz employment without cause or Dr. Zambrowicz voluntarily terminates his employment for good reason, we will pay him his then-current salary for six months. If any such termination follows our change in control, we will pay Dr. Zambrowicz his then-current salary for 12 months.

REPORT OF THE COMPENSATION COMMITTEE OF THE BOARD OF DIRECTORS

The compensation committee of our Board of Directors currently consists of Sam L. Barker, Ph.D. and Patricia M. Cloherty, neither of whom is an officer or employee of the company. Two former members of our Board of Directors, Stephen J. Banks and Paul Haycock, M.D., served on the committee during 2000 until their respective resignations from our Board of Directors. Dr. Barker was elected as a member of the committee in September 2000.

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

Executive Compensation Policies and Practices

Under the supervision of the compensation committee, our company has developed a compensation policy which is designated 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 officers primarily consists of:

- o a cash salary, which reflects the responsibilities relating to the position and individual performance;
- o variable performance awards payable in cash or stock and tied to the achievement of certain individual and corporate goals and milestones; and
- o long-term stock based incentive awards which strengthen the mutuality of interests between our executive officers and our stockholders.

In determining the level and composition of compensation of each of our executive officers, the compensation committee takes into account various qualitative and quantitative indicators of corporate and individual performance. Although no specific target has been established, the committee generally seeks to set salaries at the median to high end of the range in comparison to peer group companies. In setting such salaries, the committee considers our peer group to be similarly sized companies in the biotechnology industry. This peer group does not necessarily coincide with the companies comprising the Nasdaq Biotechnology Index reflected in the performance graph in this proxy statement. Because our business and technology are continuing to develop, the use of certain traditional performance standards, such as profitability and return on equity, are not currently appropriate in evaluating the performance of our executive officers. Consequently, in evaluating the performance of management, the committee takes into consideration such factors as our achievement of specified milestones and goals with respect to our revenues, new business development, and our research and development programs. In addition, the committee recognizes performance and achievements that are more difficult to quantify, such as the successful supervision of major corporate projects, demonstrated leadership ability, and contributions to the industry and community development.

Base Compensation

Base compensation is established through negotiation between the company and the executive officer at the time the executive 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 committee. When establishing or reviewing base compensation levels for executive officers, the 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. No pre-determined weights are given to any one of these factors. The base salaries for the executive officers generally, and the Chief Executive Officer specifically, for 2000 were near the median level in comparison to our peer group companies. In establishing base compensation for 2000, the committee included in its evaluation the significant progress made by the company in 1999, including the substantial increase in our revenues as compared to 1998, the establishment of several significant new collaborations, and the continuing advancement of our research and development programs.

Incentive Compensation

In addition to base compensation, the committee may award cash bonuses and option grants or other stock-based awards under our 2000 Equity Incentive Plan to chosen executive officers depending on the extent to which certain defined personal and corporate performance goals are achieved. These performance goals are the same as those discussed generally above. In determining bonus and stock option awards for 2000, the committee included in its evaluation the very significant progress made by the company in 2000, including the substantial increase in our revenues as compared to 1999, the establishment of a large number of significant new collaborations and two significant drug discovery alliances, the establishment of a strong capital base from which to execute our business plan, and the continuing advancement of our research and development programs.

All of our employees, including our executive 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 further the mutuality of interest between 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 such awards are granted to an executive 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 executive officer's other compensation. While the committee does not adhere to any firmly established formulas or schedules for the issuance of awards such as options or restricted stock, the committee 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 2000, the committee approved stock option grants to substantially all then-current employees, including all executive officers. In making such grants, the committee considered corporate and individual performance over several years preceding the grant date and information regarding stock option grants made by privately-held companies in the biotechnology industry, including information relating to numbers of shares subject to outstanding stock options in the aggregate and for specific positions, relative to shares outstanding, and exercise prices of options, relative to the conversion prices of preferred stock financings. The committee also considered the number of shares of our common stock then subject to outstanding stock options in the aggregate and for each employee, and the exercise prices of such options, in determining the number of shares for which options were granted in February 2000.

Compensation of the Chief Executive Officer

The annual base salary of Arthur T. Sands, M.D., Ph.D., our President and Chief Executive Officer of the Company, was initially set at \$200,000 pursuant to an employment agreement effective in October 1999, reflecting his salary in effect prior to the signing of that agreement, and was increased by \$50,000 (or approximately 25 percent) to \$250,000 in February 2000 in recognition of the company's progress in 1999. In October 2000, the committee increased Dr. Sands' base salary by \$150,000 (or approximately 60 percent) to \$400,000 to keep pace with salaries being paid to other chief executive officers of similar companies and in recognition of the company's very substantial progress in 2000. The committee awarded a bonus to Dr. Sands for 2000 in the amount of \$175,812 on the basis of these achievements.

The committee granted a stock option to Dr. Sands in February 2000, at the same time grants were made to other employees. The stock option entitles Dr. Sands to purchase an aggregate of 555,000 shares of common stock at an exercise price of \$2.50 per share. In making the option grant to Dr. Sands, the committee considered the factors described above with respect to the February 2000 option grants generally.

Section 162(m)

Section 162(m) of the Internal Revenue Code places a \$1 million cap per executive on the deductible compensation that can be paid to certain executives of publicly-traded corporations. Amounts that qualify as "performance based" compensation under Section 162(m)(4)(c) of the Code are exempt from the cap and do not count toward the \$1 million limit. Generally, stock options will qualify as performance based compensation. The committee has discussed and considered and will continue to evaluate the potential impact of Section 162(m) on the company in making compensation determinations, but has not established a set policy with respect to future compensation determinations.

COMPENSATION COMMITTEE

Sam L. Barker, Ph.D.
Patricia M. Cloherty

The foregoing report of the compensation committee shall not 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 information by reference, and shall not otherwise be deemed filed under such acts.

PERFORMANCE GRAPH

The following performance graph compares the performance of our common stock to the Nasdaq Composite Index and the Nasdaq Biotechnology Index for the period beginning April 7, 2000, the date of our initial public offering, and ending December 31, 2000. The graph assumes that the value of the investment in our common stock and each index was \$100 at April 7, 2000, and that all dividends were reinvested.

[GRAPH]

	APRIL 7, 2000 -----	DECEMBER 31, 2000 -----
Lexicon Genetics Incorporated	100	76
Nasdaq Composite Index	100	56
Nasdaq Biotechnology Index	100	96

The foregoing stock price performance comparisons shall not 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 such comparisons by reference, and shall not otherwise be deemed filed under such acts.

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 16, 2001. 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 16, 2001. 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 CAROL L. HENSLEY, VICE PRESIDENT OF CORPORATE COMMUNICATIONS, LEXICON GENETICS INCORPORATED, 4000 RESEARCH FOREST DRIVE, THE WOODLANDS, TEXAS 77381.

By Order of the Board of Directors,

Jeffrey L. Wade
Secretary

March 16, 2001
The Woodlands, Texas

LEXICON GENETICS INCORPORATED

AUDIT COMMITTEE CHARTER

GENERAL PURPOSE

The Audit Committee of Lexicon Genetics Incorporated (the "Company") is appointed by the Board of Directors of the Company to assist the Board of Directors and to perform an oversight function with respect to the following:

- (1) discussing the financial statements, internal controls and financial processes of the Company with management and the external auditor and monitoring the integrity of the financial statements of the Company;
- (2) monitoring actions taken by the Company to comply with its internal controls and policies as well as external accounting, legal and regulatory requirements;
- (3) reviewing disclosures regarding the independence of the Company's external auditors; and
- (4) evaluating the independence and performance of the Company's internal and external auditors.

SELECTION OF MEMBERS OF THE AUDIT COMMITTEE

The members of the Audit Committee shall meet the independence and experience requirements of The Nasdaq Stock Market, Inc. (as then required and in effect). If the Company's securities are listed on any other exchange, the Audit Committee shall meet the independence and experience requirements of such exchange. The members of the Audit Committee shall be appointed by the Board of Directors on the recommendation of the Chairman of the Board of Directors.

POWERS

The Audit Committee has the authority, at the Company's expense, to retain professional advisors, including without limitation special legal, accounting or other consultants, to advise the Audit Committee, as the Audit Committee deems necessary or advisable in connection with the exercise of its powers and responsibilities as set forth in this Audit Committee Charter, all on such terms as the Audit Committee deems necessary or advisable.

The Audit Committee may request any officer or employee of the Company or the Company's outside counsel or independent auditor to attend a meeting of the Audit Committee or to meet with any members of, or consultants to, the Audit Committee.

RESPONSIBILITIES

The Audit Committee shall make regular reports to the Board of Directors.

In connection with the general purpose, powers and responsibilities set forth above, the Audit Committee shall also have the responsibilities listed below.

1. Recommend to the Board of Directors the appointment of the independent auditor, which firm is ultimately accountable to the Audit Committee and the Board of Directors.
2. Approve the fees to be paid to the independent auditor.

3. Receive periodic reports from the independent auditor regarding the auditor's independence consistent with Independence Standards Board Standard 1, discuss such reports with the auditor, and if so determined by the Audit Committee, take or recommend that the full Board of Directors take appropriate action to oversee the independence of the auditor.
4. Evaluate together with the Board of Directors the performance of the independent auditor and, if so determined by the Audit Committee, recommend that the Board of Directors replace the independent auditor.
5. Review the appointment and any replacement of the senior internal auditing executive.
6. Review significant reports to management provided by the internal auditing department and management's responses.
7. Meet with the independent auditor prior to the audit to review the scope, planning and staffing of the audit.
8. Review and discuss with management the annual audited financial statements including major issues regarding accounting and auditing principles and practices as well as the adequacy of internal controls that could significantly affect the Company's financial statements.
9. Review an analysis prepared by management and the independent auditor of significant financial reporting issues and judgments made in connection with the preparation of the Company's financial statements.
10. At any meeting of the Audit Committee duly called to review the Company's quarterly financial statements, review with management and the independent auditor the Company's quarterly financial statements prior to the filing of that quarter's Form 10-Q.
11. Meet periodically with management to review the Company's major financial risk exposures and the actions management has taken to monitor and control such exposures.
12. Review major changes to the Company's auditing and accounting principles and practices as suggested by the independent auditor, internal auditors or management.
13. Obtain from the independent auditor assurance that Section 10A (relating to the detection of illegal acts that may have a direct and material effect on the determination of financial statement accounts) of the Securities Exchange Act of 1934 has not been implicated.
14. Obtain reports from management, the Company's senior internal auditing executive and the independent auditor that the Company's subsidiary and foreign affiliated entities are in conformity with applicable legal requirements and the Company's internal policies.
15. Discuss with the independent auditor the matters required to be discussed by Statement on Auditing Standards No. 61 relating to the conduct of the audit.
16. Review with the independent auditor any problems or difficulties the auditor may have encountered and any management letter provided by the auditor and the Company's response to that letter. Such review should include:
 - (a) Any difficulties encountered in the course of the audit work, including any restrictions on the scope of activities or access to required information.
 - (b) Any changes required in the planned scope of the internal audit.

- (c) The internal audit department responsibilities, budget and staffing.
17. Monitor actions taken by the Company in response to any letters or reports to management provided by the internal auditors or independent auditors.
 18. Prepare any report of the Audit Committee required by the rules of the Securities and Exchange Commission to be included in the Company's annual proxy statement.
 19. Review the Company's policies with respect to conflicts of interest.
 20. Advise the Board of Directors with respect to the Company's policies and procedures regarding compliance with its internal policies as well as applicable laws and regulations, including without limitation with respect to maintaining books, records and accounts and a system of internal accounting controls in accordance with Section 13(b)(2) of the Securities Exchange Act of 1934.
 21. Review with the Company's general counsel legal matters that may have a material impact on the financial statements, the Company's compliance policies and any material reports or inquiries received from regulators or governmental agencies.
 22. Meet at least annually with the chief financial officer, the senior internal auditing executive and the independent auditor in separate executive sessions.
 23. Review and reassess the adequacy of this Audit Committee Charter annually and recommend any proposed changes to the Board of Directors for approval.

LIMITATION ON RESPONSIBILITIES AND POWERS

While the Audit Committee has the responsibilities and powers set forth above in this Audit Committee Charter, it is not the duty or responsibility of the Audit Committee to:

- (1) plan or conduct audits;
- (2) determine that the Company's financial statements are complete and accurate and are in accordance with generally accepted accounting principles (this determination shall remain the responsibility of management and the independent auditor);
- (3) conduct investigations;
- (4) resolve disagreements, if any, between management and the independent auditor; or
- (5) assure compliance with the Company's internal policies, accounting rules and other applicable laws and regulations.

LEXICON GENETICS INCORPORATED

ANNUAL MEETING OF STOCKHOLDERS
APRIL 18, 2001

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 offices of the Company, 4000 Research Forest Drive, The Woodlands, Texas, on April 18, 2001, 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)

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

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

- o "FOR" THE ELECTION OF THE NOMINEE FOR CLASS 1 DIRECTOR; AND
- o "FOR" THE PROPOSAL TO RATIFY THE APPOINTMENT OF ARTHUR ANDERSEN LLP AS THE COMPANY'S INDEPENDENT PUBLIC ACCOUNTANTS FOR THE FISCAL YEAR ENDING DECEMBER 31, 2001.

1. Election of Class 1 Director

FOR the nominee listed below WITHHOLD AUTHORITY to vote for the nominee listed below

Robert J. Lefkowitz, M.D.

2. Ratification of the appointment of Arthur Andersen LLP as the Company's independent public accountants for the fiscal year ending December 31, 2001.

FOR AGAINST ABSTAIN

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

DATED: _____

(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.