

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

SCHEDULE 14A
(RULE 14a-101)

SCHEDULE 14A INFORMATION
Proxy Statement Pursuant to Section 14(a) of the Securities
Exchange Act of 1934

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 17 CFR 240.14a-11(c) of 17 CFR 240.14a-12.

ENZO BIOCHEM, INC.
(Name of Registrant as Specified in the 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)(4) 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:

ENZO BIOCHEM, INC.
60 EXECUTIVE BOULEVARD
FARMINGDALE, NEW YORK 11735
(631) 755-5500

To the Shareholders of Enzo Biochem, Inc.:

NOTICE IS HEREBY GIVEN that the Annual Meeting of Shareholders of Enzo Biochem, Inc., a New York corporation (the "Company"), will be held at The Yale Club of New York, 50 Vanderbilt Avenue, Grand Ballroom, 20th Floor, New York, New York, on January 14, 2004, 9:00 a.m. local time (the "Annual Meeting"), for the following purposes:

1. To elect Shahram K. Rabbani and Irwin C. Gerson as Class I Directors for a term of three (3) years or until their respective successors are elected and qualified;
2. To ratify the appointment of Ernst & Young LLP as the independent auditors for the Company for the Company's fiscal year ending July 31, 2004; and
3. To transact such other business as may properly come before the Annual Meeting or any adjournment thereof.

The close of business on November 24, 2003 has been fixed as the record date for the determination of shareholders entitled to notice of and to vote at the Annual Meeting. The transfer books of the Company will not be closed.

All shareholders are cordially invited to attend the Annual Meeting. Please note that you will be asked to present valid picture identification, such as a driver's license or passport, in order to attend the Annual Meeting. The use of cameras, recording devices and other electronic devices will be prohibited at the Annual Meeting.

Whether or not you expect to attend, you are requested to sign, date and return the enclosed proxy promptly. Shareholders who execute proxies retain the right to revoke them at any time prior to the voting thereof by filing written notice of such revocation with the Secretary of the Company, by submission of a duly executed proxy bearing a later date or by voting in person at the Annual Meeting of Shareholders. Attendance at the Annual Meeting will not in and of itself constitute revocation of a proxy. Any written notice revoking a proxy should be sent to Enzo Biochem, Inc., 60 Executive Boulevard, Farmingdale, New York 11735, Attention: Shahram K. Rabbani, Secretary. A return envelope which requires no postage if mailed in the United States is enclosed for your convenience.

By Order of the Board of Directors,

Shahram K. Rabbani, SECRETARY

Farmingdale, New York
November 26, 2003

ENZO BIOCHEM, INC.
60 EXECUTIVE BOULEVARD
FARMINGDALE, NEW YORK 11735
(631) 755-5500

PROXY STATEMENT

ANNUAL MEETING OF SHAREHOLDERS
TO BE HELD ON JANUARY 14, 2004

This Proxy Statement is furnished in connection with the solicitation, by the Board of Directors of Enzo Biochem, Inc., a New York corporation (the "Company"), of proxies in the enclosed form for the Annual Meeting of Shareholders to be held at The Yale Club of New York, 50 Vanderbilt Avenue, Grand Ballroom, 20th Floor, New York, New York, on January 14, 2004 at 9:00 a.m. local time (the "Annual Meeting"), and for any adjournment or adjournments thereof, for the purposes set forth in the preceding Notice of Annual Meeting of Shareholders. The form of proxy solicited by the Board of Directors affords stockholders the ability to specify a choice among approval of, disapproval of, or abstention with respect to, each matter acted upon at the Annual Meeting. The persons named in the enclosed form of proxy will vote the shares for which they are appointed in accordance with the directions of the shareholders appointing them. In the absence of such directions, such shares will be voted FOR Proposals 1 and 2 listed below and, in their best judgment, will be voted on any other matters as may come before the Annual Meeting. Any shareholder giving a proxy has the power to revoke the same at any time before it is voted by filing written notice of such revocation with the Secretary of the Company, by submission of a duly executed proxy bearing a later date or by voting in person at the Annual Meeting. Attendance at the Annual Meeting will not in and of itself constitute revocation of a proxy. Any written notice revoking a proxy should be sent to Enzo Biochem, Inc., 60 Executive Boulevard, Farmingdale, New

York 11735, Attn.: Shahram K. Rabbani, Secretary. A return envelope which requires no postage if mailed in the United States is enclosed for your convenience.

The expense of the solicitation of proxies for the meeting, including the cost of mailing, will be borne by the Company. In addition to mailing copies of the enclosed proxy materials to stockholders, the Company may request persons, and reimburse them for their expenses with respect thereto, who hold stock in their names or custody or in the names of nominees for others to forward copies of such materials to those persons for whom they hold stock of the Company and to request authority for the execution of the proxies. In addition to the solicitation of proxies by mail, it is expected that some of the officers, directors and regular employees of the Company, without additional compensation, may solicit proxies on behalf of the Board of Directors by telephone, telefax, and personal interview.

The principal executive offices of the Company are located at 60 Executive Boulevard, Farmingdale, New York 11735. The approximate date on which this Proxy Statement and the accompanying form of proxy will first be sent or given to the Company's shareholders is November 26, 2003.

VOTING SECURITIES

Only holders of shares of common stock, par value \$.01 per share (the "Common Stock"), of the Company of record as of the close of business on November 24, 2003 are entitled to vote at the Annual Meeting (the "Record Date"). On the Record Date there were issued and outstanding 30,007,298 shares of Common Stock. Each outstanding share of Common Stock is entitled to one (1) vote upon all matters to be acted upon at the Annual Meeting. The holders of a majority of the outstanding shares of Common Stock as of the Record Date shall constitute a quorum.

The election of a nominee for director requires a plurality (I.E., an excess of votes over those cast for an opposing candidate) in the event that more than one candidate is running for a vacancy. An affirmative vote of the majority of the votes cast is required for approval of Proposal 2 and all other matters submitted to the shareholders at the Annual Meeting. Abstentions and broker non-votes are not counted as votes cast on any matter to which they relate and will have no effect on the outcome of the vote. A broker non-vote occurs when a broker or other nominee does not have discretionary authority and has not received instructions with respect to a particular proposal. Proxy ballots are received and tabulated by the Company's transfer agent and certified by the inspector of election.

STOCK OWNERSHIP OF PRINCIPAL SHAREHOLDERS AND MANAGEMENT

Set forth below is information concerning stock ownership of all persons known by the Company to own beneficially 5% or more of the shares of Common Stock of the Company, the executive officers named under "Executive Compensation of Directors and Executive Officers," all directors, and all directors and executive officers of the Company as a group based upon the number of outstanding shares of Common Stock as of the close of business on the Record Date. Except as otherwise indicated, each of the persons named has sole voting and investment power with respect to the shares shown.

<TABLE> <CAPTION> NAME AND ADDRESS OF BENEFICIAL OWNER	AMOUNT AND NATURE OF BENEFICIAL OWNERSHIP (1)	PERCENT OF CLASS (2)
-----	-----	-----
<S> Elazar Rabbani, Ph.D.	<C> 2,063,452 (3)	<C> 6.7%
Shahram K. Rabbani	2,085,779 (4)	6.8%
Barry W. Weiner	1,241,625 (5)	4.1%
Dean Engelhardt, Ph.D.	244,333 (6)	*
Norman E. Kelker, Ph.D.	135,809 (7)	*
John J. Delucca	45,086 (8)	*
Irwin C. Gerson	24,806 (9)	*
Melvin F. Lazar, CPA	13,875 (10)	*
John B. Sias	160,268 (11)	*
Stanford S. Warshawsky	28,875 (12)	*

J. Morton Davis	2,828,444 (13)	9.4%
Salomon Smith Barney Holdings Inc. and Citigroup Inc.	1,796,198 (14)	6.0%
All directors and executive officers as a group (13 persons) (15)	6,326,717 (16)	19.7%

</TABLE>

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* Less than 1%.

- (1) Except as otherwise noted, all shares of Common Stock are beneficially owned and the sole investment and voting power is held by the persons named, and such persons' address is c/o Enzo Biochem, Inc., 60 Executive Boulevard, Farmingdale, New York 11735.
- (2) Based upon 30,007,298 shares of Common Stock of the Company outstanding as of the close of business on the Record Date.
- (3) Includes (i) 577,409 shares of Common Stock issuable upon the exercise of options which are exercisable within 60 days from the date hereof, (ii) 3,304 shares of Common Stock held in the name of Dr. Rabbani as custodian for certain of his children and (iii) 2,065 shares of Common Stock held in the name of Dr. Rabbani's wife as custodian for certain of their children. Does not include 146,344 shares of Common Stock issuable upon the exercise of options which are not exercisable within 60 days from the date hereof. Includes 2,600 shares of Common Stock held in the Company's 401(k) plan.
- (4) Includes (i) 577,409 shares of Common Stock issuable upon the exercise of options which are exercisable within 60 days from the date hereof, (ii) 614 shares of Common Stock held in the name of Mr. Rabbani's son and (iii) 1,671 shares of Common Stock that Mr. Rabbani holds as custodian for certain of his nephews. Does not include 146,344 shares of Common Stock issuable upon the exercise of options which are not exercisable within 60 days from the date hereof. Includes 2,566 shares of Common Stock held in the Company's 401(k) plan.

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- (5) Includes (i) 494,286 shares of Common Stock issuable upon the exercise of options which are exercisable within 60 days from the date hereof and (ii) 3,469 shares of Common Stock which Mr. Weiner holds as custodian for certain of his children. Does not include 146,344 shares of Common Stock issuable upon the exercise of options which are not exercisable within 60 days from the date hereof. Includes 2,607 shares of Common Stock held in the Company's 401(k) plan.
- (6) Includes 62,622 shares of Common Stock issuable upon the exercise of options which are exercisable within 60 days from the date hereof. Does not include 21,039 shares of Common Stock issuable upon the exercise of options which are not exercisable within 60 days from the date hereof. Includes 2,588 shares of Common Stock held in the Company's 401(k) plan.
- (7) Includes 24,506 shares of Common Stock issuable upon the exercise of options which are exercisable within 60 days from the date hereof. Does not include 13,256 shares of Common Stock issuable upon the exercise of options which are not exercisable within 60 days from the date hereof. Includes 2,549 shares of Common Stock held in the Company's 401(k) plan.
- (8) Includes 45,086 shares of Common Stock issuable upon the exercise of options which are exercisable within 60 days from the date hereof. Does not include 12,009 shares of Common Stock issuable upon the exercise of options which are not exercisable within 60 days from the date hereof.
- (9) Includes 24,806 shares of Common Stock issuable upon the exercise of options which are exercisable within 60 days from the date hereof. Does not include 7,875 shares of Common Stock issuable upon the exercise of options which are not exercisable within 60 days from the date hereof.
- (10) Does not include 7,875 shares of Common Stock issuable upon the exercise of options which are not exercisable within 60 days from the date hereof. Includes 7,875 shares of Common Stock owned by Mr. Lazar's wife and 3,000 shares of Common Stock held in the name of a defined benefit plan for which Mr. Lazar is the sole trustee and beneficiary.
- (11) Includes 93,926 shares of Common Stock issuable upon the exercise of options which are exercisable within 60 days from the date hereof. Does not include 12,009 shares of Common Stock issuable upon the exercise of options which are not exercisable within 60 days from the date hereof.

- (12) Includes 7,875 shares of Common Stock issuable upon the exercise of options which are exercisable within 60 days from the date hereof. Does not include 7,875 shares of Common Stock issuable upon the exercise of options which are not exercisable within 60 days from the date hereof.
- (13) Mr. Davis' address is D.H. Blair Investment Banking Corp., 44 Wall Street, New York, New York 10005. Includes (i) 1,370,059 shares of Common Stock owned by D.H. Blair Investment Banking Corp. of which Mr. Davis is the sole shareholder, (ii) 810,332 shares owned by Rosalind Davidowitz, Mr. Davis' wife, (iii) 601,811 shares of Common Stock owned by Engex, Inc., a close-end registered investment company of which Mr. Davis is the Chairman of the Board of Directors, and (iv) 11,550 shares owned by an investment advisor whose principal is Mr. Davis. This information is based solely on Amendment No. 2 to a Schedule 13G filed on February 4, 2003.
- (14) The address of Salomon Smith Barney Holdings Inc. is 388 Greenwich Street, New York, New York 10013, and the address of Citigroup Inc. is 399 Park Avenue, New York, New York 10043. This information is based solely on a Schedule 13G filed on February 7, 2003.
- (15) The total number of directors and executive officers includes three (3) executive officers who were not named under "Executive Compensation of Directors and Executive Officers."
- (16) Includes 2,040,047 shares of Common Stock issuable upon the exercise of options which are exercisable within 60 days from the date hereof. Does not include 560,256 shares of Common Stock issuable upon the exercise of options held by such individuals which are not exercisable within 60 days from the date hereof.

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PROPOSAL 1
ELECTION OF DIRECTORS

The Company has three (3) staggered classes of Directors, each of which serves for a term of three (3) years. At the Annual Meeting, the Company's Class I Directors will be elected to hold office for a term of three (3) years or until their respective successors are elected and qualified. Unless otherwise instructed, the accompanying form of proxy will be voted for the election of the below-listed nominees all of whom currently serve as Class I Directors, to continue such service as Class I Directors. Management has no reason to believe that either of the nominees will not be a candidate or will be unable to serve as a director. However, in the event that the nominees should become unable or unwilling to serve as directors, the form of proxy will be voted for the election of such persons as shall be designated by the Class II and Class III Directors.

CLASS I DIRECTOR NOMINEES TO SERVE UNTIL
THE 2007 ANNUAL MEETING, IF ELECTED:

CLASS I: NEW TERM TO EXPIRE IN 2007

NAME	AGE	YEAR FIRST BECAME A DIRECTOR
Shahram K. Rabbani	51	1976
Irwin C. Gerson	73	2001

THE BOARD OF DIRECTORS OF THE COMPANY RECOMMENDS A VOTE "FOR" THE ELECTION OF THE ABOVE-NAMED NOMINEES. PROXIES SOLICITED BY THE BOARD OF DIRECTORS WILL BE SO VOTED UNLESS SHAREHOLDERS SPECIFY IN THEIR PROXIES A CONTRARY CHOICE.

DIRECTORS WHO ARE CONTINUING IN OFFICE:

CLASS II: TERM TO EXPIRE IN 2005

NAME	AGE	YEAR FIRST BECAME A DIRECTOR
Barry W. Weiner	53	1977
John J. Delucca	60	1982
Melvin F. Lazar, CPA	64	2002

CLASS III: TERM TO EXPIRE IN 2006

<CAPTION> NAME - - - - -	AGE -----	YEAR FIRST BECAME A DIRECTOR -----
<S> Elazar Rabbani, Ph.D.	<C> 59	<C> 1976
John B. Sias	76	1982

DIRECTORS AND EXECUTIVE OFFICERS

The directors and executive officers of the Company are identified in the table below. Each executive officer of the Company serves at the pleasure of the Board of Directors.

<TABLE>
<CAPTION>

NAME - - - - -	AGE -----	YEAR BECAME A DIRECTOR OR EXECUTIVE OFFICER -----	POSITION -----
<S> Elazar Rabbani, Ph.D.	<C> 59	<C> 1976	<C> Chairman of the Board of Directors and Chief Executive Officer
Shahram K. Rabbani	51	1976	Chief Operating Officer, Treasurer, Secretary and Director
Barry W. Weiner	53	1977	President, Chief Financial Officer and Director
Dean Engelhardt, Ph.D.	63	1981	Executive Vice President
Norman E. Kelker, Ph.D.	64	1981	Senior Vice President
Herbert B. Bass	55	1995	Vice President of Finance
Barbara E. Thalenfeld, Ph.D.	63	1995	Vice President, Corporate Development
David C. Goldberg	46	1995	Vice President, Business Development
John J. Delucca	60	1982	Director
John B. Sias	76	1982	Director
Irwin C. Gerson	73	2001	Director
Stanford S. Warshawsky	66	2002	Director
Melvin F. Lazar, CPA	64	2002	Director

BIOGRAPHICAL INFORMATION REGARDING DIRECTORS AND EXECUTIVE OFFICERS

DR. ELAZAR RABBANI Enzo Biochem's founder has served as the Company's Chairman of the Board of Directors and Chief Executive Officer since its inception in 1976. Dr. Rabbani has authored numerous scientific publications in the field of molecular biology, in particular, nucleic acid labeling and detection. He is also the lead inventor of many of the company's pioneering patents covering a wide range of technologies and products. Dr. Rabbani received his Bachelor of Arts degree from New York University in Chemistry and his Ph.D. in Biochemistry from Columbia University. He is a member of the American Society for Microbiology.

SHAHRAM K. RABBANI Chief Operating Officer, Treasurer, Secretary and Director, is a founder and has been with the Company since its inception. He is also President of Enzo Clinical Labs. Mr. Rabbani serves on numerous professional boards, including the New York State Clinical Laboratory Association and Action Long Island. He received a Bachelor of Arts Degree in Chemistry from Adelphi University, located in Long Island, New York.

BARRY W. WEINER President, Chief Financial Officer and Director, is a founder of Enzo Biochem, Inc. He has served as the Company's President since 1996, and previously held the position of Executive Vice President. Before his employment with Enzo, he worked in several managerial and marketing positions at

the Colgate Palmolive Company. Mr. Weiner is a Director of the New York Biotechnology Association. He received his Bachelor of Arts degree in Economics from New York University and a Master of Business Administration in Finance from Boston University.

DR. DEAN ENGELHARDT Executive Vice President, has held this position since July 2000. Since joining the Company in 1981, Dr. Engelhardt has held several other executive and scientific positions within Enzo Biochem. In addition, Dr. Engelhardt has authored many papers in the area of nucleic acid synthesis and protein production and has been a featured presenter at numerous scientific conferences and meetings. He holds a Ph.D. degree in Molecular Genetics from Rockefeller University.

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DR. NORMAN E. KELKER Senior Vice President, has held this position since 1989. Before this, he was the Company's Vice President for Scientific Affairs. Dr. Kelker has authored numerous scientific papers and presentations in the biotechnology field. He is a member of American Society of Microbiology and the American Association of the Advancement of Science. Dr. Kelker received his Ph.D. in Microbiology and Public Health from Michigan State University.

HERBERT B. BASS Vice President of Finance for the Company and is also Senior Vice President of Enzo Clinical Labs. Before his promotion in 1989 to Vice President of Finance, Mr. Bass served as the Corporate Controller of the Company. Mr. Bass has been with The Company since 1986. From 1977 to 1986, Mr. Bass held various positions at Danziger and Friedman, Certified Public Accountants, the most recent of which was audit manager. For the preceding seven (7) years, he held various positions at Berenson & Berenson, Certified Public Accountants. Mr. Bass received a Bachelor of Business Administration degree in Accounting from Bernard M. Baruch College, in New York City.

DR. BARBARA E. THALENFELD Vice President of Corporate Development for Enzo Biochem and Vice President of Clinical Affairs for Enzo Therapeutics, has been employed with the Company since 1982. Dr. Thalenfeld has authored over 20 scientific papers in the areas of molecular biology and genetics, and is a member of the American Society of Gene Therapy and the Drug Development Association. Dr. Thalenfeld received her Ph.D. at the Institute of Microbiology at Hebrew University in Jerusalem and a Master of Science degree in Biochemistry from Yale University. She also completed a Post Doctoral Fellowship in the Department of Biological Sciences at Columbia University.

DAVID C. GOLDBERG Vice President of Business Development for Enzo Biochem and Senior Vice President of Enzo Clinical Labs, has been employed with the company since 1985. He has held several managerial positions within Enzo Biochem. Mr. Goldberg also held management and marketing positions with DuPont-NEN and Gallard Schlesinger Industries before joining the Company. He received a Master of Science degree in Microbiology from Rutgers University and a Master of Business Administration in Finance from New York University.

JOHN B. SIAS has been a Director of the Company since January 1982. Mr. Sias had been President and Chief Executive Officer of Chronicle Publishing Company from April 1993 to September 2000. From January 1986 until April 1993, Mr. Sias was President of ABC Network Division, Capital Cities/ABC, Inc. From 1977 until January 1986, he was the Executive Vice President, President of the Publishing Division (which includes Fairchild Publications) of Capital Cities Communications, Inc.

JOHN J. DELUCCA has been a Director of the Company since January 1982. Since April 2003, Mr. Delucca is Executive Vice President and Chief Financial Officer of REL Consulting Group. Mr. Delucca had been the Chief Financial Officer & Executive Vice President, Finance & Administration of Coty, Inc., from January 1999 to January 2002. From October 1993 until January 1999, he was Senior Vice President and Treasurer of RJR Nabisco, Inc. From January 1992 until October 1993, he was managing director and Chief Financial Officer of Hascoe Associates, Inc. From October 1, 1990 to January 1992, he was President of The Lexington Group. From September 1989 until September 1990, he was Senior Vice President-Finance of the Trump Group. From May 1986 until August 1989, he was senior Vice President-Finance at International Controls Corp. From February 1985 until May 1986, he was a Vice President and Treasurer of Textron, Inc. Before that, he was a Vice President and Treasurer of the Avco Corporation, which was acquired by Textron.

IRWIN C. GERSON has been a Director of the Company since May 8, 2001. From 1995 until December 1998, Mr. Gerson served as Chairman of Lowe McAdams Healthcare and prior thereto had been, since 1986, Chairman and Chief Executive Officer of William Douglas McAdams, Inc., one of the largest advertising agencies in the U.S. specializing in pharmaceutical marketing and communications to healthcare professionals. In February 2000, he was inducted into the Medical Advertising Hall of Fame. Mr. Gerson has a Bachelor of Science in Pharmacy from Fordham University and an MBA from the NYU Graduate School of Business Administration. He is a director of Andrx Corporation, a NASDAQ listed company which specializes in proprietary drug delivery technologies. From 1990-1999, he was Chairman of the Council of Overseers of the Arnold and Marie Schwartz

College of Pharmacy and has served as a trustee of The Albany College of Pharmacy and Long Island University.

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STANFORD S. WARSHAWSKY has been a Director of the Company since August 2002. Mr. Warshawsky, a Class I Director, will not stand for reelection to Board of Directors. Mr. Warshawsky was Co-President of Arnhold and S. Bleichroeder Holdings from 1994 and a director from 1974 until October 2003, having joined the firm in 1972. He previously was with the law firm of Shearman & Sterling. Mr. Warshawsky is Chairman of First Eagle Funds, Inc., and First Eagle Variable Funds, Inc. Mr. Warshawsky is a member of the New York Stock Exchange's Nominating Committee, of which he also was a former Chairman, and a member of the Big Board's New York Area Firms Advisory Committee. He is a Director of the German-American Chamber of Commerce, a fellow in the Foreign Policy Association and Vice Chairman of the Arthur F. Burns Fellowship. He is a member of the Bar Associations of both New York State and Virginia State. Mr. Warshawsky holds a Bachelor of Business Administration degree from the University of Michigan and a JD from the University Of Virginia School Of Law.

MELVIN F. LAZAR, CPA has been a Director of the Company since August 1, 2002. Mr. Lazar was a founding partner of the public accounting firm of Lazar, Levine & Felix (LLP) from 1969 until October 2002. Mr. Lazar and his firm served the business and legal communities for over 30 years. He is an expert on the topic of business valuations and merger and acquisition activities. Mr. Lazar is a board member and serves as the Chairman of the Audit Committee of privately owned Active Media Services, Inc., the largest corporate barter company in the nation. Mr. Lazar is also a board member and serves as the Chairman of the Audit Committee of Ceco Environmental Corp., which is a provider of innovative solutions to industrial ventilating and air quality problems. Mr. Lazar holds a Bachelor of Business Administration degree from The City College of New York (Baruch College).

Dr. Elazar Rabbani and Shahram K. Rabbani are brothers and Barry W. Weiner is their brother-in-law.

MEETINGS OF THE BOARD OF DIRECTORS

During the fiscal year ended July 31, 2003, there were four (4) formal meetings of the Board of Directors, several actions by unanimous consent and several informal meetings. Currently, the Board of Directors has a Nominating Committee, an Audit Committee and a Compensation Committee. The Nominating Committee had one (1) formal meeting, the Audit Committee had five (5) formal meetings and the Compensation Committee had two (2) formal meetings in fiscal 2003.

COMMITTEES OF THE BOARD OF DIRECTORS

The Audit Committee was established by and amongst the Board of Directors for the purpose of overseeing the accounting and financial reporting processes of the Company and audits of the financial statements of the Company in accordance with Section 3(a)(58)(A) of the Securities Exchange Act of 1934, as amended. The Audit Committee is authorized to review proposals of the Company's auditors regarding annual audits, recommend the engagement or discharge of the auditors, review recommendations of such auditors concerning accounting principles and the adequacy of internal controls and accounting procedures and practices, review the scope of the annual audit, approve or disapprove each professional service or type of service other than standard auditing services to be provided by the auditors, and review and discuss the audited financial statements with the auditors. The current members of the Audit Committee are Messrs. Sias, Delucca and Lazar and Mr. Delucca is the Chairman. The Board of Directors has determined that each of the Audit Committee members are independent, as defined in the NYSE's listing standards and as defined in Item 7(d)(3)(iv) of Schedule 14A under the Securities and Exchange Act of 1934. The Board of Directors has further determined that Messrs. Delucca and Lazar are each "audit committee financial experts" as such term is defined under Item 401(h)(2) of Regulation S-K.

The Board of Directors has amended and restated the charter of the Audit Committee to reflect, among other things, requirements of recently adopted federal legislation, including the Sarbanes-Oxley Act of 2002, new and proposed rules of the Securities and Exchange Commission and certain amended listing standards of the New York Stock Exchange. A copy of such amended and restated charter is annexed to this Proxy Statement as ANNEX A.

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The Compensation Committee has the power and authority to (i) establish a general compensation policy for the officers and employees of the Corporation,

including to establish and at least annually review officers' salaries and levels of officers' participation in the benefit plans of the Corporation, (ii) prepare any reports that may be required by the regulations of the Securities and Exchange Commission or otherwise relating to officer compensation, (iii) approve any increases in directors' fees, (iv) grant stock options and (v) exercise all other powers of the Board of Directors with respect to matters involving the compensation of employees and the employee benefits of the Corporation as shall be delegated by the Board of Directors to the Compensation Committee. The current members of the Compensation Committee are Messrs. Gerson, Delucca and Lazar and Mr. Gerson is the Chairman.

The Nominating Committee has the power to recommend to the Board of Directors prior to each annual meeting of the shareholders of the Corporation: (i) the appropriate size and composition of the Board of Directors; and (ii) nominees: (1) for election to the Board of Directors for whom the Corporation should solicit proxies; (2) to serve as proxies in connection with the annual shareholders' meeting; and (3) for election to all committees of the Board of Directors other than the Nominating Committee. The Nominating Committee will consider nominations from the stockholders, provided that they are made in accordance with the Company's By-laws. The current members of the Nominating Committee are Messrs. Gerson, Delucca, Lazar and Sias and Mr. Sias is the Chairman.

AUDIT COMMITTEE REPORT

In connection with the preparation and filing of the Company's Annual Report on Form 10-K for the year ended July 31, 2003:

- (1) The Audit Committee reviewed and discussed the audited financial statements with management;
- (2) The Audit Committee discussed with the independent auditors matters required to be discussed under Statement on Auditing Standards No. 61, as may be modified or supplemented;
- (3) The Audit Committee reviewed the written disclosures and the letter from the independent auditors required by the Independence Standards Board Standard No. 1, as may be modified or supplemented, and discussed with the independent auditors any relationships that may impact their objectivity and independence and satisfied itself as to the auditors' independence;
- (4) The Audit Committee discussed with the Company's independent auditors the overall scope and plans for their audits. The Audit Committee met with the independent auditors, with and without management present, to discuss the results of their examinations, their evaluations of the Company's internal controls, and the overall quality of the Company's financial reporting. The Audit Committee held five (5) formal meeting during the fiscal year ended July 31, 2003 and
- (5) Based on the review and discussions referred to above, the Audit Committee recommended to the Board of Directors that the audited financial statements of the Company be included in the 2003 Annual Report on Form 10-K.

Submitted by the members of the Audit Committee

John J. Delucca
John B. Sias
Melvin F. Lazar, CPA

SECTION 16(a) BENEFICIAL OWNERSHIP REPORTING COMPLIANCE

Section 16(a) of the Securities Exchange Act of 1934, as amended, requires the Company's executive officers, directors and persons who beneficially own more than 10% of a registered class of the Company's equity securities (collectively, "Reporting Persons") to file with the Securities and Exchange Commission initial reports of ownership and reports of changes in ownership of common stock and other equity securities of the Company. Such executive officers, directors and greater than 10% beneficial owners are required by Securities and Exchange Commission regulation to furnish the Company with copies of all Section 16(a) forms filed by such reporting persons.

Based solely on the Company's review of such forms furnished to the Company and written representations from certain reporting persons, the Company believes that the Reporting Persons have complied with all applicable filing requirements except in the following instances: Dr. Elazar Rabbani filed one late Form 5 with

respect to three gifts made during the Company's fiscal year ended July 31, 2002 of an aggregate of 15,000 shares of Common Stock to certain educational institutions and one late Form 5 with respect to three gifts made during the Company's fiscal year ended July 31, 2003 of an aggregate of 4,500 shares of Common Stock to certain educational institutions; Barry W. Weiner filed one late Form 5 with respect to a gift made during the Company's fiscal year ended July 31, 2003 of 1,860 shares of Common Stock to an educational institution.

CERTAIN RELATIONSHIP AND RELATED TRANSACTIONS

Enzo Clinical Labs, Inc. ("Enzolabs"), a subsidiary of the Company, leases a facility located in Farmingdale, New York from Pari Management Corporation ("Pari"). Pari is owned equally by Elazar Rabbani, Ph.D., Shahram Rabbani and Barry Weiner and his wife, the officers and directors of Pari. The lease commenced on December 20, 1989 and terminates on November 30, 2004. During fiscal 2003, Enzolabs paid approximately \$1,302,000 (including \$136,305 in real estate taxes) to Pari with respect to such facility and future payments are subject to cost of living adjustments. An amendment to the foregoing lease was effected on January 1, 2000, to provide for the lease of an additional 3,000 square feet by Enzolabs. The Company, which has guaranteed Enzolabs' obligations to Pari under the lease, believes that the lease terms are as favorable to the Company as would be available from an unaffiliated party.

CODE OF ETHICS

The Company has adopted a Code of Ethics (as such term is defined in Item 406 of Regulation S-K), which code has been filed as Exhibit 14 to the Company's annual report on Form 10-K for the fiscal year ended July 31, 2003. The Code of Ethics applies to the Company's Executive Officer, Chief Financial Officer and principal accounting officer or controller, or persons performing similar functions. The Code of Ethics has been designed to deter wrongdoing and to promote:

- (1) Honest and ethical conduct, including the ethical handling of actual or apparent conflicts of interest between personal and professional relationships;
- (2) Full, fair, accurate, timely, and understandable disclosure in reports and documents that the Company files with, or submits to, the Securities and Exchange Commission and in other public communications made by the Company;
- (3) Compliance with applicable governmental laws, rules and regulations;
- (4) The prompt internal reporting or violations of the Code of Ethics to an appropriate person or persons identified in the Code of Ethics; and
- (5) Accountability for adherence to the Code of Ethics.

EXECUTIVE COMPENSATION OF DIRECTORS AND EXECUTIVE OFFICERS

The following summary compensation table sets forth the aggregate compensation paid by the Company to its chief executive officer and to the Company's four other most highly compensated executive officers whose annual compensation exceeded \$100,000 for the fiscal year ended July 31, 2003 (each, a "Named Executive Officer") for services during the fiscal years ended July 31, 2003, 2002 and 2001:

<TABLE>
<CAPTION>

SUMMARY COMPENSATION TABLE

NAME AND PRINCIPAL POSITION	YEAR	ANNUAL COMPENSATION		LONG TERM
		SALARY (\$)	BONUS (\$)	COMPENSATION AWARDS
				SECURITIES UNDERLYING OPTIONS/SARS (#)
<S>	<C>	<C>	<C>	<C>
ELAZAR RABBANI, PH.D., Chairman of the Board of Directors and CEO	2003	\$402,963	\$275,000	105,000
	2002	\$367,656	\$245,000	-0-
	2001	\$344,307	\$245,000	75,000
SHAHRAM K. RABBANI, Chief Operating Officer, Treasurer, Secretary and Director	2003	\$367,825	\$260,000	105,000
	2002	\$332,526	\$230,000	-0-
	2001	\$310,191	\$230,000	75,000
BARRY W. WEINER, President, Chief Financial Officer and Director	2003	\$367,825	\$260,000	105,000
	2002	\$332,526	\$230,000	-0-
	2001	\$310,191	\$230,000	75,000

DEAN ENGELHARDT, PH.D., Executive Vice President	2003	\$221,622	\$55,000	15,750
	2002	\$204,527	\$50,000	-0-
	2001	\$199,843	\$50,000	5,000
NORMAN E. KELKER, PH.D., Senior Vice President	2003	\$183,268	\$45,000	10,500
	2002	\$168,760	\$30,000	-0-
	2001	\$160,498	\$30,000	5,000

</TABLE>

OPTION/SAR GRANTS IN LAST FISCAL YEAR

<TABLE>
<CAPTION>

INDIVIDUAL GRANTS						
REALIZABLE						POTENTIAL
STOCK	NUMBER OF	PERCENT OF				VALUE AT ASSUMED
FOR	SECURITIES	TOTAL				ANNUAL RATES OF
	UNDERLYING	GRANTED TO	EXERCISE OF	EXPIRATION	OPTIONS TERM	
---	OPTION/SARS	EMPLOYEES IN	BASE PRICE		5% (\$)	10% (\$)
NAME	GRANTED (#)	FISCAL YEAR	(\$ / SH)	DATE		
-----	-----	-----	-----	-----	-----	-----
<S>	<C>	<C>	<C>	<C>	<C>	<C>
Elazar Rabbani, Ph.D., Chairman of the Board of Directors and Chief Executive Officer 3,506,513	105,000	17.51%	12.887	1/25/13	2,198,983	
Shahram K. Rabbani, Chief Operating Officer, Treasurer, Secretary and Director 3,506,513	105,000	17.51%	12.887	1/25/13	2,198,983	
Barry W. Weiner, President, Chief Financial Officer and Director	105,000	17.51%	12.887	1/25/13	2,198,983	3,506,513
Dean Engelhardt, Ph.D., Executive Vice President 500,216	15,750	2.63%	12.887	1/25/13	314,14	
Norman Kelker, Ph.D., Senior Vice President 333,477	10,500	1.75%	12.887	1/25/13	209,427	

</TABLE>

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AGGREGATED OPTION/SAR EXERCISES IN LAST FISCAL YEAR AND FISCAL YEAR-END
OPTION/SAR VALUES

The following table sets forth certain information with respect to stock
option exercises by the Named Executive Officers during the fiscal year ended
July 31, 2003 and the value of unexercised options held by them at fiscal
year-end.

<TABLE>
<CAPTION>

NAME	SHARES ACQUIRED ON EXERCISE (#)	VALUE REALIZED (\$)	NUMBER OF SECURITIES UNDERLYING UNEXERCISED OPTIONS/SARS OPTIONS AT FISCAL YEAR-END (#)		VALUE OF UNEXERCISED IN-THE-MONEY OPTIONS/SARS AT FISCAL YEAR-END (\$) (1)	
			EXERCISABLE	UNEXERCISABLE	EXERCISABLE	UNEXERCISABLE
-----	-----	-----	-----	-----	-----	-----
<S>	<C>	<C>	<C>	<C>	<C>	<C>
Elazar Rabbani, Ph.D.	-0-	\$ 0	577,409	146,344	6,976,551	1,160,581
Shahram K. Rabbani	-0-	\$ 0	577,409	146,344	6,976,551	1,160,581
Barry W. Weiner	-0-	\$ 0	494,286	146,344	5,865,920	1,160,581
Dean Engelhardt, Ph.D.	-0-	\$ 0	62,622	21,039	718,178	52,007
Norman E. Kelker, Ph.D.	-0-	\$ 0	24,506	13,256	328,381	104,927
John B. Sias	-0-	\$ 0	93,926	12,009	564,473	61,999

</TABLE>

- (1) Market value of the underlying securities at fiscal year end minus the exercise price.

EMPLOYMENT AGREEMENTS

Each of Mr. Barry Weiner, Mr. Shahram Rabbani and Dr. Elazar Rabbani (the "Executives") are parties to an employment agreement effective May 4, 1994 (the "Employment Agreement(s)") with the Company. Pursuant to the terms of their respective Employment Agreements, as amended, Messrs. Weiner and Rabbani and Dr. Rabbani are currently compensated for the calendar year 2003 at a base annual salary of \$385,000, \$385,000 and \$420,000, respectively. Each Executive will also receive an annual bonus, the amount of which shall be determined by the Board of Directors in its discretion. Each Employment Agreement provides that, in the event of termination of the Executive for good reason or without cause (or, additionally, in the case of Dr. Rabbani, a nonrenewal), as such terms are defined therein, each Executive shall be entitled to receive: (a) a lump sum in an amount equal to three (3) years of the Executive's base annual salary; (b) a lump sum in an amount equal to the annual bonus paid by the Company to the Executive for the last fiscal year of the Company ending prior to the date of termination multiplied by three (3); (c) insurance coverage for the Executive and his dependents, at the same level and at the same charges to the Executive as immediately prior to his termination, for a period of three (3) years following his termination from the Company; (d) all accrued obligations, as defined therein; and (e) with respect to each incentive pay plan (other than stock option or other equity plans) of the Company in which the Executive participated at the time of termination, an amount equal to the amount the Executive would have earned if he had continued employment for three (3) additional years. If the Executive is terminated by reason of his disability, he shall be entitled to receive, for three (3) years after such termination, his base annual salary less any amounts received under a long term disability plan. If the Executive is terminated by reason of his death, his legal representatives shall receive the balance of any remuneration due him. The term of each of the Executive's Employment Agreement, as amended, provides for a term expiring on May 4, 2004, which term automatically renews for successive two year periods if notice to the Company is not given by either party within 180 days of the end of such successive term.

COMPENSATION OF DIRECTORS

As of January 1, 2003, each person who serves as a director and who is not otherwise an officer or an employee (such director being classified as an "Outside Director") of the Company, receives an annual director's fee of \$20,000 and a fee of \$1,500 for each meeting attended in person or by telephone. In addition, the Chairman of the Audit Committee receives a fee of \$500 for each meeting attended. Under the Company's 1999 Stock Option Plan (the "1999 Plan"), on the date persons are first elected to serve as Outside Directors of the Company's Board of Directors, such persons shall receive options ("Initial Director Options") to purchase 15,000 shares of Common Stock of the Company, and will automatically receive options ("Automatic Director Options" and together with the Initial Director Options, the "Director Options") to purchase 7,500 shares of the Company's Common Stock immediately following the date of each annual meeting of the Company's shareholders, PROVIDED, HOWEVER, that such persons did not receive Initial Director Options since the most recent grant of Automatic Director Options and

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continue to serve as directors of the Company's Board of Directors. The exercise price for each share subject to a Director Option shall be equal to the fair market value of the Company's Common Stock on the date of grant. Director Options shall become exercisable at the discretion of the Board of Directors, subject to acceleration in certain circumstances, and shall expire the earlier of ten (10) years after the date of grant or ninety (90) days after the termination of the director's service on the Board of Directors. On August 1, 2002, each of Messrs. Warshawsky and Lazar were granted Initial Director Options to acquire 15,875 (as adjusted to reflect a 5% stock dividend) of Common Stock. During fiscal year 2003, each of Messrs. Delucca, Gerson and Sias were each issued options to purchase 7,875 shares (adjusted to reflect a 5% stock dividend) of Common Stock.

COMPENSATION COMMITTEE INTERLOCKS AND INSIDER PARTICIPATION

The current members of the Compensation Committee are Messrs. Gerson, Delucca and Lazar. No member of the Compensation Committee has a relationship that would constitute an interlocking relationship with the Company's executive officers or other directors.

COMPENSATION COMMITTEE REPORT

The Company strives to apply a uniform philosophy to compensation for all of its employees, including the members of its senior management. This philosophy is based on the premise that the achievements of the Company result from the combined and coordinated efforts of all employees working toward common goals and objectives.

The goals of the Company's compensation program are to align remuneration with business objectives and performance, and to enable the Company to retain and competitively reward executive officers who contribute to the long-term success of the Company. The Company's compensation program for executive officers is based on the following principles, which are applicable to compensation decisions for all employees of the Company. The Company attempts to pay its executive officers competitively in order that it will be able to retain the most capable people in the industry. Information with respect to levels of compensation being paid by comparable companies is obtained from various publications and surveys.

During the last fiscal year, the compensation of executive officers consisted principally of salary and bonus and the Company granted stock options to certain of its executive officers, additional grants of which may be made in the future. The cash portion of such program includes base salary and annual bonuses, which are awarded in the discretion of the Board of Directors. Salary levels have been set based upon historical levels, amounts being paid by comparable companies and performance. The Company's equity-based compensation consists of the award of discretionary stock options, which are designed to provide additional incentives to executive officers to maximize shareholder value. Through the use of extended vesting periods, the option program is designed to encourage executive officers to remain in the employ of the Company. In addition, because the exercise prices of such options are typically set at or above the fair market value of the stock on the date the option is granted, executive officers can only benefit from such options if the trading price of the Company's shares of Common Stock increases, thus aligning their financial interests directly with those of the shareholders.

In consideration for Dr. Elazar Rabbani's services as Chairman of the Board of Directors and Chief Executive Officer of the Company for the fiscal year ended July 31, 2003, the Company paid Dr. Rabbani an annual salary of \$402,963 and a bonus of \$275,000. Such compensation was determined pursuant to the Company's employment agreement with Dr. Rabbani and was based on the Board's view of Dr. Rabbani's successful performance as Chief Executive Officer. See "Employment Agreements."

Submitted by the members of the
Compensation Committee

Irwin W. Gerson
John J. Delucca
Melvin F. Lazar

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401(k) PLAN

The Company has adopted a salary reduction profit sharing plan which is generally available to employees of the Company and any subsidiary of the Company. Officers and directors who are employees of the Company participate in the Plan on the same basis as other employees.

The Plan permits voluntary contributions by employees in varying amounts up to 17% of annual earnings (not to exceed the maximum allowable in any calendar year which is \$12,000 for 2003). Employee contributions are made by salary reduction under Section 401(k) of the Internal Revenue Code of 1986, as amended (the "Code"), and are excluded from taxable income of the employee. The Company may also contribute additional discretionary amounts as it may determine.

All employees of the Company who are twenty-one (21) years or older and have been employed by the Company for a minimum of three (3) months are eligible to participate in the Plan. Employees, who have more than 500 hours of service per service year, but less than 1,000 hours per service year, are still considered members of the Plan, but contribution allocations and vesting will not increase during such time.

A participant's account is distributed to him upon retirement or termination of employment for any reason and in certain other limited situations. The amount of the Plan allocation attributable to the Company's discretionary contributions will vest in accordance with a schedule. For the fiscal year ended July 31, 2003, the Company has made contributions of 50% of the employees' contribution up to 10% of the employees' compensation in Common Stock of the Company.

1994 STOCK OPTION PLAN

Under the Company's 1994 Stock Option Plan (the "1994 Plan"), the Company's Board of Directors may grant ISOs and NQSOs to selected key employees, directors, executive officers, consultants and advisors of the Company to purchase the Company's Common Stock. ISOs and NQSOs granted under the 1994 Plan generally vest no earlier than six (6) months after the date of grant and can be exercised no later than the tenth (10th) anniversary date of the date of grant.

When the optionee, however, holds more than 10% of all combined voting stock of the Company, ISOs granted under the 1994 Plan cannot be exercised later than the fifth (5th) anniversary date of the date of grant. The exercise prices of options granted under the 1994 Plan are set by the Board of Directors of the Company, or designated committee. In any event, however, ISOs granted under the 1994 Plan may not be exercisable at a price lower than the fair market value of the Company's Common Stock on the date such options are granted, and, when the optionee holds more than 10% of all combined voting stock of the Company, the exercise prices of such options may not be less than 110% of the fair market value of the Common Stock of the Company on the date of grant. ISOs granted under the 1994 Plan to any optionee which become exercisable for the first time in any one calendar year for shares of Common Stock of the Company with an aggregate fair market value, as of the respective date or dates of grant, of more than \$100,000 shall be treated as NQSOs. The awards under the 1994 Plan are subject to restrictions on transferability, are forfeitable in certain circumstances and are exercisable at such time or times and during such period as shall be set forth in the option agreement evidencing such option. During the fiscal year ended July 31, 2003, no options to purchase shares of the Company's Common Stock were awarded under the 1994 Plan. As of the Record Date, of the 1,022,342 shares of the Company's Common Stock reserved for issuance upon the exercise of options authorized for grant under the 1994 Plan, no shares of the Company's Common Stock remain available for issuance upon the exercise of options authorized for grant under the 1994 Plan.

1999 STOCK OPTION PLAN

Under the Company's 1999 Stock Option Plan (the "1999 Plan"), the Company's Board of Directors may grant ISOs and NQSOs to selected key employees, directors, executive officers, consultants and advisors of the Company to purchase the Company's Common Stock. ISOs and NQSOs granted under the 1999 Plan generally vest no earlier than six (6) months after the date of grant and can be exercised no later than the tenth (10th) anniversary date of the date of grant. When the optionee, however, holds more than 10% of all combined voting stock of the Company, ISOs granted under the 1999 Plan cannot be exercised later than the fifth (5th) anniversary date of the date of grant. The exercise prices of options granted under the 1999 Plan are set by the Board of Directors of the Company, or designated committee. In any event, however, ISOs granted under the 1999 Plan may

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not be exercisable at a price lower than the fair market value of the Company's Common Stock on the date such options are granted, and, when the optionee holds more than 10% of all combined voting stock of the Company, the exercise prices of such options may not be less than 110% of the fair market value of the Common Stock of the Company on the date of grant. ISOs granted under the 1999 Plan to any optionee which become exercisable for the first time in any one calendar year for shares of Common Stock of the Company with an aggregate fair market value, as of the respective date or dates of grant, of more than \$100,000 shall be treated as NQSOs. The awards under the 1999 Plan are subject to restrictions on transferability, are forfeitable in certain circumstances and are exercisable at such time or times and during such period as shall be set forth in the option agreement evidencing such option. During the fiscal year ended July 31, 2003, options to purchase up to 629,738 shares of the Company's Common Stock were awarded under the 1999 Plan. As of the Record Date, of the 2,162,831 shares of the Company's Common Stock reserved for issuance upon the exercise of options authorized for grant under the 1999 Plan, 635,960 shares of the Company's Common Stock remain available for issuance upon the exercise of options authorized for grant under the 1999 Plan.

INSURANCE FOR INDEMNIFICATION OF DIRECTORS AND OFFICERS

The Company has in effect, with American International Group Companies ("AIG") under a policy effective January 22, 2003, and expiring on February 22, 2004, insurance covering all of its directors and officers and certain other employees of the Company against certain liabilities and reimbursing the Company for obligations which it incurs as a result of its indemnification of such directors, officers and employees. Such insurance has been obtained in accordance with the provisions of Section 726 of the Business Corporation Law of the State of New York. The annual premium is \$437,750.

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PERFORMANCE GRAPH

The graph below compares the five-year cumulative shareholder total return based upon an initial \$100 investment (assuming the reinvestment of dividends) for Enzo Biochem, Inc. shares of Common Stock with the comparable return for the New York Stock Exchange Market Value Index and two peer issuer indices selected on an industry basis. The two peer group indices include: (i) 58 biotechnology companies engaged in the research and development of diagnostic substances and

(ii) 14 companies engaged in the medical laboratories business. All of the indices include only companies whose common stock has been registered under Section 12 of the Securities Exchange Act of 1934 for at least the time frame set forth in the graph.

The total shareholder returns depicted in the graph are not necessarily indicative of future performance. The Performance Graph and related disclosure shall not be deemed to be incorporated by reference in any filing by the Company under the Securities Act of 1933 or the Securities Exchange Act of 1934, except to the extent that the Company specifically incorporates the graph and such disclosure by reference.

COMPARE 5-YEAR CUMULATIVE TOTAL RETURN
AMONG ENZO BIOCHEM, INC.,
NYSE MARKET INDEX AND SIC CODE INDEX

[THE FOLLOWING DATA IS PRESENTED AS A GRAPH IN THE PRINTED DOCUMENT]

	ENZO BIOCHEM, INC.	MEDICAL LABORATORIES	NYSE MARKET INDEX	BIOTECHNOLOGY PEERS
1998	100	100	100	100
1999	168.08	99.9	113.14	124.24
2000	453.72	211.85	117.12	246.38
2001	225.01	229	114.34	204.59
2002	124.24	160.7	92.55	171.74
2003	194.66	170.84	101.55	205.67

ASSUMES \$100 INVESTED ON AUG. 1, 1998
ASSUMES DIVIDEND REINVESTED
FISCAL YEAR ENDING JULY 31, 2003

COMPARISON OF 5-YEAR CUMULATIVE TOTAL RETURN OF THE
COMPANY, TWO PEER GROUP INDICES AND THE NYSE MARKET INDEX

<TABLE>
<CAPTION>

	1998 -----	1999 -----	2000 -----	2001 -----	2002 -----	2003 -----
<S>	<C>	<C>	<C>	<C>	<C>	<C>
ENZO BIOCHEM, INC.	100.00	168.08	453.72	225.01	124.24	194.66
MEDICAL LABORATORIES	100.00	99.90	211.85	229.00	160.70	170.84
NYSE MARKET INDEX	100.00	113.14	117.12	114.34	92.55	101.55
BIOTECHNOLOGY PEERS	100.00	124.24	246.38	204.59	171.74	205.67

</TABLE>

PROPOSAL 2
APPROVAL OF INDEPENDENT AUDITORS

The Board of Directors has appointed Ernst & Young LLP, as independent auditors, to audit the accounts of the Company for the fiscal year ending July 31, 2004. The Board of Directors approved the reappointment of Ernst & Young LLP (the firm resulting from the merger of Ernst & Whinney and Arthur Young & Company, which has been engaged as the Company's independent auditors since 1983). Ernst & Young LLP has advised the Company that neither the firm nor any of its members or associates has any direct financial interest in the Company or any of its affiliates other than as auditors. Although the selection and appointment of independent auditors is not required to be submitted to a vote of shareholders, the Directors deem it desirable to obtain the shareholders' ratification and approval of this appointment.

AUDIT FEES

Ernst & Young LLP has billed the Company \$177,600, in the aggregate, for professional services rendered by Ernst & Young LLP for the audit of the Company's annual financial statements for the Company's 2003 fiscal year and the reviews of the interim financial statements included in the Company's Quarterly Reports on Form 10-Q for the Company's 2003 fiscal year.

ALL OTHER FEES

Ernst & Young LLP has billed the Company \$87,000, in the aggregate, for professional services rendered by Ernst & Young LLP for all services other than those services covered in the section captioned "Audit Fees" for the Company's 2003 fiscal year. These other services include \$12,000 for audit related fees related to the Sarbanes-Oxley Act and \$75,000 for tax fees which includes tax compliance, tax advice and tax planning.

In making its recommendations to ratify the appointment of Ernst & Young

LLP as the Company's independent accountants for the fiscal year ending July 31, 2004, the Audit Committee has considered whether the non-audit services provided by Ernst & Young LLP are compatible with maintaining the independence of Ernst & Young LLP.

Representatives of Ernst & Young LLP are expected to be present at the Annual Meeting with the 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 A VOTE "FOR" PROPOSAL 2 RELATING TO THE RATIFICATION OF THE APPOINTMENT OF THE AUDITORS. PROXIES SOLICITED BY THE BOARD OF DIRECTORS WILL BE SO VOTED UNLESS SHAREHOLDERS SPECIFY IN THEIR PROXIES A CONTRARY CHOICE.

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GENERAL

The Management of the Company does not know of any matters other than those stated in this Proxy Statement which are to be presented for action at the meeting. If any other matters should properly come before the meeting, it is intended that proxies in the accompanying form will be voted on any such matters in accordance with the judgment of the persons voting such proxies. Discretionary authority to vote on such matters is conferred by such proxies upon the persons voting them.

The Company will bear the cost of preparing, assembling and mailing the Proxy, Proxy Statement and other material which may be sent to the shareholders in connection with this solicitation. In addition to the solicitation of proxies by use of the mails, officers and regular employees may solicit the return of proxies. The Company may reimburse persons holding stock in their names or in the names of other nominees for their expense in sending proxies and proxy material to principals. In addition, American Stock Transfer & Trust Company, 6201 15th Avenue, Brooklyn, NY 11219, the Company's transfer agent, has been engaged to solicit proxies on behalf of the Company for a fee, excluding expenses, of approximately \$5,000. Proxies may be solicited by mail, personal interview, telephone and telegraph.

THE COMPANY WILL PROVIDE WITHOUT CHARGE TO EACH PERSON BEING SOLICITED BY THIS PROXY STATEMENT, UPON THE WRITTEN REQUEST OF ANY SUCH PERSON, A COPY OF THE ANNUAL REPORT OF THE COMPANY ON FORM 10-K FOR THE YEAR ENDED JULY 31, 2003 (AS FILED WITH THE SECURITIES AND EXCHANGE COMMISSION) INCLUDING THE FINANCIAL STATEMENTS AND THE SCHEDULES THERETO. ALL SUCH REQUESTS SHOULD BE DIRECTED TO SHAHRAM K. RABBANI, SECRETARY, ENZO BIOCHEM, INC., 60 EXECUTIVE BOULEVARD, FARMINGDALE, NEW YORK 11735.

SHAREHOLDER PROPOSALS TO BE PRESENTED AT THE NEXT ANNUAL MEETING

SHAREHOLDER PROPOSALS. Proposals of shareholders intended to be presented at the Company's 2004 Annual Shareholder Meeting (i) must be received by the Company at its offices no later than July 29, 2004 (120 days preceding the one year anniversary of the Mailing Date), (ii) may not exceed 500 words and (iii) must otherwise satisfy the conditions established by the Securities and Exchange Commission for stockholder proposals to be included in the Company's Proxy Statement and form of proxy for that meeting.

DISCRETIONARY PROPOSALS. Shareholders intending to commence their own proxy solicitations and present proposals from the floor of the 2004 Annual Shareholder Meeting in compliance with Rule 14a-4 promulgated under the Exchange Act of 1934, as amended, must notify the Company of such intentions before October 12, 2004 (45 days preceding the one year anniversary of the Mailing Date). After such date, the Company's proxy in connection with the 2004 Annual Shareholder Meeting may confer discretionary authority on the Board to vote.

By Order of the Board of Directors

Shahram K. Rabbani, SECRETARY

Dated: November 26, 2003

ANNEX A

ENZO BIOCHEM, INC.
AMENDED AND RESTATED
AUDIT COMMITTEE CHARTER

PURPOSE

The purpose of the Audit Committee (the "Committee") of the Board of Directors (the "Board") of Enzo Biochem, Inc., a New York corporation (the "Company"), is to (a) assist the Board in monitoring: (1) the integrity of the Company's financial statements, (2) the Company's compliance with legal and regulatory requirements, (3) the independence and qualifications of the Company's independent auditor and (4) the performance of the Company's internal audit function and independent auditor; (b) prepare an audit committee report as required by the Securities and Exchange Commission to be included in the Company's annual proxy statement; (c) an annual performance evaluation of the audit committee; and (d) provide an avenue of communication among the Company's independent auditor, management, internal auditing department and the Board.

COMPOSITION

The Committee will be comprised of three or more members of the Board, each of whom shall meet the independence and experience requirements of the New York Stock Exchange, Section 10A(m)(3) of the Securities Exchange Act of 1934 (the "Exchange Act") and the rules and regulations of the Securities and Exchange Commission.

All members of the Committee shall be able to read and understand fundamental financial statements, including the Company's balance sheet, income statement and cash flow statement. Members of the Committee may not serve on the audit committees of more than two other public companies unless the Board has determined that such simultaneous service would not impair the ability of such member to effectively serve on the Committee (and such determination shall be disclosed in the Company's annual proxy statement).

The members of the Committee will be elected by the Board, and will generally serve on the Committee for a term coinciding with their Board term.

MEETINGS

The Committee shall meet as often as necessary to carry out its responsibilities, but not less frequently than quarterly. Meetings may be called by the Chairman of the Committee, the Chief Executive Officer of the Company or any member of the Committee. In addition, the Committee will make itself available to the independent auditor of the Company as requested by such independent auditor. All meetings of the Committee shall be held pursuant to the Bylaws of the Company with regard to notice and waiver thereof, and written minutes of each meeting shall be duly filed in the Company's records. Written or oral reports of the meetings of the Committee shall be made to the Board at its next scheduled meeting following the Committee meeting accompanied by any recommendations to the Board approved by the Committee.

FUNCTIONS, RESPONSIBILITIES AND AUTHORITY

The Committee will have the full power and authority to carry out the following responsibilities, which responsibilities may not be delegated to any other committee of the Board:

1. Review and reassess the adequacy of this Charter annually and submit it to the Board for approval.
2. Review the annual audited financial statements with management and independent auditor, 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. In particular, the Committee shall review, among other things, (a) major issues regarding accounting principles and financial statement presentations, including any significant changes in the Company's selection or application of accounting principles, and major issues as to the adequacy of the Company's internal controls and any special audit steps adopted in light of material control deficiencies; (b) analyses prepared by management and/or the

financial statements, including analyses of the effects of alternative GAAP methods on the financial statements; (c) the effect of regulatory and accounting initiatives, as well as off-balance sheet structures (if any), on the financial statements of the Company; and (d) the type and presentation of information to be included in earnings press releases (paying particular attention to any use of "pro forma," or "adjusted" non-GAAP information), as well as any financial information and earnings guidance provided to analysts and rating agencies.

3. 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.
 4. In consultation with management, the independent auditor, and the internal auditors, consider the integrity of the Company's financial reporting processes, internal audit function and internal controls.
 5. Review and discuss with management and the independent auditor the Company's annual audited financial statements and quarterly financial statements, including the Company's disclosures under "Management's Discussion and Analysis of Financial Condition and Results of Operations"
 6. Review the Company's press releases, as well as financial information and earnings guidance provided to analysts and rating agencies.
 7. Meet with management to review and discuss the Company's major financial risk exposures and the steps management has taken and policies management has implemented in order to assess, monitor, control and manage such exposures.
 8. Review major changes to the Company's accounting principles and practices taking into consideration the views of the independent auditor, internal auditors or management.
 9. Appoint (subject, if applicable to shareholder ratification), engage, compensate, retain, oversee (including working with management of the Company and the Company's independent auditor to resolve disagreements regarding financial reporting), evaluate and if deemed appropriate, terminate the work of any independent auditor, each in its capacity as a committee of the Board, engaged for the purpose of preparing or issuing an audit report or performing other audit, review or attest services for the company. Each independent auditor of the Company shall report directly to the Committee.
 10. Direct the Company, in its capacity as a committee of the Board, to provide appropriate funding for (a) payment of compensation to any registered public accounting firm engaged for the purpose of preparing or issuing an audit report or performing other audit, review or attest services for the Company, (b) payment of compensation to any independent counsel or other advisors engaged by the Committee, and (c) ordinary administrative expenses of the Committee that are necessary or appropriate in carrying out its duties.
 11. Receive periodic reports from the independent auditor regarding the auditor's independence, discuss such reports with the auditor, and if so determined by the Committee, recommend that the Board take appropriate action to assure the independence of the auditor.
 12. Obtain and review on at least an annual basis, a report by the Company's independent auditor describing: the firm's internal quality-control procedures; any material issues raised by the most recent internal quality-control review, or peer review, of the firm, or by any inquiry or investigation by governmental or professional authorities, within the preceding five years, respecting one of more independent audits carried out by the firm, and any steps taken to deal with any such issues; and (to assess the auditor's independence) all relationships between the independent auditor and the Company. Such evaluation shall include review and evaluation of the lead audit partner. The Committee's conclusions shall be presented to the Board. Such review shall be utilized by the Committee as part of its evaluation of the performance of the independent auditor.
 13. Review the appointment and replacement of the senior internal auditing executive.
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14. Review the significant reports to management prepared by the internal auditing department and management's responses.
 15. Meet with the independent auditor prior to the audit to review the planning and staffing of the audit.

16. 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.
17. Review with the independent auditor any problems or difficulties the auditor may have encountered and any management letter provided by the independent auditor and the Company's response to that letter. Such review should include a discussion of any difficulties encountered in the course of the audit work, including any restrictions on the scope of activities or access to required information.
18. Prepare the report required by the rules of the Securities and Exchange Commission to be included in the Company's annual proxy statement.
19. 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.
20. Meet periodically, with management, with internal auditors (or other personnel responsible for the Company's internal audit function) and the independent auditor in separate executive sessions.
21. Annually review policies and procedures as well as internal audit results associated with directors and officers expense accounts and perquisites.
22. Annually review director and officer related party transactions and potential conflicts of interest.
23. Set clear hiring policies for employees or former employees of the Company's independent auditor.
24. Establish procedures for the receipt, retention and treatment of complaints received by the Company regarding accounting, internal accounting controls or auditing matters, including procedures for the confidential, anonymous submission by employees of the Company of concerns regarding questionable accounting or auditing matters as set forth in Rule 10A-3(b)(3) under the Exchange Act.
25. Review, evaluate and pre-approve all audit services and permissible non-audit services provided by the Company's independent auditor as set forth in Section 10A(i) of the Exchange Act. The Committee may delegate authority to one or more members, when appropriate, including the authority to grant pre-approvals of audit and permitted non-audit services, provided that decisions made by such member or members are presented to the full Committee for consideration and ratification at its next scheduled meeting.
26. Perform any other activities consistent with this Charter, as the Committee or Board deems necessary or appropriate.

COMMITTEE RESOURCES

The Committee shall have the authority to engage independent counsel and other advisors as the Committee determines necessary to carry out its.

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PROXY

ENZO BIOCHEM, INC.
60 EXECUTIVE BOULEVARD, FARMINGDALE, NEW YORK 11735

THIS PROXY IS SOLICITED ON BEHALF OF THE BOARD OF DIRECTORS

The undersigned hereby appoints Elazar Rabbani, Ph.D. and Barry W. Weiner and each of them as Proxies, each with the power to appoint his substitute, and hereby authorizes them to represent and to vote, as designated below, all the shares of the Common Stock of Enzo Biochem, Inc. held of record by the undersigned on November 24, 2003, at the Annual Meeting of Shareholders to be held on January 14, 2004 or any adjournment thereof.

PROPOSAL 1. Election of Shahram Rabbani. and Irwin C. Gerson as Class I Directors.

FOR all nominees
(except as marked to the contrary below)

WITHHOLDING AUTHORITY
as to all nominees

(INSTRUCTION: To withhold authority to vote for any individual nominee, print that nominee's name on the line provided below.)

Withheld for: _____

PROPOSAL 2. Ratification of the appointment of Ernst & Young LLP as independent auditors for the fiscal year ending July 31, 2004.

FOR AGAINST ABSTAIN

In their discretion, the Proxies are authorized to vote upon such other business as may properly come before the Annual Meeting. This proxy when properly executed will be voted in the manner directed herein by the undersigned shareholder. If no direction is made, this proxy will be voted FOR Proposals 1 and 2.

PLEASE SIGN EXACTLY AS NAME APPEARS BELOW. WHEN SHARES OF COMMON STOCK ARE HELD BY JOINT TENANTS, BOTH SHOULD SIGN.

Dated: _____, 2003 / 2004 (circle one)

Signature: _____

Signature if held jointly: _____
(When signing as attorney, as executor, as administrator, trustee or guardian, please give full title as such. If a corporation, please sign in full corporate name by President or other authorized officer. If a partnership, please sign in partnership name by authorized person.)