

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.)

<TABLE>

<S> <C>
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-11(c) or
Rule 14a-12

</TABLE>

ENZO BIOCHEM, INC.

(Name of Registrant as Specified in Its Charter)

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

Payment of Filing Fee (Check the appropriate box):

<TABLE>

<S> <C> <C>
/X/ 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:

</TABLE>

ENZO BIOCHEM, INC.
60 Executive Boulevard
Farmingdale, New York 11735
(631) 755-5500

NOTICE OF ANNUAL MEETING OF SHAREHOLDERS
TO BE HELD ON WEDNESDAY, JANUARY 12, 2000

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, 20(th) Floor, New York, New York, on Wednesday, January 12, 2000, 9:00 a.m. local time (the "Annual Meeting"), for the following purposes:

1. To elect Elazar Rabbani, Ph.D. and John B. Sias each as Class III 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, 2000; and
3. To transact such other business as may properly come before the Annual Meeting or any adjournment thereof.

The close of business on Tuesday, November 23, 1999 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. 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 29, 1999

ENZO BIOCHEM, INC.
60 Executive Boulevard
Farmingdale, New York 11735
(631) 755-5500

PROXY STATEMENT

ANNUAL MEETING OF SHAREHOLDERS
TO BE HELD ON WEDNESDAY, JANUARY 12, 2000

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, 20(th) Floor, New York, New York, on Wednesday, January 12, 2000, 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 persons named in the enclosed proxy form 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 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 Monday, November 29, 1999.

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 Tuesday, November 23, 1999 are entitled to vote at the Annual Meeting (the

"Record Date"). On the Record Date there were issued and outstanding 25,112,818 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) if 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.

NAME AND ADDRESS OF BENEFICIAL OWNER	AMOUNT AND NATURE OF BENEFICIAL OWNERSHIP (1)	PERCENT OF CLASS (2)
<S>	<C>	<C>
Elazar Rabbani, Ph.D.....	1,837,817(3)	7.2%
Shahram K. Rabbani.....	1,840,095(4)	7.2%
Barry W. Weiner.....	1,114,140(5)	4.4%
J. Morton Davis.....	1,745,740(6)	7.0%
John B. Sias.....	123,478(7)	*
John J. Delucca.....	31,263(8)	*
Dean Engelhardt, Ph.D.....	196,136(9)	*
Norman Kelker, Ph.D.....	126,069(10)	*
All directors and executive officers as a group (10 persons).....	5,457,364(11) (12)	20.6%

* 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 25,112,818 shares of Common Stock of the Company outstanding as of the close of business on the Record Date.
- (3) Includes (i) 339,324 shares of Common Stock issuable upon the exercise of options which are exercisable within 60 days from the date hereof, (ii) 2,998 shares of Common Stock held in the name of Dr. Rabbani as custodian for certain of his children and (iii) 1,784 shares of Common Stock held in the name of Dr. Rabbani's wife as custodian for certain of their children. Does not include 123,750 shares of Common Stock issuable upon the exercise of options which are not exercisable within 60 days from the date hereof.
- (4) Includes (i) 339,324 shares of Common Stock issuable upon the exercise of options which are exercisable within 60 days from the date hereof, (ii) 779 shares of Common Stock held in the name of Mr. Rabbani's son and (iii) 1,444 shares of Common Stock that Mr. Rabbani holds as custodian for certain of his nephews. Does not include 123,750 shares of Common Stock issuable upon the exercise of options which are not exercisable within 60 days from the date hereof.
- (5) Includes (i) 302,248 shares of Common Stock issuable upon the exercise of options which are exercisable within 60 days from the date hereof and (ii) 2,998 shares of Common Stock which Mr. Weiner holds as custodian for certain of his children. Does not include 13,937 shares of Common Stock issuable upon the exercise of options which are not exercisable within 60 days from the date hereof.
- (6) Mr. Davis' address is c/o D.H. Blair Investment Banking Corp., 44 Wall Street, New York, New York 10005. Includes (i) 1,233,178 shares of Common Stock owned by D.H. Blair Investment Banking Corp. of which Mr. Davis is

the Chairman of the Board of Directors and sole shareholder and
(ii) 512,562 shares of Common Stock owned by Engex, Inc., a closed-end
registered investment company of which Mr. Davis is the Chairman of the
Board of Directors.

2

- (7) Includes 61,031 shares of Common Stock issuable upon the exercise of options which are exercisable within 60 days from the date hereof. Does not include 13,938 shares of Common Stock issuable upon the exercise of options which are not exercisable within 60 days from the date hereof.
- (8) Include 31,263 shares of Common Stock issuable upon the exercise of options which are exercisable within 60 days from the date hereof. Does not include 13,938 shares of Common Stock issuable upon the exercise of options which are not exercisable within 60 days from the date hereof.
- (9) Includes 117,436 shares of Common Stock issuable upon the exercise of options which are exercisable within 60 days from the date hereof. Does not include 12,500 shares of Common Stock issuable upon the exercise of options which are not exercisable within 60 days from the date hereof.
- (10) Includes 89,322 shares of Common Stock issuable upon the exercise of options which are exercisable within 60 days from the date hereof. Does not include 10,500 shares of Common Stock issuable upon the exercise of options which are not exercisable within 60 days from the date hereof.
- (11) Includes 1,381,299 shares of Common Stock issuable upon the exercise of options which are exercisable within 60 days from the date hereof. Does not include 470,309 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.
- (12) 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."

3

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 III 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, who currently serve as Class III Directors, to continue such service as Class III Directors. Management has no reason to believe that the nominees will not be candidates or will be unable to serve as directors. However, in the event that any of 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 I and Class II Directors.

CLASS III DIRECTOR NOMINEES TO SERVE UNTIL
THE 2003 ANNUAL MEETING, IF ELECTED:

CLASS III: NEW TERM TO EXPIRE IN 2003

NAME DIRECTOR	AGE	YEAR FIRST BECAME A
Elazar Rabbani, Ph.D.	55	1976
John B. Sias	72	1982

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 I: TERM TO EXPIRE IN 2001

NAME DIRECTOR	AGE	YEAR FIRST BECAME A
Shahram K. Rabbani	47	1976

</TABLE>

CLASS II: TERM TO EXPIRE IN 2002

NAME	AGE	YEAR FIRST BECAME A
Barry W. Weiner	49	1976
John J. Delucca	56	1982

4
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.

NAME	AGE	YEAR BECAME AN EXECUTIVE OFFICER	POSITION
Elazar Rabbani, Ph.D.	55	1976	Chairman of the Board of Directors and Chief Executive Officer
Shahram K. Rabbani	47	1976	Chief Operating Officer, Treasurer, Secretary and Director
Barry W. Weiner	49	1977	President and Director
Norman E. Kelker, Ph.D.	60	1981	Senior Vice President
Dean Engelhardt, Ph.D.	59	1981	Senior Vice President
Herbert B. Bass	51	1995	Vice President of Finance
Barbara E. Thalenfeld, Ph.D.	59	1995	Vice President, Corporate Development
David C. Goldberg	42	1995	Vice President, Business Development
John J. Delucca	56	1982	Director
John B. Sias	72	1982	Director

BIOGRAPHICAL INFORMATION REGARDING DIRECTORS AND EXECUTIVE OFFICERS

ELAZAR RABBANI, PH.D., a Class III Director nominee, has served as Chairman of the Board of Directors and Chief Executive Officer of the Company since the Company's inception in 1976 and has served as the Company's President from its inception to November 1996. Dr. Rabbani currently serves as a Class III Director whose term expires in 2000. Dr. Rabbani received his B.A. degree from New York University in Chemistry and his Ph.D. degree in Biochemistry from Columbia University. He is a member of the American Society for Microbiology. Elazar Rabbani is Shahram K. Rabbani's brother and Barry W. Weiner's brother-in-law.

SHAHRAM K. RABBANI has served as Chief Operating Officer and Secretary of the Company since November 1996, as Executive Vice President from September 1981 to November 1996 and as Vice President, Treasurer and a Director since the Company's inception in 1976. Mr. Shahram K. Rabbani currently serves as a Class I Director whose term expires in 2001. Mr. Shahram K. Rabbani received a B.A. degree in Chemistry from Adelphi University. Shahram Rabbani is Elazar Rabbani's brother and Barry W. Weiner's brother-in-law.

BARRY W. WEINER has served as President of the Company since November 1996 and as a Director of the Company since its inception in 1976. Mr. Weiner has served as Executive Vice President of the Company from September 1981 to November 1996, as a Vice President of the Company from the Company's inception to November 1996 and as Secretary of the Company from March 1980 to November 1996. He was employed by Colgate-Palmolive Company, New York, New York from August 1974 until March 1980, when he joined the Company on a full-time basis. Mr. Weiner received his B.A. degree in Economics from New York University and an M.B.A. from Boston University. Barry W. Weiner is the brother-in-law of Elazar Rabbani and Shahram K. Rabbani, both of whom are brothers.

NORMAN E. KELKER, PH.D. has been a Vice President of the Company since September 1981. Effective January 1, 1989, he was promoted to Senior Vice President. From 1975 until he joined the Company, Dr. Kelker was an Associate Professor in the Department of Microbiology of the New York University School of Medicine. He holds a Ph.D. from Michigan State University.

DEAN ENGELHARDT, PH.D. has been Vice President since September 1981. Effective January 1, 1989, he was promoted to Senior Vice President. Prior to joining the Company, he was an Associate

Professor of Microbiology at Columbia University College of Physicians and Surgeons. He obtained his Ph.D. from Rockefeller University.

HERBERT B. BASS is Vice President of Finance and has been with the Company since 1986. Prior to his position as Vice President of Finance, Mr. Bass was the Corporate Controller of the Company. From 1979 to 1986, Mr. Bass held various positions at Danziger & 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, C.P.A. Mr. Bass holds a Bachelor degree in Business Administration from Baruch College.

BARBARA E. THALENFELD, PH.D. is Vice President of Corporate Development and has been with the Company since 1982. Prior to joining the Company, she held an NIH research fellowship at Columbia University. She received a Ph.D. from Hebrew University-Hadassah Medical Center and an M.S. from Yale University.

DAVID C. GOLDBERG is Vice President of Business Development. Prior to joining the Company in 1985, he was employed at DuPont NEN Products. He received an M.S. from Rutgers University and an M.B.A. from New York University.

JOHN J. DELUCCA, currently a Class II Director Nominee whose term expires in 2002, has been a Director of the Company since January 1982. Since January 1999, Mr. Delucca has been Chief Financial Officer and Executive Vice President, Finance and Administration of Coty, Inc. 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 the Chief Financial Officer and Managing Director of Hascoe Associates, Inc. From October 1, 1990 until January 1992, he served as President and Chief Financial Officer of The Lexington Group, Ltd. From September 1988 until September 1990, he has served as Senior Vice President--Finance of The Trump Group. From May 1986 until August 1988, he served as Senior Vice President--Finance at International Controls Corp. From February 1985 until May 1986, he was a Vice President and Treasurer of Textron, Inc. Prior to that he was a Vice President and Treasurer of the Avco Corporation, which was acquired by Textron.

JOHN B. SIAS, a Class III Director Nominee, has been a Director of the Company since January 1982. Since April 1993, Mr. Sias has been President and Chief Executive Officer of Chronicle Publishing Company. From January 1986 until December 1992, Mr. Sias served as President of ABC Television Network Division and Executive Vice President, 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.

MEETINGS OF THE BOARD OF DIRECTORS

During the fiscal year ended July 31, 1999, there were five (5) formal meetings of the Board of Directors, several actions by unanimous consent and several informal meetings. The Board of Directors has an Audit Committee and Stock Option Committee, each of which was organized in November 1982. During the fiscal year ended July 31, 1999, there was one (1) formal meeting of the Audit Committee and the Stock Option Committee had three (3) formal meetings. Each director of the Company attended at least 75% of all Board meetings during the fiscal year ended July 31, 1999.

COMMITTEES OF THE BOARD OF DIRECTORS

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, to review the scope of the annual audit, to approve or disapprove each professional service or type of service other than standard auditing services to be provided by the auditors, and to review and

6

discuss the audited financial statements with the auditors. Its members are Shahram K. Rabbani, John B. Sias (a Class III Director nominee) and John J. Delucca.

The Stock Option Committee has the plenary authority in its discretion to determine the purchase price of the Common Stock issuable upon the exercise of each option, to determine the employees to whom, and the time or times at which options shall be granted and the number of shares to be issuable upon the exercise of each option, to interpret the plans, to prescribe, amend and rescind rules and regulations relating to them, to determine the term and provisions of the respective option agreements and to make all other determinations deemed necessary or advisable for the administration of the plans. Its members are John B. Sias (a Class III Director Nominee) and John J. Delucca.

The Company does not have a formal Compensation Committee, Nominating Committee or Executive Committee of the Board of Directors.

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.

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 which commenced on December 20, 1989 and terminates on November 30, 2004 provides for a minimum net annual rent of \$515,000 through December 31, 1996 and \$818,250 for the period beginning January 1, 1997, subject to annual cost of living adjustments. During fiscal 1999, Enzolabs paid \$1,050,609 (including \$129,690 in real estate taxes) to Pari with respect to such facility. 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.

7

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, 1999 (each, a "Named Executive Officer") for services during the fiscal years ended July 31, 1999, 1998 and 1997:

SUMMARY COMPENSATION TABLE

<TABLE>
<CAPTION>

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	1999	\$282,237	\$145,000	110,000
	1998	\$271,043	\$145,000	52,500
	1997	\$256,088	\$120,000	--
Shahram K. Rabbani, CHIEF OPERATING OFFICER, TREASURER, SECRETARY AND DIRECTOR	1999	\$251,996	\$120,000	110,000
	1998	\$235,783	\$120,000	52,500
	1997	\$211,155	\$100,000	--
Barry W. Weiner, PRESIDENT AND DIRECTOR	1999	\$251,996	\$120,000	110,000
	1998	\$235,783	\$120,000	52,500
	1997	\$211,156	\$100,000	--
Dean Engelhardt, Ph.D., SENIOR VICE PRESIDENT	1999	\$166,154	\$30,000	15,000
	1998	\$156,731	\$25,000	--
	1997	\$152,306	\$20,000	--
Norman Kelker, Ph.D., SENIOR VICE PRESIDENT	1999	\$143,078	\$15,000	13,000
	1998	\$140,540	\$15,000	--
	1997	\$142,155	\$15,000	--

</TABLE>

The Company does not have a Compensation Committee or other board committee performing equivalent functions. During the fiscal year ended July 31, 1999, deliberations concerning executive officer compensation were made by the Company's Board of Directors, which board includes Elazar Rabbani, Ph.D. (Chairman of the Board and Chief Executive Officer of the Company and a Class III Director nominee), Shahram K. Rabbani (Chief Operating Officer, Secretary and Treasurer of the Company), Barry W. Weiner (President of the Company), John J. Delucca and John B. Sias (a Class III Director nominee).

8

OPTION/SAR GRANTS IN LAST FISCAL YEAR

<TABLE>

<CAPTION>

POTENTIAL REALIZABLE VALUE
AT ASSUMED ANNUAL RATES
OF STOCK PRICE APPRECIATION
FOR OPTION TERM

INDIVIDUAL GRANTS

NAME	NUMBER OF SECURITIES UNDERLYING OPTION/SARS GRANTED (#)	PERCENT OF TOTAL OPTIONS/SARS GRANTED TO EMPLOYEES IN FISCAL YEAR	EXERCISE OR BASE PRICE (\$ / SH)	EXPIRATION DATE	POTENTIAL REALIZABLE VALUE AT ASSUMED ANNUAL RATES OF STOCK PRICE APPRECIATION FOR OPTION TERM	
					5% (\$)	10% (\$)
<S>	<C>	<C>	<C>	<C>	<C>	<C>
Elazar Rabbani, Ph.D.,..... CHAIRMAN OF THE BOARD OF DIRECTORS AND CHIEF EXECUTIVE OFFICER	50,000 60,000	8.3% 9.9%	\$6.625 \$10.125	10/01/08 6/30/09	\$208,321 \$382,053	\$537,927 \$968,199
Shahram K. Rabbani,..... CHIEF OPERATING OFFICER, TREASURER, SECRETARY AND DIRECTOR	50,000 60,000	8.3% 9.9%	\$6.625 \$10.125	10/01/08 6/30/09	\$208,321 \$382,053	\$537,927 \$968,199
Barry W. Weiner,..... PRESIDENT AND DIRECTOR	50,000 60,000	8.3% 9.9%	\$6.625 \$10.125	10/01/08 6/30/09	\$208,321 \$382,053	\$537,927 \$968,199
Dean Engelhardt, Ph.D.,..... SENIOR VICE PRESIDENT	10,000 5,000	1.7% *	\$6.625 \$10.125	10/01/08 6/30/09	\$41,664 \$31,838	\$105,585 \$80,683
Norman Kelker, Ph.D.,..... SENIOR VICE PRESIDENT	10,000 3,000	1.7% *	\$6.625 \$10.125	10/01/08 6/30/09	\$41,664 \$19,103	\$105,585 \$48,410

* Less than 1%.

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

The following table sets forth certain information with respect to stock
option exercises by the Named Executive Officers and Messrs. John B. Sias and
John J. Delucca (both of whom serve as Outside Directors of the Company's Board
of Directors) during the fiscal year ended July 31, 1999 and the value of
unexercised options held by them at fiscal year-end.

<TABLE>
<CAPTION>

AT	SHARES OF COMMON	VALUE REALIZED (\$)	NUMBER OF UNEXERCISED OPTIONS AT		VALUE OF UNEXERCISED IN-THE-MONEY OPTIONS	
			FISCAL YEAR END#	FISCAL YEAR END (\$)		
(1)						
	STOCK ACQUIRED ON EXERCISE (#)	VALUE REALIZED (\$)	EXERCISABLE	UNEXERCISABLE	EXERCISABLE	
<S>	<C>	<C>	<C>	<C>	<C>	<C>
Elazar Rabbani, Ph.D..... \$1,238,125	--	--	339,324	123,750	\$3,437,558	
Shahram K. Rabbani..... \$1,238,125	--	--	339,324	123,750	\$3,437,558	
Barry W. Weiner..... \$1,238,125	--	--	302,248	123,750	\$3,224,076	
Dean Engelhardt, Ph.D..... \$146,563	--	--	117,436	12,500	\$1,658,988	
Norman Kelker, Ph.D..... \$127,313	--	--	89,322	10,500	\$1,529,107	
John B. Sias..... \$133,997	--	--	61,031	13,938	\$482,240	
John J. Delucca..... \$133,997	--	--	31,263	13,938	\$248,078	

(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, Messrs. Weiner and Rabbani and Dr. Rabbani are currently compensated at a base annual salary of \$250,000, \$250,000 and \$280,000, respectively. Each Executive will also receive an annual bonus, the amount of which shall be determined by the Board of Directors in their 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 is three (3) years from the date of execution of the Employment Agreement with a renewal period of two (2) years, such renewal to occur automatically unless either the Company or the Executive terminates the Employment Agreement upon six (6) months written notice.

COMPENSATION OF DIRECTORS

Each director who is not otherwise an officer or an employee (such director being classified as an "Outside Director") of the Company received \$18,000 in compensation for the fiscal year ended July 31, 1999. Under the Company's 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 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. During fiscal year 1999, each Outside Director received an option to purchase 7,500 shares of Common Stock.

BOARD OF DIRECTORS COMPENSATION 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

10

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 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, 1999, the Company paid Dr. Rabbani an annual salary of \$282,237 and a bonus of \$145,000 and granted Dr. Rabbani stock options to purchase 110,000 shares of the Company's Common Stock. Such compensation was determined pursuant to the Company's employment agreement, dated May 4, 1994, with Dr. Rabbani and was based on the Board's view of Dr. Rabbani's successful performance as Chief Executive Officer. See "Employment Agreements."

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 \$10,000 for 1999). 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 six (6) 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. To date, the Company has made no discretionary contributions to the Plan.

1993 STOCK OPTION PLAN

Under the Company's 1993 Stock Option Plan (the "1993 Plan"), the Company's Board of Directors may grant incentive stock options ("ISOs") and non-qualified stock options ("NQSOs"), as those terms are defined by Section 422 of the Code, to selected key employees, directors, officers, consultants and

11

advisors of the Company to purchase the Company's Common Stock. Options granted under the 1993 Plan generally vest no earlier than six (6) months after the date of grant and cannot be exercised 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 1993 Plan cannot be exercised later than the fifth (5th) anniversary date of the date of grant. The exercise prices of options granted under the 1993 Plan are set by the Board of Directors of the Company, or designated committee. In any event, however, ISOs granted under the 1993 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 1993 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. In October 1998, the Company granted options to certain officer-directors of the Company to purchase up to an aggregate of 150,000 shares of Common Stock. As of the Record Date, of the 1,627,705 shares reserved for issuance upon the exercise of options authorized for grant under the 1993 Plan, 33,000 shares of the Company's Common Stock remain available for issuance upon the exercise of options authorized for grant under the 1993 Plan.

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 (10(th)) 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 can not be exercised later than the fifth (5(th)) 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, 1999, options to purchase up to 128,000 shares of the Company's Common Stock were awarded under the 1994 Plan. As of the Record Date, of the 1,072,352 shares of the Company's Common Stock reserved for issuance upon the exercise of options authorized for grant under the 1994 Plan, 72,000 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 (10(th)) 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 can not be exercised later than the fifth (5(th)) anniversary date of the date of grant. The exercise prices of options granted under

12

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 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, 1999, options to purchase up to 325,500 shares of the Company's Common Stock were awarded under the 1999 Plan. As of the Record Date, of the 950,000 shares of the Company's Common Stock reserved for issuance upon the exercise of options authorized for grant under the 1999 Plan, all 950,000 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 Zurich Insurance Group under a policy effective January 21, 1999, and expiring on January 22, 2000, 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 \$48,000.

This report has been provided by the Board of Directors of the Company.

Elazar Rabbani, Ph.D.
Shahram K. Rabbani
Barry W. Weiner
John J. Delucca
John B. Sias

The compensation report 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 the Company specifically incorporates such report.

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 American Stock Exchange Market Value Index and two peer issuer indices selected on an industry basis. The two peer group indices include: (i) 52 biotechnology companies engaged in the research and development of diagnostic substances and (ii) 21 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.

13

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

EDGAR REPRESENTATION OF DATA POINTS USED IN PRINTED GRAPHIC

<TABLE>
<CAPTION>

<S>	ENZO BIOCHEM, INC. <C>	MEDICAL LABORATORIES <C>	BIOTECHNOLOGY PEERS <C>	AMEX MARKET INDEX <C>
7/29/94	100.00	100.00	100.00	100.00
7/31/95	186.59	104.37	147.36	121.28
7/31/96	160.33	77.78	174.26	124.13
7/31/97	174.15	65.89	184.77	147.53
7/31/98	136.47	55.04	155.53	161.02
7/30/99	229.39	54.98	193.22	165.58

</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, 2000. 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.

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.

14
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, Continental Stock Transfer & Trust Company, 2 Broadway, New York, New York 10004, the Company's transfer agent, has been engaged to solicit proxies on behalf of the Company for a fee, excluding expenses, of approximately \$3,500. 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, 1999 (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 2000 Annual Shareholder Meeting (i) must be received by the Company at its offices no later than August 30, 2000 (91 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 shareholder proposals to be included in the Company's Proxy Statement for that meeting.

DISCRETIONARY PROPOSALS. Shareholders intending to commence their own proxy solicitations and present proposals from the floor of the 2001 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 15, 2000 (45 days preceding the one year anniversary of the Mailing Date). After such date, the Company's proxy in connection with the 2001 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 29, 1999

15

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 Shahram K. Rabbani and Barry W. Weiner 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 23, 1999, at the Annual Meeting of Shareholders to be held on January 12, 2000 or any adjournment thereof.

<TABLE>

<S>	<C>	<C>
PROPOSAL 1.	Election of Elazar Rabbani, Ph.D. and John B. Sias as Class III Directors.	
	// FOR all nominees (except as marked to the contrary below)	// WITHHOLDING AUTHORITY as to all nominees
name	(INSTRUCTION: To withhold authority to vote for any individual nominee, print that nominee's name on the line provided below.)	
PROPOSAL 2.	Withheld for: Ratification of the appointment of Ernst & Young LLP as independent auditors for the fiscal year ending July 31, 2000.	
	// FOR	// AGAINST
		// ABSTAIN

</TABLE>

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: __,

1999/2000 (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.)