

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

SCHEDULE 14A
(Rule 14a-101)

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

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 Under Rule 14a-12.

ENZO BIOCHEM, INC.

(Name of Registrant as Specified in Its Charter)

SHAHRAM K. RABBANI

(Name of Person(s) Filing Proxy Statement if Other Than the Registrant)

Payment of Filing Fee (Check the appropriate box):

No fee required.

Fee computed on table below per Exchange Act Rules 14a-6(i)(1) and 0-11.

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

(2) Aggregate number of securities to which transaction applies:

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

(4) Proposed maximum aggregate value of transaction:

(5) Total fee paid:

Fee paid previously with preliminary materials.

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

(1) Amount Previously Paid:

(2) Form, Schedule or Registration Statement No.:

(3) Filing Party:

(4) Date Filed:

PRELIMINARY COPY, SUBJECT TO COMPLETION, DATED November [*], 2010

2010 ANNUAL MEETING OF
SHAREHOLDERS OF ENZO BIOCHEM, INC.

PROXY STATEMENT OF
SHAHRAM K. RABBANI

This proxy statement and the enclosed Gold proxy card are being furnished to you, the holders of shares of common stock, par value \$.01 per share (the "Common Stock"), of Enzo Biochem, Inc., a New York corporation (the "Company"), in connection with the solicitation by Shahram K. Rabbani, a founder and shareholder of the Company, of proxies for use at the upcoming 2010 Annual Meeting of Shareholders of the Company, scheduled to be held on January 14, 2011 (the "Annual Meeting"), and at any adjournments or postponements of the meeting. This proxy statement and the Gold proxy card are first being furnished to shareholders on or about December [*], 2010.

THIS SOLICITATION IS BEING MADE BY SHAHRAM K. RABBANI AND NOT ON BEHALF OF THE BOARD OF DIRECTORS OF THE COMPANY.

I am soliciting proxies to elect Kenneth G. Geraghty (an "Independent Nominee") to serve as a Class II Director of the Company. I am soliciting your vote in favor of the Independent Nominee because he is independent and has no direct or indirect relationship with any director, officer or employee of the Company. I believe that he will provide an improved voice for the Company's shareholders on the Company's Board of Directors and will be willing to present to the other members of the Company's Board of Directors new ideas and strategies with respect to the Company's ongoing operations and strategic plans. As set out in this Proxy Statement, the Independent Nominee has an extensive background in public company leadership, financial management and the enhancement of shareholder value. I believe that the Independent Nominee will be an advocate for all shareholders and will bring to the Company the independent judgment, experience and perspective that shareholders can trust. I believe that your vote for the Independent Nominee will send a strong message to the Company's existing Board of Directors and management that shareholders want the Company's Board of Directors to address the matters outlined below under "Reasons For Seeking Election of the Independent Nominee."

The Company has disclosed that the record date for determining shareholders entitled to notice of and to vote at the Annual Meeting is November 19, 2010 (the "Record Date"). Shareholders of record at the close of business on the Record Date will be entitled to vote at the Annual Meeting. According to the Company's definitive proxy statement filed with the Securities and Exchange Commission on November 16, 2010 in connection with the Annual Meeting (the "Company Proxy Statement"), on the Record Date, there were 38,946,388 shares of Common Stock issued and outstanding and entitled to vote at the Annual Meeting. Each share of Common Stock is entitled to one vote on all matters to be acted upon at the Annual Meeting.

See "Information About Shahram K. Rabbani and the Independent Nominee" and "Proposal 1--Election of Class II Directors--Certain Information Regarding the Independent Nominee" for information about me and the Independent Nominee.

THE INDEPENDENT NOMINEE IS COMMITTED TO ACTING IN THE BEST INTERESTS OF ALL SHAREHOLDERS. ACCORDINGLY, WE STRONGLY RECOMMEND THAT YOU VOTE TO ELECT THE INDEPENDENT NOMINEE TO SERVE AS A CLASS II DIRECTOR OF THE COMPANY. PLEASE VOTE WITH THE ENCLOSED GOLD PROXY CARD.

To vote FOR the Independent Nominee, you must sign, complete, and return the proxy card that we are furnishing to you or, if your shares are held by a bank or broker, instruct your bank or broker to vote your shares for the Independent Nominee on your behalf.

YOUR VOTE IS IMPORTANT, NO MATTER HOW MANY OR HOW FEW SHARES OF COMMON STOCK YOU OWN. WE URGE YOU TO MARK, SIGN, DATE AND RETURN THE ENCLOSED GOLD PROXY CARD BY MAIL OR TELEPHONE OR VIA THE INTERNET PROMPTLY IN ACCORDANCE WITH THE INSTRUCTIONS SET FORTH BELOW. PLEASE DO NOT SIGN ANY PROXY CARD YOU MAY RECEIVE FROM THE COMPANY. HOLDERS OF SHARES OF COMMON STOCK AS OF THE RECORD DATE ARE URGED TO SUBMIT A GOLD PROXY CARD EVEN IF YOUR SHARES WERE SOLD AFTER THE RECORD DATE.

You are urged to mark, sign, and date the enclosed GOLD PROXY CARD whether or not you plan to attend the Annual Meeting. If you need assistance voting your shares of Common Stock, please call our proxy solicitor, _____, toll-free at 1-800- _____ or 1-212- _____ (call collect) at any time prior to 9:00 a.m., on January 14, 2011.

If you have already sent in the Company's proxy card and wish to change your vote, you have every legal right to do so. Please sign, date, and return the enclosed GOLD PROXY CARD by mail (in the enclosed envelope) or submit your proxy

by telephone or via the internet by following the instructions on the enclosed GOLD PROXY CARD. Only your last dated and signed proxy card will count.

IMPORTANT NOTICE REGARDING INTERNET AVAILABILITY OF PROXY MATERIALS FOR THE ANNUAL MEETING OF SHAREHOLDERS TO BE HELD ON JANUARY 14, 2011:

The Proxy Statement of Shahram K. Rabbani and a form of this proxy card will be available at:

REASONS FOR SEEKING ELECTION OF THE INDEPENDENT NOMINEE

This proxy solicitation is being conducted by Shahram K. Rabbani. Mr. Rabbani has an interest in the matters to be acted upon at the Annual Meeting indirectly through the beneficial and record ownership of the Company's Common Stock. The Independent Nominee is deemed to be a "participant" in this proxy solicitation, as the term participant is defined in Schedule 14A promulgated under the Securities Exchange Act of 1934, as amended (the "Exchange Act"). References to "we," "us," "our" or similar first person plural statements in this proxy statement shall mean Mr. Rabbani and the Independent Nominee, collectively.

Mr. Rabbani is nominating the Independent Nominee in order to send a message to the Company's Board of Directors and management that current management has failed to act in the best interests of the Company's shareholders. Consider these facts:

- ***During each of the last five fiscal years, annual operating expenses have exceeded annual operating revenues.***

According to the Company's publicly available filings, during the Company's last five fiscal years, the Company's annual operating revenues increased from approximately \$39.8 million to \$97.1 million, while the Company's annual operating expenses increased from approximately \$56.8 million to approximately \$119 million.

- ***Since 2005, the Company's common stock has declined more than 72% while management has received substantial compensation.***

The Company's stock price has fallen from a closing price of \$16.78 on July 29, 2005 to a closing price of \$4.60 on July 30, 2010. During the same period, even as the Company failed to generate a profit and incurred aggregate net losses of approximately \$85.37 million, annual compensation paid to the Company's Chairman of the Board, Chief Executive Officer, and Secretary (one person, Dr. Elazar Rabbani) increased from \$695,315 to \$1,309,204, or approximately 88%, and to the Company's President, Chief Financial Officer and Secretary (one person, Mr. Barry Weiner) increased from \$620,192 to \$1,075,367, or approximately 73%, with such two individuals receiving aggregate total compensation of \$10.1 million during such period.

- ***Annual compensation paid to non-employee members of the Company's Board of Directors ranges from approximately \$125,000 to \$165,000 (including restricted stock unite).***

According to the Company's publicly available filings, all non-employee directors receive an annual director's fee of \$25,000 (other than the lead independent director who receives an annual director's fee of \$30,000). In addition, each non-employee director who serves on a committee of the Company's Board of Directors or as chairman of certain committees receives a fee ranging from \$7,500 to \$20,000. Each non-employee director also receives 25,000 restricted stock units, not to exceed a fair market value of \$100,000.

- ***The Company has a staggered Board of Directors consisting of 3 classes of directors who serve for three-year terms.***

Pursuant to the Company's by-laws, the Board of Directors consists of six members, divided into three staggered classes of directors. Each class of directors serves for a term of three years. As a result of the staggered Board of Directors, in order to change the entire composition of the Board of Directors (other than from filling any vacancies), it would be necessary to conduct three Annual Meetings of Shareholders at which the Company's shareholders vote on the election of directors.

BACKGROUND OF THE PROXY SOLICITATION

Shahram K. Rabbani is a co-founder of the Company and served as a director of the Company from its inception in 1976 until November 2009. In addition, from the Company's inception until his termination of his employment agreement with the Company in February 2009, Mr. Rabbani served as an employee and officer of the Company in various capacities with various titles, including Chief Operating Officer, and Chief Financial Officer, and as President of Enzo Clinical Labs, Inc., the Company's largest operating subsidiary.

In recent years, Mr. Rabbani grew increasingly frustrated with the lack of a strategic direction within the Company, the performance of the management team, and the failure by the Board of Directors to implement any strategic or management changes to reverse the tide of increasing annual losses. In January 2009, the Company, through counsel, requested in writing that he amend his employment agreement with the Company to accept a demotion and substantial forfeiture of his responsibilities. Mr. Rabbani rejected this request. Subsequently, on February 19, 2009, the Company advised Mr. Rabbani that he would be replaced as President of Enzo Clinical Labs. Accordingly, on February 26, 2009, he served the Company with notice that, as a result of this demotion, he was terminating his employment agreement with the Company for good reason. The Company responded to Mr. Rabbani's termination for good reason by advising him on March 5, 2009 that he had been terminated for cause, making it clear that all of the severance benefits under his employment agreement would not be paid.

On April 27, 2009, Mr. Rabbani initiated an arbitration against the Company, Dr. Elazar Rabbani, the Company's Chairman of the Board, Chief Executive Officer and Secretary ("Dr. Rabbani"), and Mr. Barry Weiner, the Company's President, Chief Financial Officer, and Treasurer ("Mr. Weiner"), in connection with the separation of his employment from the Company, seeking, among other things, the severance payments and other amounts owed to him under his employment agreement. Dr. Rabbani and Mr. Weiner subsequently filed an action in New York State court requesting a stay of the arbitration as to them. On January 28, 2010, Mr. Rabbani entered into a settlement agreement with the Company pursuant to which all of Mr. Rabbani's claims against the Company, Dr. Rabbani and Mr. Weiner asserted in the arbitration were settled.

On October 14, 2009, Mr. Rabbani engaged an advisory panel and commenced an extensive search for independent director candidates to be considered for nomination for election to the Board of Directors at the 2009 Annual Meeting of Shareholders of the Company. On November 20, 2009, Mr. Rabbani notified the Company by letter that he intended to nominate a slate of independent Class I Directors for election at the 2009 Annual Meeting of Shareholders of the Company scheduled to be held in January 2010. On November 23, 2009, Mr. Rabbani, a member of the Company's Board of Directors as of such time, received a copy of an agenda for a special board meeting to be held on November 25, 2009. The agenda indicated that the date of the 2009 Annual Meeting of Shareholders of the Company would be changed to February 9, 2010. In response to the November 20, 2009 notice, the Company advised Mr. Rabbani that it deemed his exercise of his nomination and voting rights as a stockholder of the Company to be "dissident and adverse actions" and the Board of Directors removed him as Secretary and Treasurer of the Company at its meeting on November 25, 2009.

Pursuant to letters dated November 25, 2009 and December 1, 2009, the Company alleged that Mr. Rabbani's nomination letter did not satisfy the requirements of the Company's by-laws. Such letters did not provide any details regarding the alleged deficiencies. On December 9, 2009, Mr. Rabbani, through counsel, responded to the Company's letters dated November 25, 2009 and December 1, 2009, stating, among other things, that the form and content of Mr. Rabbani's nomination letter fully complied with the Company's by-laws and federal securities laws requirements and demanding a confirmation from the Company that Mr. Rabbani's nominees had been duly nominated. On December 23, 2009, the Company filed a definitive proxy statement with the Securities and Exchange Commission (the "SEC"). The Company's definitive proxy statement indicated that the 2009 Annual Meeting of Shareholders of the Company was scheduled to be held on January 29, 2010.

Pursuant to letter dated December 23, 2009, following Mr. Rabbani's repeated requests and more than one month after receipt of the November 20, 2009 nomination letter, the Company through counsel provided Mr. Rabbani with details regarding the alleged deficiencies with respect to such letter. On January 8, 2010, Mr. Rabbani filed with the SEC a preliminary proxy statement. On January 15, 2010, Mr. Rabbani through counsel received a letter from the SEC containing comments with respect to the preliminary proxy statement. Given the short period of time remaining until the date of the 2009 Annual Meeting of Shareholders of the Company, Mr. Rabbani did not proceed with his proxy solicitation.

On October 29, 2010, Mr. Rabbani notified the Company that he intended to nominate Dr. Frank M. Armstrong and Kenneth G. Geraghty for election to the Company's Board of Directors at the Annual Meeting. Pursuant to a letter dated November 4, 2010, the Company through counsel advised Mr. Rabbani that it had not determined whether Mr. Rabbani's October 29, 2010 nomination letter satisfied the requirements set forth in the Company's by-laws for shareholder nominations of candidates for election as board members. In response to the Company's letter, on November 10, 2010, Mr. Rabbani requested that the Company advise him of any alleged deficiencies in his nomination letter no later than November 19, 2010. Mr. Rabbani did not receive a response to his request by November 19, 2010 or thereafter. The Company filed the Company Proxy Statement with the SEC on November 16, 2010. In the Company Proxy Statement, the Company acknowledged receipt of Mr. Rabbani's October 29, 2010 nomination letter but indicated that it had not determined whether such letter complied with the advance notice requirements of

the Company's by-laws. On November 24, 2010, Dr. Frank M. Armstrong notified Mr. Rabbani that he had accepted an offer of employment, would not be able to serve as a director of the Company if elected, and withdrew his nomination.

Mr. Rabbani has dedicated himself to advancing the best interests of the Company for over thirty years and he is ready, willing, and able to continue to do so. He has nominated Kenneth G. Geraghty for election as a Class II Director at the Annual Meeting to serve as a truly independent director who can bring real change and accountability to the Company and maximize shareholder value.

INFORMATION ABOUT SHAHRAM K. RABBANI AND THE INDEPENDENT NOMINEE

Interests of Mr. Rabbani and the Independent Nominee

As of the date of this proxy solicitation, Mr. Rabbani is the beneficial owner of 1,300,181 shares, or approximately 3.3%, of the Common Stock outstanding as of November 19, 2010, which includes (i) 1,354 shares of Common Stock held in the name of Mr. Rabbani's son, (ii) 1,671 shares of Common Stock that Mr. Rabbani holds as custodian for certain of his nephews, and (iii) 7,995 shares of Common Stock held in the Company's 401(k) plan. As of the date of this proxy solicitation, Mr. Rabbani is the record owner of 138,607 shares, or less than 1%, of the Common Stock outstanding as of November 19, 2010. As of the date of this proxy solicitation, Kenneth G. Geraghty is the beneficial owner of 5,000 shares, or less than 1%, of the Common Stock outstanding as of November 19, 2010.

Within the past two years, Mr. Rabbani purchased or sold the following securities of the Company: on November 18, 2010, Mr. Rabbani sold (i) 10,000 shares of Common Stock for a total sales price of \$43,600, or \$4.36 per share, and (ii) 10,000 shares of Common Stock for a total sales price of \$44,100, or \$4.41 per share. Within the past two years Kenneth G. Geraghty purchased or sold the following securities of the Company: on or about November 23, 2010, he purchased (i) 1,000 shares of Common Stock for a total purchase price of \$4,354, or \$4.354 per share, (ii) 1,000 shares of Common Stock for a total purchase price of \$4,349.20, or \$4.3492 per share, (iii) 1,000 shares of Common Stock for a total purchase price of \$4,353.90, or \$4.3539 per share, and (iv) 2,000 shares of Common Stock for a total purchase price of \$8,703.20, or \$4.3516 per share.

Except as set forth in this proxy statement, neither Mr. Rabbani, the Independent Nominee, nor any of their respective associates (within the meaning of Rule 14a-1 of the Exchange Act) (i) is the record owner of any securities of the Company, (ii) owns beneficially, directly or indirectly, any securities of the Company, (iii) owns beneficially, directly or indirectly, any securities of any parent or subsidiary of the Company, (iv) has purchased or sold any securities of the Company within the past two years, (v) has incurred indebtedness for the purpose of acquiring or holding securities of the Company, (vi) is or has within the past year been a party to any contract, arrangement or understanding with respect to any securities of the Company, (vii) since the beginning of the Company's last fiscal year has been indebted to the Company or any of its subsidiaries, or (viii) has an arrangement or understanding with respect to any future employment by the Company or its affiliates or with respect to any future transactions to which the Company or any of its affiliates will or may be a party. In addition, except as set forth in this proxy statement, neither Mr. Rabbani, the Independent Nominee, nor any member of the immediate family of such persons, has had or is to have a direct or indirect material interest in any transaction or series of transactions or currently proposed transaction to which the Company or any of its subsidiaries was or is to be a party, in which the amount involved exceeds \$120,000, since the beginning of the Company's last fiscal year.

Neither Mr. Rabbani, the Independent Nominee nor any of their respective associates, since the beginning of the Company's last fiscal year, has been affiliated with (i) any entity that made or received, or during the Company's current fiscal year proposes to make or receive, payments to or from the Company or its subsidiaries for property or services in excess of five percent of either the Company's or such entity's consolidated gross revenues for its last full fiscal year, or (ii) any entity to which the Company or its subsidiaries were indebted at the end of the Company's last full fiscal year in an aggregate amount exceeding five percent of the Company's total consolidated assets at the end of such year. The Independent Nominee is not, nor during the Company's last fiscal year has been, affiliated with any law or investment banking firm that has performed or proposes to perform services for the Company.

Except as set forth in this proxy statement, none of the corporations or organizations in which Mr. Rabbani or the Independent Nominee has conducted his principal occupation or employment was a parent, subsidiary, or other affiliate of the Company, and the Independent Nominee does not hold any employment position or office with the Company or have any family relationship with any executive officer or director of the Company. The Independent Nominee has not been involved in any proceedings, legal or otherwise, of the type required to be disclosed by the rules governing this solicitation.

Neither the Independent Nominee nor any of his associates has received any cash compensation, cash bonuses, deferred compensation, compensation pursuant to plans, or other compensation, from, or in respect of, services rendered on behalf of the Company that is required to be disclosed under Item 402 of Regulation S-K ("Regulation S-K"), or is subject to any arrangement described in Item 402 of Regulation S-K. Other than as described below under the heading "Proposal 1—Election of Class II Directors—Compensation of Company Directors," Mr. Rabbani is not aware of any other arrangements pursuant to which outside directors of the Company were to be compensated for services during the Company's last fiscal year.

Shahram K. Rabbani is the brother of Dr. Rabbani, the Company's Chairman of the Board, Chief Executive Officer and Secretary, and the brother-in-law of Mr. Weiner, the Company's President, Chief Financial Officer, and Treasurer. Except as set forth herein above, there are no family relationships (as defined in Item 401(d) of Regulation S-K) between the Independent Nominee and any director or executive officer of the Company. Except as disclosed in this proxy statement, there are no arrangements or understandings between Shahram K. Rabbani and the Independent Nominee or any other person or persons with respect to the nomination of the Independent Nominee.

Mr. Rabbani is a co-founder of the Company and served as a director of the Company from 1976 until November 2009. He also was an employee and officer of the Company in various capacities with various titles from 1976 until March 2009. Mr. Rabbani is currently retired and does not have a business address.

Enzo Clinical Labs, Inc., a subsidiary of the Company, leases a facility in Farmingdale, New York from Pari Management Corporation (“Pari”). Pari is owned equally by Mr. Rabbani, Dr. Rabbani and Mr. Weiner and his wife, who are officers and directors of Pari. The lease originally commenced on December 20, 1989, but was amended and extended in March 2005 and now terminates on March 31, 2017. During the fiscal year ended July 31, 2010, Enzo Labs paid approximately \$1,470,000 (including approximately \$150,000 in real estate taxes) to Pari with respect to such facility and future payments are subject to cost of living adjustments.

Mr. Rabbani believes that the Independent Nominee would be considered an independent director of the Company within the meaning of Item 407(a) of Regulation S-K, and would be independent of the Company under the Independence Standards applicable to the Company under Section 303A.02 of the Listed Company Manual of the New York Stock Exchange.

There are no material proceedings to which the Independent Nominee or any of his associates is a party adverse to the Company or any of its subsidiaries or has a material interest adverse to the Company or any of its subsidiaries. During the past ten years the Independent Nominee was not involved in any event that would be required to be disclosed under Item 401(f) of Regulation S-K. The information in this proxy statement regarding the Independent Nominee has been furnished to Mr. Rabbani by the Independent Nominee.

Please see “Proposal 1—Election of Class II Directors” for additional information about the Independent Nominee.

THE PROPOSALS

According to the Company Proxy Statement with respect to the Annual Meeting, the following proposals will be presented at the Annual Meeting:

- Proposal 1: Election of Class II Directors
- Proposal 2: Approval and Adoption of the Company's 2011 Incentive Plan
- Proposal 3: Ratification of Appointment of Independent Registered Public Accounting Firm

Mr. Rabbani is soliciting proxies from the shareholders of the Company to elect the Independent Nominee to fill one of the two seats of the Company's Class II directorships that expire at the Annual Meeting (Proposal 1). **We therefore urge shareholders to vote FOR Proposal 1 on the enclosed GOLD proxy card. Mr. Rabbani is also soliciting proxies to take action with respect to the other proposals that the Company has announced will be voted at the Annual Meeting (collectively, the "Other Proposals"). Mr. Rabbani makes no recommendation with respect to the Other Proposals.**

If you have signed, dated and returned the enclosed **GOLD** proxy card or transmitted your voting instructions by telephone or via the internet by following the instructions on the enclosed **GOLD** proxy card, but no direction is given with respect to Proposal 1 (Election of Class II Directors), your shares will be voted for the Independent Nominee. If you have signed, dated and returned the enclosed **GOLD** proxy card or transmitted your voting instructions by telephone or via the Internet by following the instructions on the enclosed **GOLD** proxy card, but no direction is given with respect to the Other Proposals, your shares will be voted for the Other Proposals.

Except as set forth above, Mr. Rabbani does not know of any other business that will be presented at the Annual Meeting. If, however, other matters are properly presented but are unknown a reasonable time prior to this solicitation and you have signed, dated and returned the enclosed **GOLD** proxy card or transmitted your voting instructions by telephone or via the Internet by following the instructions on the enclosed **GOLD** proxy card, the proxies will vote the shares represented thereby in their best judgment in relation to such business. You will not be able to choose how your shares will be voted with respect to any such business.

PROPOSAL 1
ELECTION OF CLASS II DIRECTORS

The Company's Board of Directors is currently comprised of six directors, divided into three staggered classes of directors, each of which serves for a term of three years. At the Annual Meeting, two of the six directors will be up for election.

Background of Mr. Rabbani's Nomination of the Independent Nominee

On October 29, 2010, Mr. Rabbani notified the Company of his intent to nominate a slate of two directors for election as Class II Directors at the Annual Meeting. Subsequent to such notification, Dr. Frank M. Armstrong advised Mr. Rabbani that he was withdrawing his nomination. Kenneth G. Geraghty has agreed to be nominated for election and to serve as a Class II Director of the Company, if elected. Mr. Rabbani is proposing the election of the Independent Nominee, Mr. Geraghty, to serve as a Class II Director for a term of three years expiring at the Company's annual meeting of shareholders to be held in January 2014 and until his successor has been elected and qualified. See "-- Certain Information Regarding the Independent Nominee" below for information concerning the background and experience of Mr. Geraghty.

Reasons to Vote For the Independent Nominee

We believe that adding a new, highly qualified, outside voice in the boardroom to represent the interests of all shareholders of the Company will send a message to the Company's Board of Directors and management that shareholders are dissatisfied with the manner in which the Company has been conducting business. We believe that the Independent Nominee has the background, talent and experience to effectively advocate for shareholders and, if elected, will seek to maximize shareholder value. See "-- Certain Information Regarding the Independent Nominee" for details regarding Mr. Geraghty's relevant business experience.

The Independent Nominee, if elected, and consistent with his fiduciary duties, will advocate that the other members of the Company's Board of Directors consider the following actions on behalf of the Company:

- amending the Company's by-laws to remove the staggered board and to provide that all directors will be elected on an annual basis;
- reviewing the amount of compensation paid to non-employee directors;
- reviewing the terms and conditions of the employment agreements of Dr. Rabbani and Mr. Weiner, including, but not limited to, the provisions relating to the amount of compensation and severance payments payable thereunder, and the duties and obligations of such individuals and either terminating, amending or not renewing such agreements;
- examining the operations of the Company with an eye toward maximizing shareholder value by reviewing (i) management compensation to ensure alignment of management's interests with that of common shareholders; (ii) operating expenses and ways to reduce costs; (iii) the Company's patent and invention portfolio and current licensing program; and (iv) the Company's financial statements for any other efficiencies; and
- declaring and paying a dividend on the Common Stock, if appropriate, based on a review of the Company's financial statements and financial condition.

We note that, if elected, the Independent Nominee would serve with the Company's other five directors and, therefore, would not constitute a majority of the Company's Board of Directors and/or be able to accomplish these goals without the support of additional members of the Company's Board of Directors. The Independent Nominee has consented to being named herein as a nominee or director of the Company, has agreed to stand for election as a director, and has agreed to serve if elected.

The Independent Nominee will not receive any compensation from me or any of my affiliates for his services as a director of the Company if elected.

Compensation of Company Directors

According to the Company's publicly available information as of the date of this proxy statement, if the Independent Nominee is elected as a Class II Director of the Company (each such director, an "Outside Director") as a non-employee and non-officer of the Company, he would receive an annual fee of \$25,000. In addition, each Outside Director who serves on a committee of the Company's Board of Directors receives an annual fee of \$7,500. The chairman of the Audit Committee receives an additional annual fee of \$20,000 and the chairman of the Compensation Committee and the Nominating/Governance Committee receive an additional annual fee of \$10,000. Each Outside Director also receives either restricted stock units or restricted stock awards immediately following the Annual Meeting, provided such person is a director of the Company at such time. Effective January 1, 2011, the number of restricted stock units that each Outside Director will be granted is 25,000, not to exceed a fair market value of \$100,000 per year. The Company also reimburses its directors for their travel and related expenses in conjunction with attending board meetings and board-related activities.

The Independent Nominee, if elected, would be indemnified by the Company for service as a director to the same extent indemnification is provided to other directors under the Company's organizational documents. In addition, I believe that, upon election, the Independent Nominee would be covered by the Company's officer and director liability insurance, if any, and would be entitled to any other benefits available to the other directors of the Company.

All information regarding the Company's director compensation and benefits arrangements set forth in this proxy statement is derived solely from the Company's public filings with the SEC and Mr. Rabbani disclaims any responsibility for the foregoing.

WE STRONGLY URGE YOU TO VOTE FOR THE ELECTION OF THE INDEPENDENT NOMINEE BY SIGNING, DATING, AND RETURNING THE GOLD PROXY CARD TODAY IN THE ENCLOSED POSTAGE-PAID ENVELOPE OR BY FOLLOWING THE INSTRUCTIONS ON THE ENCLOSED GOLD PROXY CARD AND VOTING BY TELEPHONE OR VIA THE INTERNET.

Certain Information Regarding the Independent Nominee

Set forth below is the name, age, business address, principal business address of any organization in which his present employment is conducted, present principal occupation, employment history and directorships of the Independent Nominee for at least the past five years. This information has been furnished to Mr. Rabbani by the Independent Nominee, who has consented to serve as a director of the Company.

Kenneth G. Geraghty, age 60, does not now, nor has he ever, held a position or office with the Company. Since September 2009, Mr. Geraghty has served as a consultant to each of the following companies: Gerson Lehrman Group, Guidepoint Global LLC, Primary Insight and DeMatteo Monness LLC. In such capacity, Mr. Geraghty provides advice to the clients of these firms, including hedge funds, private equity firms and portfolio managers, in the areas of property and casualty risk management insurance technology solutions. Since February 2010, he has served as a member of the advisory board of Resilient Capital Managers, LLC, a company that provides marketing assistance for asset securitizations, insurance securitizations and structured finance transactions. Since March, 2010, Mr. Geraghty has also served as a member of the advisory board of Crossroads Data, Inc., a start-up company that proposes to provide electronic accident reports and citation reports created by police agencies to insurance companies and other parties. Further, Mr. Geraghty has been a member of the advisory board of Zyme Solutions Inc., a provider of data integrity solutions to the high tech industry, since October 2007. From June 2005 to February 2010, he also was Chairman of the Named Fiduciaries of the Pension Plan for Insurance Organizations, a 78 employer pension plan with approximately 11,000 participants. Since February 2010, Mr. Geraghty has served as Managing Fiduciary of the Pension Plan for Insurance Organizations. As Chairman and Managing Fiduciary, he was and remains responsible for directing the activities of all vendors to the plan. From February 2000 to March 2007, Mr. Geraghty served as Executive Vice President and Chief Financial Officer of Insurance Services Office, Inc. (now known as Verisk Analytics, Inc. (NASDAQ:VRSK)), a publicly traded company which offers risk-assessment services and decision analytics to professionals in many fields. From December 2002 to March 2007, he also served on the Board of Directors of clickNsettle.com, Inc., a public company now known as Cardo Medical, Inc. Mr. Geraghty received a B.S. in Chemical Engineering from Columbia University School of Engineering and an M.S. in Chemical Engineering from the University of California at Berkeley. He also received an MBA with a concentration in finance from Harvard Business School. Mr. Geraghty's business address is 74 Great Road, Jaffrey, New Hampshire 03452. The principal business address of the Pension Plan for Insurance Organizations is c/o Jeffrey Mamorsky, Esq., Greenberg Traurig, LLP, 200 Park Avenue, New York, New York 10166.

During his tenure at Insurance Services Office, Mr. Geraghty was responsible for helping increase revenues from approximately \$300 million to approximately \$735 million and increasing the EBITDA margin from less than 20% to over 40%. In addition, he was an instrumental player in such company's acquisition of more than 15 businesses.

Except as set forth in this proxy statement, the Independent Nominee does not have any substantial interest, direct or indirect, by security holdings or otherwise, in any matter to be acted upon at the Annual Meeting. During the past ten years, the Independent Nominee (i) has not been convicted in a criminal proceeding or named the subject of a pending criminal proceeding (excluding traffic violations or similar misdemeanors) and (ii) was not involved in any event that would be required to be disclosed under Item 401(f) of Regulation S-K.

Except as set forth in this proxy statement, there are no arrangements or understandings between the Independent Nominee and any other person pursuant to which the Independent Nominee was or is to be selected as a nominee for election as a Class II Director. There exist no family relationship between the Independent Nominee and any director or executive officer of the Company.

PROPOSAL 2 APPROVAL AND ADOPTION OF THE 2011 INCENTIVE PLAN

According to the Company Proxy Statement, the Company will present a proposal at the Annual Meeting to approve and adopt the Company's 2011 Incentive Plan. Adoption of the 2011 Incentive Plan requires approval by a majority of the votes cast by holders of shares of Common Stock at the Annual Meeting and entitled to vote on such proposal, provided that the total votes cast on Proposal 2 represent over 50% of all shares entitled to vote. Additional information concerning Proposal 2 and the Company's 2011 Incentive Plan can be found under the heading "Proposal 2—Approval and Adoption of the 2011 Incentive Plan" that begins on page 25 of the

Company Proxy Statement. Mr. Rabbani disclaims any responsibility for the accuracy or completeness of the information regarding Proposal 2 and the Company's 2011 Incentive Plan set forth in the Company Proxy Statement.

You may have your shares voted for Proposal 2 by marking the box titled "FOR" under Proposal 2 on the enclosed **GOLD** proxy card and signing, dating and returning it in the accompanying postage-paid envelope. You may have your shares voted against Proposal 2 by marking the box titled "AGAINST" under Proposal 2 on the enclosed **GOLD** proxy card and signing, dating and returning it in the accompanying postage-paid envelope. You may abstain from voting with respect to Proposal 2 by marking the box titled "ABSTAIN" under Proposal 2 on the enclosed **GOLD** proxy card and signing, dating and returning it in the accompanying postage-paid envelope. You may also submit a proxy by telephone or via the Internet by following the instructions set forth on the enclosed **GOLD** proxy card. **If your GOLD proxy card is signed and dated but no direction is given with respect to Proposal 2, your shares will be voted for Proposal 2.**

MR. RABBANI MAKES NO RECOMMENDATION WITH RESPECT TO PROPOSAL 2.

PROPOSAL 3
RATIFICATION OF APPOINTMENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

According to the Company Proxy Statement, the Company's Board of Directors has appointed Ernst & Young LLP as the Company's independent registered public accounting firm, to audit the Company's accounts for the fiscal year ending July 31, 2011. The Company is asking the Company's shareholders to ratify such appointment.

You may have your shares voted for Proposal 3 by marking the box titled "FOR" under Proposal 3 on the enclosed **GOLD** proxy card and signing, dating and returning it in the accompanying postage-paid envelope. You may have your shares voted against Proposal 3 by marking the box titled "AGAINST" under Proposal 3 on the enclosed **GOLD** proxy card and signing, dating and returning it in the accompanying postage-paid envelope. You may abstain from voting with respect to Proposal 3 by marking the box titled "ABSTAIN" under Proposal 3 on the enclosed **GOLD** proxy card and signing, dating and returning it in the accompanying postage-paid envelope. You may also submit a proxy by telephone or via the Internet by following the instructions set forth on the enclosed **GOLD** proxy card. **If your GOLD proxy card is signed and dated but no direction is given with respect to Proposal 3, your shares will be voted for Proposal 3.**

MR. RABBANI MAKES NO RECOMMENDATION WITH RESPECT TO PROPOSAL 3.

SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

The following information is based solely on Mr. Rabbani's review of the Company's publicly available information filed with the Securities and Exchange Commission (the "SEC").

The following table sets forth the information supplied by the Company in the Company Proxy Statement, filed with the SEC on November 16, 2010, regarding the number and percentage of shares of the Common Stock beneficially owned on November 19, 2010, the record date for the Annual Meeting, (1) by each person who is a beneficial owner of more than 5% of the Common Stock, (2) by each current director and each Class II Director nominee of the Company, (3) by each named executive officer of the Company and (4) by all of the Company's current directors, nominees for Class II Director and executive officers as a group. According to the Company, unless 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)
Elazar Rabbani, Ph.D.	2,139,568 (3)	5.4%
Barry W. Weiner	1,340,860 (4)	3.4%
Carl W. Balezentis, Ph.D.	20,007 (5)	*
Dr. Kevin Krenitsky	7,850	*
Andrew R. Crescenzo, CPA	19,873 (6)	*
Irwin C. Gerson	93,344 (7)	*
Stephen B.H. Kent, Ph.D.	9,654	*
Bernard L. Kasten, M.D.	26,654	*
Clearbridge Advisors, LLC	4,458,875 (8)	11.45%
J. Morton Davis	3,044,000 (9)	7.82%
Black Rock, Inc.	2,547,846 (10)	6.54%
All Directors and executive officers as a group (13 persons) (11)	3,968,068 (12)	9.98%

* Represents beneficial ownership of 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., 527 Madison Avenue, New York, New York 10022.

(2) Based upon 38,946,388 shares of Common Stock outstanding as of the close of business on November 19, 2010. Common Stock not outstanding but deemed beneficially owned by virtue of the right of an individual to acquire shares within 60 days from the date is treated as outstanding only when determining the amount and percentage of Common Stock owned by such individual.

(3) Includes (i) 325,842 shares of Common Stock issuable upon the exercise of options which are exercisable within 60 days from the date hereof, (ii) 3,469 shares of Common Stock held in the name of Dr. Rabbani as custodian for certain of his children, (iii) 2,168 shares of Common Stock held in the name of Dr. Rabbani's wife as custodian for certain of their children, (iv) an aggregate of 5,100 shares of Common Stock held in the name of Dr. Rabbani's children and (v) 9,793 shares of Common Stock held in the Company's 401(k) plan.

(4) Includes (i) 325,842 shares of Common Stock issuable upon the exercise of options which are exercisable within 60 days from the date hereof, (ii) 3,642 shares of Common Stock that Mr. Weiner holds as custodian for certain of his children and (iii) 9,800 shares of Common Stock held in the Company's 401(k) plan.

(5) Includes (i) 4,783 shares of Common Stock held in the Company's 401(k) plan and (ii) 2,500 shares of restricted Common Stock that vest within 60 days from the date hereof.

(6) Includes (i) 4,783 shares of Common Stock held in the Company's 401(k) plan and (ii) 2,000 shares of Common Stock that vest within 60 days from the date hereof.

- (7) Includes 54,690 shares of Common Stock issuable upon the exercise of options which are exercisable within 60 days from the date hereof.
- (8) The address of each entity in the group is 620 8th Ave, New York, New York 10022. This information is based solely on a Schedule 13G filed on February 11, 2010.
- (9) Mr. Davis' address is D.H. Blair Investment Banking Corp., 44 Wall Street, New York, New York 10005. Includes (i) 33,425 shares owned directly by Mr. Davis, (ii) 1,024,345 shares owned directly by Blair Investment, (iii) 698,596 shares owned by Engex, Inc., (iv) 12,733 shares owned by an investment advisor whose principal is Mr. Davis and (v) 1,274,931 shares owned by Rosalind Davidowitz, Mr. Davis' wife. This information is based solely on a Schedule 13G filed on February 3, 2010.
- (10) Blackrock, Inc. acquired Barclays Global Investors from Barclays Bank PLC. The address of this entity is 40 East 52nd Street, New York, New York 10022. This information is based solely on a Schedule 13G filed on January 20, 2010.
- (11) The total number of directors and executive officers includes four (4) executive officers or key employees who were not named under "Security Ownership of Certain Beneficial Owners and Management."
- (12) Includes 791,498 shares of Common Stock issuable upon the exercise of options which are exercisable within 60 days from the date hereof and 6,000 shares of restricted stock vesting within 60 days from the date hereof.

SOLICITATION OF PROXIES

Mr. Rabbani has retained [*] to act as an advisor and to provide solicitation services for a fee estimated not to exceed \$[*], plus expenses. Mr. Rabbani also has agreed to indemnify [*] against certain liabilities, including liabilities arising under the federal securities laws. Proxies may be solicited by mail, facsimile, telephone, internet, and by advertisements. It is anticipated that [*] will employ approximately [*] persons to solicit the Company's shareholders at the Annual Meeting.

Banks, brokerage houses and other custodians, nominees and fiduciaries will be requested to forward the proxy materials to the beneficial owners of Common Stock for which they hold of record and Mr. Rabbani will reimburse them for their reasonable out-of-pocket expenses.

The expenses related directly to this proxy solicitation are expected to aggregate approximately \$[*] and will be borne by Mr. Rabbani. These expenses include fees and expenses for attorneys, proxy solicitors, printing, postage, filing expenses, and other costs incidental to the solicitation. Of this estimated amount, approximately \$[*] has been spent to date. The actual costs and expenses could be materially different than the estimated amounts and, in particular, could be substantially higher if for any reason litigation is instituted in connection with the matters related to this proxy statement.

The purpose of the proposals in this proxy statement is to advance the interests of all the Company's shareholders. Therefore, Mr. Rabbani believes that his expenses related to this proxy solicitation should be borne by the Company and he intends to seek reimbursement of such expenses from the Company whether or not this proxy solicitation is successful. The question of reimbursement of the expenses of Mr. Rabbani by the Company will not be submitted to a shareholder vote.

If you have any questions about this proxy solicitation or voting your shares or require assistance, please contact:

[*]

OTHER MATTERS

This proxy solicitation is being made by Shahram K. Rabbani and not on behalf of the Company's Board of Directors or management of the Company. Except as set forth in this proxy statement, Mr. Rabbani is not aware of any other matters to be brought before the Annual Meeting.

The Company is subject to the periodic reporting requirements of the Exchange Act and, in accordance therewith, is required to file reports, proxy statements and other information with the SEC. Reports, registration statements, proxy statements and other information filed by the Company with the SEC may be inspected at, and copies may be obtained from, the public reference facilities maintained at the SEC at 100 F Street, N.E., Washington, DC 20549. Copies of such material can also be obtained upon written request addressed to the SEC, Public Reference Section, 100 F Street, N.E., Washington, DC 20549, at prescribed rates. You may obtain information on the operation of the SEC's Public Reference Room by calling the SEC at (800) SEC-0330. The SEC also maintains a web site on the Internet (<http://www.sec.gov>) where reports, proxy and information statements and other information regarding issuers and others that file electronically with the SEC may be obtained free of charge.

I have omitted from this proxy statement certain disclosure required by applicable law to be included in the Company Proxy Statement. Such disclosure includes, among other things, information concerning executive compensation, and information concerning the procedures for submitting shareholder proposals and director nominations intended for consideration at the annual meeting of shareholders of the Company to be held in January 2012 and for consideration for inclusion in the proxy materials for that meeting. Please refer to the Company Proxy Statement for such information. I take no responsibility for the accuracy or completeness of information contained in the Company Proxy Statement.

INFORMATION REGARDING THE COMPANY

The information concerning the Company contained in this proxy statement has been taken from or is based upon the Company Proxy Statement, other documents and records on file with the SEC, and other publicly available information. I have no knowledge that would indicate that statements relating to the Company contained in this proxy statement in reliance upon publicly available information are inaccurate or incomplete.

VOTING PROCEDURES

Who is entitled to vote?

Only holders of Common Stock of record at the close of business on November 19, 2010 will be entitled to notice of and to vote at the Annual Meeting. Each share of Common Stock is entitled to one vote on all matters to come before the Annual Meeting. On November 19, 2010, the Record Date for the Annual Meeting, the Company had issued and outstanding 38,946,388 shares of Common Stock.

Shareholders of Record. If, on the Record Date, your shares were registered directly in your name with the Company's transfer agent, American Stock Transfer & Trust Company, then you are a shareholder of record. As a shareholder of record, you may vote in person at the meeting or vote by proxy.

Beneficial Owners. If, on the Record Date, your shares were not held in your name, but rather were held in an account at a brokerage firm, bank or other nominee (commonly referred to as being held in "street name"), you are the beneficial owner of those shares. The organization holding your account is considered to be the shareholder of record for purposes of voting at the Annual Meeting. As a beneficial owner, you have the right to direct your broker or other nominee regarding how to vote the shares held in your account. You are also invited to attend the Annual Meeting. However, since you are not the shareholder of record, you may not vote your shares in person at the meeting unless you obtain a valid legal proxy from your broker or other nominee and bring the legal proxy to the Annual Meeting. If you want to attend the Annual Meeting, but not vote at the Annual Meeting, you must provide proof of beneficial ownership as of the Record Date, such as your most recent account statement prior to the Record Date. Please contact [*] with any questions or should you need assistance toll-free at 1-800-[*] or 1-212-[*] (call collect).

What constitutes a quorum?

The presence, in person or by proxy, of the holders of a majority of the outstanding shares of Common Stock as of the Record Date must be present, in person or by proxy, at the Annual Meeting to constitute a quorum for the transaction of business at the Annual Meeting. Broker non-votes will be counted for purposes of determining whether a quorum exists. Votes withheld for director nominees and abstentions on the other proposals to be considered at the Annual Meeting will be counted in determining whether a quorum has been reached, but the failure to execute and return a proxy will result in a shareholder not being considered present at the meeting. If a quorum is not present at the Annual Meeting, we expect that the Annual Meeting will be adjourned or postponed to solicit additional proxies subject to any limitations set forth in the Company's by-laws.

How is each proposal to be adopted at the Annual Meeting?

If a quorum is present, the votes required for the three proposals to be considered at the Annual Meeting and the treatment of abstentions and broker non-votes in respect of such proposals are as follows:

- Proposal 1: The two nominees for Class II Directors receiving the most affirmative votes "for" their election will be elected to serve as Class II directors. Abstentions and broker non-votes will not be voted with respect to the election of Class II Director-nominees.
- Proposal 2: The affirmative vote of a majority of the votes cast by holders of shares of Common Stock present, in person or represented by proxy, at the Annual Meeting and entitled to vote on such proposal is required to approve Proposal 2, provided that the total "votes cast" on Proposal 2 represent over 50% of all shares entitled to vote. Abstentions will have the same effect as votes against the proposal and broker non-votes will not have any effect on the outcome of this proposal.
- Proposal 3: The affirmative vote of a majority of the votes cast by holders of shares of Common Stock present, in person or represented by proxy, at the Annual Meeting, and entitled to vote on such proposal is required to ratify and approve Proposal 3. Abstentions will have the same effect as votes against the proposal and broker non-votes will not have any effect on the outcome of this proposal.

When are the votes due?

Shares represented by proxies on the enclosed **GOLD** proxy card will be counted in the vote at the Annual Meeting only if you **GOLD** proxy card is submitted prior to the closing of the polls at the Annual Meeting.

How do I vote?

You may vote your shares of Common Stock at the Annual Meeting in one of four ways.

- *At the Meeting.* Shares held in your name as the shareholder of record may be voted by you in person at the Annual Meeting. Shares held beneficially in street name may be voted by you in person at the Annual Meeting only if you obtain a legal

proxy from the broker or other agent that holds your shares, giving you the right to vote the shares, and you bring the legal proxy to the Annual Meeting.

• *By Telephone.* To vote by telephone, follow the instructions on the enclosed **GOLD** proxy card. Your telephone vote authorizes the proxies to vote your shares of Common Stock in the same manner as if you had signed and returned a **GOLD** proxy card.

• *By Internet.* To vote via the Internet, follow the instructions on the enclosed **GOLD** proxy card. Internet voting procedures are designed to authenticate your identity, allow you to have your shares of Common Stock voted and confirm that your instructions have been properly recorded. Your submission of a proxy via the Internet authorizes the proxies to vote your shares of Common Stock in the same manner as if you had signed and returned a **GOLD** proxy card.

• *By Mail.* To vote by mail, you must complete the **GOLD** proxy card, complete all of the required information on the proxy card, date and sign the proxy card, and return the proxy card in the postage-paid envelope provided as soon as possible.

If you are not the shareholder of record and hold shares through a custodian, broker or other agent, such agent may have special voting instructions that you should follow. Please refer to the voting instruction form sent to you for information on voting.

What should I do if I receive a proxy card which is not Gold?

If you submit a proxy to us by signing and returning the enclosed **GOLD** proxy card, do NOT sign or return the proxy card or follow any voting instructions provided by the Company's Board of Directors unless you intend to change your vote, because only your latest-dated proxy will be counted.

Can I revoke my proxy instructions?

Yes. You may revoke or change your vote by:

- submitting a later-dated proxy by telephone or via the Internet
- submitting a properly executed, later-dated proxy that will revoke all proxies submitted by telephone, via the Internet or by prior proxy cards
- sending a written notice of revocation either to [*], or the Secretary of the Company at Enzo Biochem, Inc., 527 Madison Avenue, New York, New York 10022, if received the day before the Annual Meeting
- if you are a beneficial owner, by following the instructions sent to you by your broker, bank or other agent or
- revoking the grant of a previously submitted proxy and voting in person at the Annual Meeting. Please note that your attendance at the Annual Meeting itself will not revoke a proxy.

Although a revocation is effective if delivered to the Company, I request that either the original or a copy of any revocation be mailed to [*], so that I will be aware of all revocations.

If you previously signed and returned a proxy card to the Company, we urge you to revoke it by (1) signing, dating, and returning the **GOLD** proxy card by mail or by telephone or via the Internet by following the instructions on the enclosed **GOLD** proxy card, (2) attending the Annual Meeting and voting in person, or (3) delivering a written notice of revocation to [*] or to the Secretary of the Company.

Will other matters be voted on at the Annual Meeting?

Mr. Rabbani is not aware of any matters to be presented at the Annual Meeting other than a vote for the election of Class II Directors, the approval and adoption of the Company's 2011 Incentive Plan and the ratification of the appointment of the independent registered public accounting firm.

If I plan to attend the Annual Meeting, should I still submit a proxy?

Whether you plan to attend the Annual Meeting or not, Mr. Rabbani urges you to submit a proxy. Returning the enclosed **GOLD** proxy card by mail, or by telephone or via the Internet will not affect your right to attend the Annual Meeting.

How can I obtain directions to be able to attend the Annual Meeting and vote in person?

According to the Company Proxy Statement, the Annual Meeting will be held at The Yale Club, 50 Vanderbilt Avenue, New York, New York 10017. You may obtain directions to the venue by contacting [*] toll-free at 1-800-[*] or 1-212-[*] (call collect).

How will my shares be voted?

If you give a proxy by mail on the accompanying **GOLD** proxy card or by telephone or via the Internet by following the voting instructions on the accompanying **GOLD** proxy card, your shares will be voted as you direct. Shares as to which a proxy is submitted to Mr. Rabbani without instructions will be voted in favor of Proposals 1 through 3. Unless a proxy specifies otherwise, it will be presumed to relate to all shares held of record on the Record Date for the Annual Meeting by the person who submitted it.

How can I receive more information?

If you would like an additional copy of this Proxy Statement or a copy of any other proxy material made available by Shahram K. Rabbani, please visit his free website at [*]. You may access, download and print all proxy materials made available by Shahram K. Rabbani including this Proxy Statement at this website. If you have any questions about giving your proxy or about this solicitation, or if you require assistance, please call [*] toll-free at 1-800-[*] or 1-212-[*] (call collect).

Your vote is important. No matter how many or how few shares you own, please vote to elect the Independent Nominee by marking, signing, dating, and mailing the enclosed GOLD proxy card promptly or by following the instructions on the enclosed GOLD proxy card and voting by telephone or via the Internet.

Shahram K. Rabbani
December [*], 2011

Use the Internet to submit your proxy until 11:59 p.m., Eastern time, on January 13, 2011. Have your **GOLD** proxy card in hand when you access the Web site listed above and follow the instructions provided.

VOTE BY TELEPHONE

Use any touch-tone telephone to submit your proxy until 11:59 p.m., on January 13, 2011. Have your **GOLD** proxy card in hand when you call and follow the instructions provided.

VOTE BY MAIL

Please mark, sign, date and promptly mail your **GOLD** proxy card using the postage-paid envelope provided or return your **GOLD** proxy card to: _____.

IMPORTANT NOTICE REGARDING THE AVAILABILITY OF PROXY MATERIALS FOR THE ANNUAL MEETING

The Proxy Statement is, and all other soliciting materials filed by Mr. Rabbani after the date of the Proxy Statement will be, available at www._____.com.

TO SUBMIT A PROXY BY MAIL, DETACH ALONG THE PERFORATION, MARK, SIGN, DATE AND RETURN THE BOTTOM PORTION PROMPTLY USING THE ENCLOSED ENVELOPE

SHAHRAM K. RABBANI

GOLD PROXY CARD

PRELIMINARY COPY, SUBJECT TO COMPLETION

THIS PROXY IS SOLICITED ON BEHALF OF SHAHRAM K. RABBANI FOR USE AT THE 2010 ANNUAL MEETING OF SHAREHOLDERS OF ENZO BIOCHEM, INC.

This proxy is solicited on behalf of Shahram K. Rabbani, and not on behalf of the Board of Directors of Enzo Biochem, Inc., a New York corporation (“Enzo”). The undersigned shareholder of Enzo hereby appoints Shahram K. Rabbani and Kenneth G. Geraghty, and each of them, proxies and attorneys-in-fact, with full power of substitution and resubstitution, on behalf of and in the name of the undersigned, to represent the undersigned at the 2010 Annual Meeting of Shareholders of Enzo to be held on January 14, 2011 at 9:00 a.m., Eastern Time, at The Yale Club, 50 Vanderbilt Avenue, New York, New York 10017, and at any adjournment, postponement, continuation or rescheduling thereof (the “**Meeting**”), to vote all shares of common stock, \$.01 par value per share, of Enzo, which the undersigned would be entitled to vote at the Meeting, as specified herein, and in the discretion of such persons upon all other matters as may properly come before the Meeting, and the undersigned revokes any proxies previously provided with respect to the matters covered by this proxy.

The shares represented by this proxy will be voted as directed. If no direction is indicated, the proxies will vote the shares represented by this proxy for Proposals 1-3 (Proposals 1-3 are described on the reverse). The proxies will vote on such other matters as may properly come before the Meeting, in the proxies’ discretion, including with respect to matters which Mr. Rabbani did not know a reasonable time before beginning solicitation of proxies that are to be presented at the Meeting.

The undersigned acknowledges receipt of the Proxy Statement of Shahram K. Rabbani dated December __, 2010.

_____, 2011
Shareholder Sign Here Date

Title

_____, 2011
Shareholder (Joint-Owner) Sign Here Date

Please sign exactly as your name appears on this proxy. When shares are held by joint tenants, both should sign. When signing as attorney, executor, 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.

YOUR VOTE IS IMPORTANT!

Please take a moment now to submit a proxy with respect to your shares of Enzo Biochem, Inc. common stock for the 2010 Annual Meeting of Shareholders.

PLEASE REVIEW THE PROXY STATEMENT AND SUBMIT A PROXY IN ONE OF THREE WAYS. (See reverse side for instructions.)

You may submit a proxy by telephone or Internet 24 hours a day, 7 days a week. Your telephone or Internet vote authorizes the named proxies to vote your shares in the same manner as if you had marked, signed and returned a **GOLD** proxy card.

TO SUBMIT A PROXY BY MAIL, DETACH ALONG THE PERFORATION, MARK, SIGN AND RETURN THE BOTTOM PORTION PROMPTLY USING THE ENCLOSED ENVELOPE.

SHAHRAM K. RABBANI RECOMMENDS A VOTE FOR PROPOSAL 1. SHAHRAM K. RABBANI MAKES NO RECOMMENDATION WITH RESPECT TO PROPOSALS 2 AND 3.

1. To elect the following individual to serve as a Class II Director of Enzo for a term of three (3) years.

KENNETH G. GERAGHTY

FOR

**WITHHOLD AUTHORITY
to vote for the nominee listed above**

Proposal 1 is not subject to, or conditioned upon, the effectiveness of the other Proposals.

2. To approve and adopt Enzo's 2011 Incentive Plan.

FOR

AGAINST

ABSTAIN

3. To ratify the appointment of Ernst & Young LLP as Enzo's independent registered public accounting firm for Enzo's fiscal year ending July 31, 2011.

FOR

AGAINST

ABSTAIN

(continued, and please sign on reverse side)

November 24, 2010

Via EDGAR

Securities & Exchange Commission Division of Corporate Finance
100 F Street, N.E.
Washington, D.C. 20549

Re: Enzo Biochem, Inc.
Preliminary Proxy Statement on Schedule 14A filed November 24, 2010
Filed by Shahram K. Rabbani

Ladies and Gentlemen:

Filed with this letter is the Preliminary Proxy Statement and form of Proxy of Shahram K. Rabbani. The attached documents relate to the 2010 Annual Meeting of Shareholders of Enzo Biochem, Inc. scheduled for January 14, 2011.

Please direct any and all comments with respect to this filing at your earliest practical convenience to the undersigned at 516-383-6203.

Very truly yours,

Shahram K. Rabbani
