

UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
WASHINGTON, DC 20549

**SCHEDULE 14A**

**Proxy Statement Pursuant to Section 14(a) of the Securities Exchange Act of 1934**

Filed by the Registrant

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Check the appropriate box:

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**Enzo Biochem, Inc.**

\_\_\_\_\_  
(Name of Registrant as Specified in Its Charter)

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(4) Date Filed:

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February 14, 2020

Dear All Shareholders of Enzo Biochem, Inc.:

As announced on January 28, 2020, the Enzo board of directors (the "Board") has made a series of changes to the agenda for the upcoming 2019 Annual Meeting of Shareholders (the "Annual Meeting") taking into account direct feedback received following significant investor outreach and engagement with our top shareholders, including Harbert Discovery Fund, LP and Harbert Discovery Co-Investment Fund I, LP (together with certain affiliates, "Harbert"). In order to allow shareholders sufficient time to review the accompanying proxy supplement (the "Second Supplement"), the Annual Meeting scheduled for January 31, 2020 will be adjourned and reconvened on February 25, 2020.

As a result of the changes to the agenda and the Board withdrawing Bruce A. Hanna as a director candidate, the director candidates nominated by Harbert (the "Harbert Nominees") will now run unopposed as candidates for election as Class II Directors. In addition, Enzo is proposing to shareholders: (1) to amend the By-Laws to increase the size of the Board from five to six directors and provide the Board discretion to further increase or decrease the size of the Board between five and seven and (2) if the shareholders approve the Board expansion, to vote to elect Barry W. Weiner as a Class III Director to the Board. The Board intends to appoint a new, highly qualified and experienced, diverse independent director in the near future.

Accordingly, the Company has revised its proxy card to reflect these changes. We encourage you to review the Second Supplement for additional information about the Annual Meeting that has been updated.

**Even if you previously submitted a white or blue proxy card, we urge you to fill out and submit the enclosed GOLD proxy card today.** The GOLD proxy card enclosed with the Second Supplement differs from the proxy cards previously furnished to you with the Proxy Statement dated December 5, 2019 (the "Proxy Statement") or the first supplement to the Proxy Statement dated December 31, 2019 (the "First Supplement"). The enclosed GOLD proxy card reflects the proposal to expand the Board in addition to the Company's director nominees.

Any proxy or voting instruction form may be revoked at any time prior to its exercise at the Annual Meeting, as described in the Proxy Statement. Only your latest dated and signed proxy card or voting instruction form will be counted. If you have already voted on the previously distributed white proxy card or on the blue proxy card provided by Harbert and you do not submit a GOLD proxy card or voting instruction form, your previously submitted proxy or voting instruction form will still be voted at the Annual Meeting, but you will not be able to vote on the proposal to expand the Board or the election of Mr. Weiner as a Class III Director. If you would like to cast your vote in favor of the proposal to expand the Board or the election of Mr. Weiner, you must fill out and submit the enclosed GOLD proxy card.

If you previously submitted a white or blue proxy card, votes cast for either Mr. Weiner and/or Dr. Hanna will not be counted with respect to the proposal to elect two Class II Directors as neither Mr. Weiner nor Dr. Hanna remain up for election as Class II Directors. Votes cast on the white proxy card will no longer be counted for purposes of electing Mr. Weiner to the Board as Mr. Weiner is now up for election as a director of a different class for a different term. Dr. Hanna no longer stands for election as a director of any class. However, votes cast on any of the other remaining proposals using either of the two white proxy cards will be counted. Furthermore, even though the proposal to elect two Class II Directors has been redesignated as proposal 2, any votes cast in favor of the Harbert Nominees on the blue proxy card provided by Harbert will still be counted.

**THE BOARD UNANIMOUSLY RECOMMENDS VOTING "FOR" THE EXPANSION OF THE BOARD AND "FOR" THE ELECTION OF EACH OF REBECCA J. FISCHER AS A**

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**CLASS I DIRECTOR AND BARRY W. WEINER AS A CLASS III DIRECTOR USING THE ENCLOSED GOLD PROXY CARD. THE BOARD MAKES NO RECOMMENDATION AND IS NOT OPPOSING THE HARBERT NOMINEES.**

While the Board makes no recommendation on the election of the Harbert Nominees as Class II Directors, the Board is not nominating any opposing candidates, essentially assuring the election of the Harbert Nominees. In accordance with New York law and the By-Laws, directors will be elected by a plurality of the votes cast at the shareholder meeting. This means that the director candidate receiving the highest number of "FOR" votes will be elected. Since the Board has not proposed any director candidates to oppose the Harbert Nominees, assuming Harbert or any other shareholder votes for the Harbert Nominees, both will be elected to the Board. However, shareholders voting using the enclosed GOLD proxy card will be unable to cast a vote with respect to the Harbert Nominees and shareholders wishing to vote for the Harbert Nominees must vote on a blue proxy card provided by Harbert.

**YOUR VOTE IS IMPORTANT**

Your vote at the Annual Meeting is important. To assure that your shares are represented at the Annual Meeting, we urge you to date, sign and return the enclosed GOLD proxy card in the postage-paid envelope provided, or vote by telephone or the Internet as instructed on the GOLD proxy card, whether or not you plan to attend the Annual Meeting. If you previously submitted a proxy card or a voting instruction form for the Annual Meeting, such proxy card or voting instruction form will continue to be valid and will be voted at the Annual Meeting. If your shares are held for your account by a broker or other nominee, you should have already received instructions from the holder of record that you must follow for your shares to be voted.

**Please read the Proxy Statement and First Supplement that were previously made available to shareholders and the enclosed Second Supplement in their entirety, as the proposals have been updated in this Second Supplement and, together, they contain all of the information that is important to your decisions in voting at the Annual Meeting.**

On behalf of your Board of Directors, we thank you for your continued support.

February 14, 2020

By Order of the Board of Directors,

/s/ Barry W. Weiner

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Barry W. Weiner

President, Treasurer and Director

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## NOTICE OF 2019 ANNUAL MEETING OF SHAREHOLDERS

**To be convened on January 31, 2020 and adjourned and reconvened on February 25, 2020**

To All Shareholders of Enzo Biochem, Inc.:

**NOTICE IS HEREBY GIVEN** that the 2019 Annual Meeting of Shareholders of Enzo Biochem, Inc., a New York corporation (the "Company"), will convene at The Yale Club of New York City, 50 Vanderbilt Avenue, New York, NY 10017, on January 31, 2020, at 9:00 a.m. New York City time and then immediately adjourn to be reconvened on February 25, 2020, at 9:00 a.m. New York City time at the same location (including any adjournments, postponements or continuations thereof, the "Annual Meeting"), for the following purposes:

1. To approve an amendment to the Company's By-Laws to increase the maximum size of the Board from five (5) to six (6) members, and provide the discretion to the Board to increase or decrease the size of the Board within the range of five (5) and seven (7) directors;
2. To elect two directors to the Company's Board of Directors (the "Board") as Class II Directors for a term of three (3) years or until their respective successors have been duly elected and qualified;
3. To elect one director to the Board as a Class I Director for a term of two (2) years or until her successor has been duly elected and qualified;
4. If proposal No. 1 is approved by the shareholders, to elect one director to the Board as a Class III Director for a term of one (1) year or until his successor has been duly elected and qualified;
5. To approve, by a nonbinding advisory vote, the compensation of the Company's Named Executive Officers;
6. To ratify the Company's appointment of EisnerAmper LLP to serve as the Company's independent registered public accounting firm for the Company's fiscal year ending July 31, 2020;
7. To approve an amendment to the Company's By-Laws to implement majority voting in uncontested director elections; and
8. To transact such other business as may properly come before the Annual Meeting.

The accompanying supplement (including all annexes attached thereto, the "Second Supplement") to the proxy statement filed by the Company with the SEC on December 5, 2019 (the "Proxy Statement") and the first supplement to the Proxy Statement dated December 31, 2019 (the "First Supplement") provide detailed information about the matters to be considered at the Annual Meeting. As further described in this Second Supplement, the Company will convene and then immediately adjourn—without conducting any business or holding discussions related to the proposals to be voted upon—the Annual Meeting originally scheduled to occur at 9:00 a.m., New York City time, on January 31, 2020, and reconvene at 9:00 a.m. New York City time, on February 25, 2020.

Following significant investor outreach and engagement with our top shareholders, the Board has determined that it is in the best interests of the Company to expand the size of the Board at this time, withdraw Bruce A. Hanna as a director candidate, allow the director candidates nominated by Harbert Discovery Fund, LP and Harbert Discovery Co-Investment Fund I, LP (together with certain affiliates, "Harbert") to run unopposed for the Class II Director positions and, if the shareholders approve the Board expansion, elect Barry W. Weiner to the expanded Board as a Class III Director. The Board also intends to appoint a new, highly qualified independent director in the near future.

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Based on feedback received from its shareholders, the Board has added a proposal for consideration at the Annual Meeting to increase the maximum size of the Board from five to six directors and provide the Board discretion to further increase or decrease the size of the Board between five and seven directors. The Board has also changed its recommendations and nominees for election to the Board, withdrawing Bruce A. Hanna as a director candidate and allowing the Harbert Nominees to run unopposed as candidates for election as Class II Directors. If the proposal to increase the size of the Board is approved, shareholders will also be asked to vote on an election proposal to elect Barry W. Weiner as a Class III Director to the Board. Accordingly, the Board has revised its proxy card to reflect these changes. We encourage you to review the Second Supplement for more updated information about the Annual Meeting.

The Board strongly urges you not to sign or return any proxy card sent to you by Harbert. Any proxy or voting instruction form may be revoked at any time prior to its exercise at the Annual Meeting, as described in the Proxy Statement. Only your latest dated and signed proxy card or voting instruction form will be counted. If you have already voted on a previously distributed proxy card or on the blue proxy card provided by Harbert and you do not submit a **GOLD** proxy card or voting instruction form, your previously submitted proxy or voting instruction form will still be voted at the Annual Meeting, but you will not be able to vote on the proposal to expand the Board or Mr. Weiner as a Class III Director. If you would like to cast your vote in favor of the proposal to expand the Board or the election of Mr. Weiner you must fill out and submit the enclosed **GOLD** proxy card.

If you previously submitted a white or blue proxy card, votes cast for either Mr. Weiner and/or Dr. Hanna will not be counted with respect to the proposal to elect two Class II Directors as neither Mr. Weiner nor Dr. Hanna remain up for election as Class II Directors. Votes cast on the white proxy card will no longer be counted for purposes of electing Mr. Weiner to the Board as Mr. Weiner is now up for election as a director of a different class for a different term. Dr. Hanna no longer stands for election as a director of any class. However, votes cast on any of the other remaining proposals using either of the two white proxy cards will be counted. Furthermore, even though the proposal to elect two Class II Directors has been redesignated as proposal 2, any votes cast in favor of the Harbert Nominees on the blue proxy card provided by Harbert will still be counted.

**THE BOARD UNANIMOUSLY RECOMMENDS VOTING “FOR” THE EXPANSION OF THE BOARD AND “FOR” THE ELECTION OF EACH OF REBECCA J. FISCHER AS A CLASS I DIRECTOR AND BARRY W. WEINER AS A CLASS III DIRECTOR USING THE ENCLOSED GOLD PROXY CARD. THE BOARD MAKES NO RECOMMENDATION ON AND IS NOT OPPOSING THE HARBERT NOMINEES.**

While the Board makes no recommendation on the election of the Harbert Nominees as Class II Directors, it is not nominating any opposing candidates, essentially assuring the election of the Harbert Nominees. In accordance with New York law and the By-Laws, directors will be elected by a plurality of the votes cast at the shareholder meeting. This means that the director candidate receiving the highest number of “**FOR**” votes will be elected. Since the Board has not proposed any director candidates to oppose the Harbert Nominees, assuming Harbert or any other shareholder votes for the Harbert Nominees, both will be elected to the Board. However, shareholders voting using the enclosed **GOLD** proxy card will be unable to cast a vote with respect to the Harbert Nominees and shareholders wishing to vote for the Harbert Nominees must vote on a blue proxy card provided by Harbert.

**It is extremely important that your shares be represented and voted at the Annual Meeting. Whether or not you plan to attend the Annual Meeting, please vote as soon as possible. We urge you to date, sign and return the GOLD proxy card in the envelope provided to you, or to use the telephone or Internet method of voting described on your GOLD proxy card, even if you plan to attend the Annual Meeting, so that if you are unable to attend the Annual Meeting, your shares can be voted.** Voting now will not limit your right to change your vote or to attend the Annual Meeting. If you should be present at the Annual Meeting and desire to vote in person, you may withdraw your proxy. If your shares are held in the name of a broker, bank or other holder of record, follow the voting instructions you received from the holder of record in order to vote your shares. Please note that in order to be permitted entrance to the Annual Meeting you will be asked to present proof that you are a shareholder of the Company as well as valid government-issued picture identification, such as a driver’s license or passport. The use of cameras, recording devices and other electronic devices (including mobile phones) will be prohibited at the Annual Meeting.

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Please carefully read the Proxy Statement and First Supplement that were previously made available to shareholders and the enclosed Second Supplement in their entirety, as the proposals have been updated in the Second Supplement and the Second Supplement explains the proposals to be considered by and acted upon by you at the Annual Meeting.

The Board has fixed the close of business on December 3, 2019 as the record date for the determination of holders of record of the Company's common stock entitled to notice of, and to vote at, the Annual Meeting. The record date has not changed as a result of the changes to the agenda. A list of shareholders of record of the Company as of the record date will remain open for inspection at the continuation of the Annual Meeting until the closing of the polls thereat.

We appreciate your continued interest in the Company. We look forward to greeting as many of our shareholders as possible at the Annual Meeting. If you have any questions or require any assistance with voting your shares, or if you need additional copies of the proxy materials, please contact Investor Relations at (212) 583-0100 or our proxy solicitor, Kingsdale Advisors, at:

**Kingsdale Advisors**

(888) 518-1554 (toll-free in North America)

(416) 867-2272 (outside of North America)

email: [ENZ@kingsdaleadvisors.com](mailto:ENZ@kingsdaleadvisors.com)

February 14, 2020

By Order of the Board of Directors,

/s/ Barry W. Weiner

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Barry W. Weiner

President, Treasurer and Director

**ALL HOLDERS OF RECORD OF THE COMPANY'S COMMON STOCK (WHETHER THEY INTEND TO ATTEND THE ANNUAL MEETING OR NOT) ARE STRONGLY ENCOURAGED TO COMPLETE, SIGN, DATE AND RETURN PROMPTLY THE GOLD PROXY CARD ENCLOSED WITH THE ACCOMPANYING SECOND SUPPLEMENT.**

**IMPORTANT NOTICE REGARDING THE AVAILABILITY OF PROXY MATERIALS FOR THE SHAREHOLDER MEETING TO BE CONVENED ON JANUARY 31, 2020 AND ADJOURNED AND RECONVENED ON FEBRUARY 25, 2020**

This Notice of Annual Meeting of Shareholders, the Proxy Statement, the First Supplement, the enclosed Second Supplement, the Company's 2019 Annual Report on Form 10-K and Form 10-K/A for the fiscal year ended July 31, 2019, and form of **GOLD** proxy card, and any amendments thereto, are available free of charge at <http://www.enzo.com/corporate/investor-information/enzo-sec-filings>. Information on our website does not constitute part of the Company's proxy solicitation materials.

Shareholders may also obtain a copy of these materials by writing to Enzo Biochem, Inc., 527 Madison Avenue, New York, NY 10022, Attention: Investor Relations. Upon payment of a reasonable fee, shareholders may also obtain a copy of the exhibits to our Annual Report on Form 10-K and Form 10-K/A for our fiscal year ended July 31, 2019. Any request for such materials should be delivered to the Company before February 7, 2020 to facilitate timely delivery.

For information on how to obtain directions to be able to attend the Annual Meeting and vote in person, please write to the Company's principal corporate office at 527 Madison Avenue, New York, NY 10022, Attention: Investor Relations or call (212) 583-0100 requesting such information.

**THE BOARD UNANIMOUSLY RECOMMENDS VOTING "FOR" EXPANSION OF THE BOARD, "FOR" THE ELECTION OF EACH OF REBECCA J. FISCHER AS A CLASS I DIRECTOR, "FOR" THE ELECTION OF BARRY W. WEINER AS A CLASS III DIRECTOR, "FOR" PROPOSAL 5, "FOR" PROPOSAL 6 AND "FOR" PROPOSAL 7 USING THE ENCLOSED GOLD PROXY CARD. THE BOARD MAKES NO RECOMMENDATION ON THE HARBERT NOMINEES.** While the Board makes no direct recommendation on the election of the Harbert Nominees as Class II Directors, it is not opposing their candidacy, essentially assuring their

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election. In accordance with New York law and the By-Laws, directors are elected by a plurality of the votes cast at the shareholder meeting. This means that the director candidate receiving the highest number of “**FOR**” votes will be elected. Since the Board is not nominating any director candidates to oppose the Harbert Nominees, assuming Harbert or any other shareholder votes for them, both Harbert Nominees will be elected to the Board. However, shareholders voting using the enclosed **GOLD** proxy card will be unable to cast a vote with respect to the Harbert Nominees and shareholders wishing to vote for the Harbert Nominees must vote on a blue proxy card provided by Harbert.

If you previously submitted a white or blue proxy card, votes cast for either Mr. Weiner and/or Dr. Hanna will not be counted with respect to the proposal to elect two Class II Directors as neither Mr. Weiner nor Dr. Hanna remain up for election as Class II Directors. Votes cast on the white proxy card will no longer be counted for purposes of electing Mr. Weiner to the Board as Mr. Weiner is now up for election as a director of a different class for a different term. Dr. Hanna no longer stands for election as a director of any class. However, votes cast on any of the other remaining proposals using either of the two white proxy cards will be counted. Furthermore, even though the proposal to elect two Class II Directors has been redesignated as proposal 2, any votes cast in favor of the Harbert Nominees on the blue proxy card provided by Harbert will still be counted.

Kingsdale Advisors is assisting us with our effort to solicit proxies. Therefore, requests for the above materials can also be made to Kingsdale Advisors through the following channels: (1) by calling (888) 518-1554 (toll-free in North America); (2) by calling (416) 867-2272 (outside of North America); or (3) by emailing [ENZ@kingsdaleadvisors.com](mailto:ENZ@kingsdaleadvisors.com). Additionally, if you have any questions or require assistance in authorizing a proxy or voting your shares of our common stock or in obtaining any of the above materials, please contact Kingsdale Advisors through one of the three channels listed above. We are not aware of any other business, or any other nominees for election as directors, that may properly be brought before the Annual Meeting.

**IF YOU ARE A RECORD HOLDER OF SHARES, OR AN OWNER WHO OWNS SHARES IN “STREET NAME” AND OBTAIN A “LEGAL” PROXY FROM YOUR BROKER, BANK, TRUSTEE OR NOMINEE, YOU STILL MAY ATTEND THE ANNUAL MEETING AND VOTE YOUR SHARES OR REVOKE YOUR PRIOR VOTING INSTRUCTIONS.**

Regardless of the number of shares of our common stock that you own, your vote is very important. Thank you for your continued support, interest and investment in Enzo Biochem, Inc.

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**SUPPLEMENT TO THE PROXY STATEMENT  
FOR THE 2019 ANNUAL MEETING OF SHAREHOLDERS**

This proxy supplement (including all annexes attached hereto, this “Second Supplement”) supplements, amends and, to the extent inconsistent, supersedes the corresponding information in the Proxy Statement dated December 5, 2019 (the “Proxy Statement”) and the first supplement to the Proxy Statement dated December 31, 2019 (the “First Supplement”) for the 2019 Annual Meeting of Shareholders (the “Annual Meeting”) of Enzo Biochem, Inc. (“Enzo,” “Enzo Biochem” or the “Company”), each as filed with the Securities and Exchange Commission (the “SEC”) and previously furnished to shareholders of the Company in connection with the solicitation of proxies by the Board of Directors of the Company (the “Board”).

To provide shareholders with sufficient time to receive by mail and review this Second Supplement in order to be able to cast their votes on a fully informed basis, the Company will convene and then immediately adjourn—without conducting any business or holding discussions related to the proposals to be voted upon—the Annual Meeting originally scheduled to occur at 9:00 a.m., New York City time, on January 31, 2020, and reconvene at The Yale Club of New York City, 50 Vanderbilt Avenue, New York, NY 10017, at 9:00 a.m., New York City time on February 25, 2020. Only shareholders as of the close of business on the record date for the Annual Meeting, December 3, 2019, will be entitled to notice of and to vote at the Annual Meeting.

THIS SECOND SUPPLEMENT CONTAINS IMPORTANT ADDITIONAL INFORMATION AND SHOULD BE READ IN CONJUNCTION WITH THE PROXY STATEMENT AND THE FIRST SUPPLEMENT.

Except as specifically amended or supplemented by the information contained in this Second Supplement, all information set forth in the Proxy Statement and First Supplement remains accurate and should be considered in casting your vote by proxy or in person at the Annual Meeting.

This Second Supplement is first being furnished to shareholders of Enzo on or about February 14, 2020.

**Explanatory Note**

***The Company Intends to Adjourn and Reconvene the Annual Meeting on February 25, 2020***

On January 28, 2020, we announced we would delay the Annual Meeting originally scheduled for January 31, 2020 following significant investor outreach and engagement with our top shareholders, including Harbert Discovery Fund, LP and Harbert Discovery Co-Investment Fund I, LP (together with certain affiliates, “Harbert”).

As a result of the changes to the agenda and the Board withdrawing Bruce A. Hanna as a director candidate, the director candidates nominated by Harbert (the “Harbert Nominees”) will now run unopposed as candidates for election as Class II Directors. In addition, Enzo is proposing to shareholders: (1) to amend the By-Laws to increase the size of the Board from five to six directors and provide the Board discretion to further increase or decrease the size of the Board between five and seven and (2) if the shareholders approve the Board expansion, to vote to elect Barry W. Weiner as a Class III Director to the Board. The Board intends to appoint a new, highly qualified independent director in the near future.

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Accordingly, the Company has updated its proxy card to include the proposal to expand the size of the Board and reflect each of the following Company nominees for election to the Board at the Annual Meeting: Rebecca J. Fischer (as a Class I Director) and, contingent upon shareholder approval of the expansion of the Board, Barry W. Weiner (as a Class III Director). We encourage you to review this Second Supplement for additional information about the Annual Meeting that has been updated.

*The Board's previous white Proxy Card has been replaced with the **GOLD** proxy card*

**Even if you previously submitted a white or blue proxy card, we urge you to fill out and submit the enclosed GOLD proxy card today.** The GOLD proxy card enclosed with this Second Supplement differs from the proxy cards previously furnished to you with the Proxy Statement and First Supplement in that the enclosed GOLD proxy card reflects the new proposals, the updated order for all of the proposals and the Company's revised slate of director nominees. Any proxy card or voting instruction form may be revoked at any time prior to its exercise at the Annual Meeting as described in the Proxy Statement. Only your latest dated and signed proxy card or voting instruction form will be counted. **If you would like to vote on the expansion of the Board or the election of Barry W. Weiner as a Class III Director, you must fill out and submit the enclosed GOLD proxy card.**

If you previously submitted a white or blue proxy card, votes cast for either Mr. Weiner and/or Dr. Hanna will not be counted with respect to the proposal to elect two Class II Directors as neither Mr. Weiner nor Dr. Hanna remain up for election as Class II Directors. Votes cast on the white proxy card will no longer be counted for purposes of electing Mr. Weiner to the Board as Mr. Weiner is now up for election as a director of a different class for a different term. Dr. Hanna no longer stands for election as a director of any class. However, votes cast on any of the other remaining proposals using either of the two white proxy cards will be counted. Furthermore, even though the proposal to elect two Class II Directors has been redesignated as proposal 2, any votes cast in favor of the Harbert Nominees on the blue proxy card provided by Harbert will still be counted.

#### **RECOMMENDATIONS OF THE BOARD**

**THE BOARD URGES SHAREHOLDERS TO VOTE ON THE ENCLOSED GOLD PROXY CARD "FOR" PROPOSAL 1, "FOR" EACH OF THE NOMINEES ON PROPOSALS 3 AND 4 AND "FOR" PROPOSALS 5, 6 AND 7. THE BOARD MAKES NO RECOMMENDATION ON THE HARBERT NOMINEES ON PROPOSAL 2.**

While the Board makes no recommendation on the election of the Harbert Nominees as Class II Directors, it is not nominating any opposing candidates, essentially assuring the election of the Harbert Nominees. In accordance with New York law and the By-Laws, directors will be elected by a plurality of the votes cast at the shareholder meeting. This means that the director candidate receiving the highest number of "FOR" votes will be elected. Since the Board has not proposed any director candidates to oppose the Harbert Nominees, assuming Harbert or any other shareholder votes for them, both Harbert Nominees will be elected to the Board. However, shareholders voting using the enclosed GOLD proxy card will be unable to cast a vote with respect to the Harbert Nominees and shareholders wishing to vote for the Harbert Nominees must vote on a blue proxy card provided by Harbert.

If your shares are held for you by a broker, bank or nominee, it is critical that you cast your vote by instructing your bank, broker or other nominee using the gold voting instruction form provided on how to vote if you want your vote to be counted at the meeting.

#### **Note Regarding Proxy Materials**

If shareholders have any questions, require assistance with voting the enclosed GOLD proxy card, or need additional copies of the proxy materials, please contact:

**Kingsdale Advisors**  
(888) 518-1554 (toll-free in North America)  
(416) 867-2272 (outside of North America)  
email: [ENZ@kingsdaleadvisors.com](mailto:ENZ@kingsdaleadvisors.com)

## SUPPLEMENTAL DISCLOSURE—BACKGROUND TO THE SOLICITATION

On September 17, 2019, Harbert delivered formal notice to the Company of its intent to nominate the Harbert Nominees for election at the Annual Meeting. Following Harbert's notice and over the course of several weeks leading up to this Second Supplement, the Company sought to engage constructively with Harbert. While the Company attempted to reach an amicable resolution with Harbert, the Company was unable to reach an agreement that it believes is in the best interests of all shareholders.

On January 21, 2020, the Company reached out to Harbert's counsel requesting to discuss a potential amicable resolution of the overall proxy contest.

On January 22, 2020, the Company delivered to Harbert's counsel a proposed term sheet summarizing a potential settlement. The January 22 proposal offered to expand the size of the Board to seven and elect both of Harbert's nominees and both nominees of the Company to the Board.

On January 25, 2020 and following several days of discussion and negotiation, Harbert countered with a revised term sheet, including atypical and unreasonable demands including: the position of Lead Independent Director, the Chairmanships over two of the three board committees, approval rights over additional directors, and veto rights over any further board expansion as well as forced resignations of both Company nominees (one immediate and one in a year). In addition Harbert demanded expense reimbursement for its entire campaign. The Company offered Harbert the chance to provide a more reasonable counterproposal and Harbert never responded.

On January 28, 2020, the Company issued a press release to announce that the Annual Meeting would be delayed until February 25, 2020. Immediately afterwards, the Company, through counsel, reached out again to Harbert and proposed to re-engage in settlement discussions. The Company never heard back.

On January 31, 2020, the Company filed this preliminary Second Supplement with the SEC.

On February 5, 2020, Harbert filed a lawsuit demanding, among other things,

- a declaratory judgment to invalidate Proposal #1 to expand the size of the Board (or, in the alternative, require a vote of 80% of the outstanding shares to approve it);
- an injunction requiring the Company to seat both Harbert Nominees immediately and preventing the Company's nominees from standing for election at the Annual Meeting;
- an injunction prohibiting the Company from delaying the Annual Meeting;
- a determination that the Company's directors have breached their fiduciary duties; and
- damages and attorneys' fees and costs.

(the "Harbert lawsuit").

On February 11, 2020, the Company filed this revised preliminary Second Supplement with the SEC.

On February 12, 2020, Harbert filed a letter with the U.S. District Court for the Southern District of New York (the "Court") requesting the Court to issue an order to require the Company to provide Harbert (but not any other shareholder) with at least three days' notice before again seeking to postpone or adjourn the Annual Meeting. The Company had previously represented to Harbert that it would not further postpone or adjourn the Annual Meeting, unless required by law or regulation, and had no intention of doing so. In its request, Harbert claimed that the Company's representations were insufficient.

On February 14, 2020, the Court denied Harbert's request.

On February 14, 2020, the Company filed this definitive Second Supplement with the SEC.

## QUESTIONS AND ANSWERS REGARDING THE ANNUAL MEETING ADJOURNMENT AND THIS SECOND SUPPLEMENT

The following section briefly addresses some questions you may have about the Annual Meeting and this Second Supplement. These questions and answers should be read in conjunction with the questions and answers set forth in the section of the Proxy Statement titled “Information About the Annual Meeting.” Furthermore, please refer to the more detailed information contained elsewhere in this Second Supplement, the First Supplement and the Proxy Statement itself.

### **Q: When and where will the Annual Meeting take place?**

A: The Annual Meeting was convened on January 31, 2020, at 9:00 a.m. New York City time at The Yale Club of New York City, 50 Vanderbilt Avenue, New York, NY 10017, but was adjourned—without conducting any further business or holding discussions related to the proposals to be voted upon—to be reconvened at 9:00 a.m. New York City time on February 25, 2020, at the same location.

### **Q: How does the adjournment process work?**

A: After convening the Annual Meeting on January 31, 2020, the Company immediately, and without conducting any further business or holding discussions related to the proposals to be voted upon, adjourned the meeting. This process preserved the record date of December 3, 2019, and ensured that shareholders who have already voted are not required to submit another proxy card.

### **Q: What vote is required for the By-Law Amendment to pass?**

A: The By-Law Amendment to expand the board will be approved if it receives the affirmative vote of a majority of the votes present in person or by proxy by the holders of shares entitled to vote therein. Abstentions will have the same effect as a vote against this proposal. Broker non-votes, if any, will not be counted as votes cast for such purpose.

### **Q: Why is the amendment to the By-Laws that fixes the size of the Board not subject to a supermajority vote requirement?**

A: Upon the Company’s IPO in 1980, the By-Laws provided in Article II, Section 2 of the By-Laws (“Article II Section 2”) as follows:

*“Number, Qualifications, Election and Term of Office . The number of directors of the Corporation shall be fixed from time to time by the vote of a majority of the entire Board then in office and the number thereof may thereafter by like vote be increased or decreased to such greater or lesser number (not less than three) as may be so provided, subject to the provisions of Section 11 of this Article II. [...]”*

In 1988, shareholders approved certain amendments to Article II, Section 2 that eliminated the language regarding the size of the Board as follows:

*“~~Number, Qualifications, Election and Terms~~ Term of Office. ~~The number of directors of the Corporation shall be fixed from time to time by the vote of a majority of the entire Board then in office and the number thereof may thereafter by like vote be increased or decreased to such greater or lesser number (not less than three) as may be so provided, subject to the provisions of Section 11 of this Article II. [...]~~”*

Consequently, following the 1988 amendments to the By-Laws, Article II Section 2 no longer contained any provision regarding the size of the Board. The full text of Article II, Section 2 following the 1988 amendment is as follows:

*“Election and Terms. The directors, other than those who may be elected by the holders of any class or series of stock having a preference over another class or series of stock as to dividends or upon liquidation, shall be classified, with respect to the time for which they severally hold office, into three classes, as nearly equal in number as possible, as determined by the Board, one class to be originally elected for a term expiring at the annual meeting of shareholders to be held in 1989, another class to be originally elected for a term expiring at the annual meeting of shareholders to*

*be held in 1990, and another class to be originally elected for a term expiring at the annual meeting of shareholders to be held in 1991, with each class to hold office until its successor is elected and qualified. At each annual meeting of the shareholders of the Corporation, the successors of the class of directors whose term expires at the meeting shall be elected to hold office for a term expiring at the annual meeting of shareholders held in the third year following the year of their election.”*

Moreover, in connection with the aforementioned By-Law amendments, the shareholders approved certain amendments to the Charter in 1988, requiring that any further amendment to Article II Section 2 require the approval of shares representing 80% of the Company’s outstanding shares.

Since the amendments in 1988, no further amendments to Article II Section 2 were approved by the shareholders. The Board took action to unilaterally amend Article II Section 2 in 2010 and 2013. However, these amendments conflict with the 80% supermajority shareholder approval requirement contained in the Charter. Under NY BCL § 601(b), the Charter of the Company controls where it conflicts with the By-Laws. Because each of these actions were in direct violation of the Charter, both the 2010 and 2013 amendments to Article II Section 2 had no legal effect. As a consequence of the foregoing, Article II Section 2 has remained, in fact, unchanged since the 1988 amendments. Therefore, the By-Laws do not speak to the size of the Board.

Harbert’s lawsuit against the Company demands, among other things, that proposal 1 be subject to the 80% supermajority vote requirement. The Company strongly disagrees with Harbert’s position. Assuming a quorum is present at the Annual Meeting, the amendment to the By-Laws will be approved if it receives the affirmative vote of a majority of the votes present in person or by proxy by the holders of shares entitled to vote therein. Abstentions will have the same effect as a vote against this proposal. Broker non-votes, if any, will not be counted as votes cast for such purposes.

**Q: Why has the Company adjourned the Annual Meeting?**

A: By adjourning the Annual Meeting, the Company has provided shareholders sufficient time to receive by mail and review the Second Supplement in order to be able to cast their votes on a fully informed basis.

**Q: Was any business conducted on January 31, 2020?**

A: No, the Company adjourned the Annual Meeting without conducting any business or holding discussions related to the proposals to be voted upon.

**Q: Who can attend and vote at the adjourned Annual Meeting?**

A: All shareholders of record as of the close of business on December 3, 2019 remain entitled to attend and vote at the Annual Meeting scheduled to be reconvened on February 25, 2020.

**Q: Who will count the votes?**

A: Votes will be counted by an independent inspector of election appointed for the Annual Meeting by the Chairman of the Annual Meeting. The inspector of election will receive instructions to count votes as per applicable federal securities and state laws. Proxies will be available for inspection following the independent inspector’s determination of the outcome of the election.

**Q: Who can help answer my questions?**

A: Enzo Biochem shareholders who have questions about matters to be voted on at the Annual Meeting or who desire additional copies of this Second Supplement or additional proxy or voting instruction cards should contact:

**Enzo Biochem, Inc.**

527 Madison Avenue  
New York, New York 10022  
(212) 583-0100  
Attn.: Investor Relations

Or



**KINGSDALE** Advisors

**Kingsdale Advisors**

(888) 518-1554 (toll-free in North America)  
(416) 867-2272 (outside of North America)  
email: [ENZ@kingsdaleadvisors.com](mailto:ENZ@kingsdaleadvisors.com)

## PROPOSAL 1—APPROVAL OF THE AMENDMENT TO THE BY-LAWS TO INCREASE THE SIZE OF THE BOARD

The Board proposes and recommends that shareholders approve an amendment to the By-Laws to increase the maximum number of directors on the Board to six and provide that the Board will have discretion to increase or decrease the size of the Board within the range of five and seven directors. If this proposal is approved, the Board will have the authority to reduce the Board to five directors upon unanimous written consent or by a vote of the majority of the entire Board. If the Board is set at seven directors, a minimum of four directors must vote to reduce the size of the Board to five directors. If the Board is set at six directors, a minimum of four directors must vote in favor of the reduction. If the vote is evenly split for and against such reduction, the size of the Board will not be reduced.

Based upon feedback received from our shareholders, the Board believes it is in the best interests of the Company to expand the size of the Board at this time. Increasing the number of directors on the Board offers the Company the ability to enhance the diversity, range of experience, expertise and independence of its directors, which will create a greater ability for the Board to bring in fresh perspectives in order to address the growing complexity and opportunity in our business.

The expansion of the Board requires an amendment to the By-Laws. This amendment consists of amending Article II, Section 9 of the By-Laws, which refers to the organization of the Board. The text of the revised Section 9 marked with the proposed amendment is below:

Section 9. Size and Organization. The number of directors constituting the Board shall be fixed at six (6); provided, however, that the Board shall have discretion to increase or decrease the size of the Board within the range of five (5) and seven (7) directors. The Chairman of the Board shall act as chairman of and preside at all meetings of the Board at which he is present. If the Chairman of the Board shall be absent from any meeting of the Board, the duties otherwise provided in this Section 9 of Article II to be performed by him at such meeting shall be performed at such meeting by the individual elected by the Board to act as Lead Independent Director. If the Chairman of the Board shall be absent from any meeting of the Board, and if no Lead Independent Director has been elected or if the Lead Independent Director is not present at the meeting, the Vice Chairman of the Board shall act as chairman of and preside at such meeting. If the Chairman of the Board shall be absent from any meeting of the Board, and if no Lead Independent Director or Vice Chairman of the Board has been elected or if the Lead Independent Director and the Vice Chairman of the Board are not present at the meeting, the President shall act as chairman of and preside at such meeting. If the Chairman of the Board shall be absent from any meeting of the Board, and if no Lead Independent Director or Vice Chairman of the Board has been elected and no President has been appointed or if the Lead Independent Director, the Vice Chairman of the Board and the President are not present at the meeting, another director chosen by a majority of the directors present shall act as chairman of and preside at such meeting. The Secretary (or, in his absence or inability to act, any person appointed by the chairman) shall act as secretary of the meeting and keep the minutes thereof.

Upon the Company's IPO in 1980, the By-Laws provided in Article II, Section 2 of the By-Laws ("Article II Section 2") as follows:

**"Number, Qualifications, Election and Term of Office.** The number of directors of the Corporation shall be fixed from time to time by the vote of a majority of the entire Board then in office and the number thereof may thereafter by like vote be increased or decreased to such greater or lesser number (not less than three) as may be so provided, subject to the provisions of Section 11 of this Article II. [...]"

In 1988, shareholders approved certain amendments to Article II, Section 2 that eliminated the language regarding the size of the Board as follows:

~~**"Number, Qualifications, Election and Terms Term of Office.** The number of directors of the Corporation shall be fixed from time to time by the vote of a majority of the entire Board then in office and the number thereof may thereafter by like vote be increased or decreased to such greater or lesser number (not less than three) as may be so provided, subject to the provisions of Section 11 of this Article II: [...]"~~

Consequently, following the 1988 amendments to the By-Laws, Article II Section 2 no longer contained any provision regarding the size of the Board. The full text of Article II, Section 2 following the 1988 amendment is as follows:

*“Election and Terms. The directors, other than those who may be elected by the holders of any class or series of stock having a preference over another class or series of stock as to dividends or upon liquidation, shall be classified, with respect to the time for which they severally hold office, into three classes, as nearly equal in number as possible, as determined by the Board, one class to be originally elected for a term expiring at the annual meeting of shareholders to be held in 1989, another class to be originally elected for a term expiring at the annual meeting of shareholders to be held in 1990, and another class to be originally elected for a term expiring at the annual meeting of shareholders to be held in 1991, with each class to hold office until its successor is elected and qualified. At each annual meeting of the shareholders of the Corporation, the successors of the class of directors whose term expires at the meeting shall be elected to hold office for a term expiring at the annual meeting of shareholders held in the third year following the year of their election.”*

Moreover, in connection with the aforementioned By-Law amendments, the shareholders approved certain amendments to the Charter in 1988, requiring that any further amendment to Article II Section 2 require the approval of shares representing 80% of the Company’s outstanding shares.

Since the amendments in 1988, no further amendments to Article II Section 2 were approved by the shareholders. The Board took action to unilaterally amend Article II Section 2 in 2010 and 2013. However, these amendments conflict with the 80% supermajority shareholder approval requirement contained in the Charter. Under NY BCL § 601(b), the Charter of the Company controls where it conflicts with the By-Laws. Because each of these actions were in direct violation of the Charter, both the 2010 and 2013 amendments to Article II Section 2 had no legal effect. As a consequence of the foregoing, Article II Section 2 has remained, in fact, unchanged since the 1988 amendments. Therefore, the By-Laws do not speak to the size of the Board.

Harbert’s lawsuit against the Company demands, among other things, that proposal 1 be subject to the 80% supermajority vote requirement. The Company strongly disagrees with Harbert’s position. Assuming a quorum is present at the Annual Meeting, the amendment to the By-Laws will be approved if it receives the affirmative vote of a majority of the votes present in person or by proxy by the holders of shares entitled to vote therein. Abstentions will have the same effect as a vote against this proposal. Broker non-votes, if any, will not be counted as votes cast for such purposes.

If approved by our shareholders this amendment will become effective immediately and shareholders will be presented with the opportunity to vote to fill the seat arising from such vacancy as described further in Proposal 4 to this Second Supplement. In accordance with New York law and the By-Laws, the vacancy will be filled by a plurality of the votes cast at the shareholder meeting. This means that the director candidate receiving the highest number of “**FOR**” votes will be elected.

Additionally, the Board intends to appoint a new, highly qualified independent director to join the Board by the next annual meeting of shareholders. Pursuant to the By-Laws, the Board has the authority to fill the vacancy created by a newly created directorship by the affirmative vote of a majority of the directors then in office, even though less than a quorum of the Board is present.

**THE BOARD UNANIMOUSLY RECOMMENDS A VOTE “FOR” PROPOSAL 1 TO AMEND THE BY-LAWS TO INCREASE THE SIZE OF THE BOARD.**



## PROPOSAL 2—ELECTION OF CLASS II DIRECTORS

The Board has three staggered classes of directors, each of which serves for a term of three years. At the Annual Meeting, the Board's Class II Directors will be elected to hold offices for a term of three years or until their successors are elected and qualified.

As disclosed in Harbert's definitive proxy statement filed with the SEC on December 6, 2019 (the "Harbert Proxy Statement"), Harbert has proposed two nominees for election as Class II Directors. The Board has not proposed any director nominees to oppose the Harbert Nominees.

The total cumulative length of time that any member of the Board who is not an officer or employee of the Company (an "Outside Director") may serve on the Board is limited to a maximum of three, three-year terms, whether consecutively or in total, plus any portion of an earlier three-year term that such Outside Director may have been appointed to serve. The term limit set forth above may be extended for up to a maximum of one additional term if such individual is re-nominated by the unanimous agreement of the Board.

### Vote Required

In accordance with New York law and the By-Laws, directors will be elected by a plurality of the votes cast at the shareholder meeting. This means that the director candidate receiving the highest number of "**FOR**" votes will be elected. A properly executed proxy card marked "**WITHHOLD**" and broker non-votes, if any, with respect to the election of a director nominee will be counted for purposes of determining if there is a quorum at the Annual Meeting, but will not be considered to have been voted "**FOR**" or "**AGAINST**" any director nominee. Withhold votes and broker non-votes, if any, will have no effect on the outcome of the election.

### **THE BOARD MAKES NO RECOMMENDATION REGARDING THE ELECTION OF THE CLASS II DIRECTORS OF THE COMPANY.**

Under Rule 14a-4(d)(1) of the Securities Exchange Act of 1934, a proxy may not confer authority to vote for any person for election to the board unless that person has consented to be named in the proxy statement and to serve if elected. Since the Harbert Nominees have not consented to be named in the Company's proxy statement, shareholders voting the **GOLD** proxy card may not vote on the election of the Harbert Nominees. However, since the Board is not nominating any director candidates to oppose the Harbert Nominees, and assuming Harbert or any other shareholder votes for them, both Harbert Nominees will be elected to the Board. Shareholders who nonetheless wish to cast votes in favor of the Harbert Nominees must do so by voting on a blue proxy card provided by Harbert.

**PROPOSAL 3—ELECTION OF CLASS I DIRECTOR**

The Board has three staggered classes of directors, each of which serves for a term of three years. Our Board, upon the recommendation of our Nominating/Governance Committee, voted on December 23, 2019 to nominate Ms. Fischer for election at the Annual Meeting to serve as a replacement for incumbent Class I Director Mr. Bortz effective upon Ms. Fischer’s acceptance of such appointment. Mr. Bortz tendered his resignation immediately prior to Ms. Fischer’s acceptance. Ms. Fischer has also been appointed to the Audit, Compensation and Nominating/Governance Committees and serves as Chair of the Audit Committee. At the Annual Meeting, the Board’s Class I Director will be elected to hold office for a term of two years or until their successor is elected and qualified. Unless otherwise instructed, the shares represented by validly submitted proxy cards will be voted “**FOR**” the election of Ms. Fischer to serve as a Class I Director of the Company. Ms. Fischer has consented to being named in this Second Supplement and to serve as a Class I Director of the Company if elected. The Board has no reason to believe that Ms. Fischer will not be a candidate or will be unable to serve as a Class I Director. However, in the event that Ms. Fischer should become unable or unwilling to serve as a Class I Director, the proxy cards will be voted for the election of such alternate person as shall be designated by the directors currently serving on the Board. If any alternate person is designated by the directors currently on the Board to serve as a Class I Director nominee, the Company will publicly notify shareholders by press release and will promptly distribute to shareholders revised proxy materials (including a revised **GOLD** proxy card) that (i) identifies such substitute nominee, (ii) discloses whether such substitute nominee consented to being named in the revised proxy statement and to serve as a director of the Company if elected, and (iii) includes certain other disclosures required by applicable federal proxy rules and regulations with respect to such substitute nominee(s).

Set forth below is Ms. Fischer’s age as of December 31, 2019, her offices with us, if any, her principal occupations or employment for the past five years, the length of her tenure as a director, and the names of other public companies in which she serves or has served as a member of the board of directors.

**Biographical Information for the Nominee**

**CLASS I DIRECTOR NOMINEE TO SERVE UNTIL  
THE 2021 ANNUAL MEETING, IF ELECTED:**

<b>Name</b>	<b>Age</b>	<b>Year First Became a Director</b>
Rebecca J. Fischer	52	2019

**REBECCA J. FISCHER** was appointed to the Board effective as of December 30, 2019. She is currently the Chief Financial Officer of Bellevue Hospital, the world-renowned flagship institution for New York City Health and Hospitals, with over 900 licensed beds and an operating budget of more than \$950 million. She began her career at Bellevue as Associate Director in 2003, became Associate Executive Director in 2011, was promoted to Deputy CFO in 2016 and then promoted to CFO in 2017. In her role as CFO of Bellevue, Ms. Fischer is responsible for managing a team of financial managers and 400 other professionals. Her team oversees budgeting, revenue enhancement, utilization, financial reporting, cash management productivity improvement and affiliate relations with the NYU School of Medicine. She is also a key advisor to the hospital’s CEO and other members of the C-level team on strategic planning and resource allocation. In both her strategic and day-to-day responsibilities, Ms. Fischer is directly involved in guiding Bellevue and its leaders through complex government and private reimbursement practices. At Bellevue and throughout the HHC, she is viewed as a subject matter expert on optimal ways for hospitals to deliver the highest quality care at a time of enormous technological change and financial pressure. Ms. Fischer received her undergraduate degree *cum laude* from Cornell University and her Master of Public Administration in Health Policy and Management from New York University, where she was a recipient of the Robert F. Wagner, Jr. Fellowship.

We believe that Ms. Fischer’s qualifications to serve on our Board are demonstrated by her experience at Bellevue, her strengths at problem solving and her keen understanding of how to

successfully navigate the intersection of investment spending with an unwavering commitment to science and innovation.

**Vote Required**

In accordance with New York law and the By-Laws, directors will be elected by a plurality of the votes cast at the shareholder meeting. This means that the director candidate receiving the highest number of “**FOR**” votes will be elected. A properly executed proxy card marked “**WITHHOLD**” and broker non-votes, if any, with respect to the election of a director nominee will be counted for purposes of determining if there is a quorum at the Annual Meeting, but will not be considered to have been voted “**FOR**” or “**AGAINST**” any director nominee. Withhold votes and broker non-votes, if any, will have no effect on the outcome of the election.

**THE BOARD UNANIMOUSLY RECOMMENDS THAT YOU VOTE “FOR” THE ELECTION OF MS. REBECCA J. FISCHER TO SERVE AS A CLASS I DIRECTOR OF THE COMPANY.**

The persons named as proxies intend to vote the proxies “ **FOR**” the election of Ms. Fischer unless you indicate on the proxy card a vote to “ **WITHHOLD**” your vote with respect to either nominee. If for some reason any director nominee is unable to serve, or for good cause will not serve if elected, the persons named as proxies may vote for a substitute nominee recommended by the Board. If any substitute nominees are designated, we will file an amended proxy statement that, as applicable, identifies the substitute nominees, discloses that such nominees have consented to being named in the revised proxy statement and to serve if elected, and includes certain biographical and other information about such nominees required by SEC rules.

**PROPOSAL 4—IF THE SHAREHOLDERS APPROVE PROPOSAL 1, ELECTION OF  
CLASS III DIRECTOR**

The Board has three staggered classes of directors, each of which serves for a term of three years. If shareholders approve Proposal 1 at the Annual Meeting, the Board's Class III Director will be elected to hold office for a term of one year or until their respective successor is elected and qualified. Unless otherwise instructed, the shares represented by validly submitted proxy cards will be voted "**FOR**" the election of the below-listed Board nominee to serve as a Class III Director of the Company. The below-listed nominee has consented to being named in the Proxy Statement and this Second Supplement and to serve as a Class III Director of the Company if elected. The Board has no reason to believe that the below-listed Board nominees will not be candidates or will be unable to serve as Class III Directors. However, in the event that either of the below-listed Board nominees should become unable or unwilling to serve as a Class III Director, the proxy cards will be voted for the election of such alternate person as shall be designated by the directors currently on the Board. If any alternate person is designated by the directors currently on the Board to serve as a Class III Director nominee, the Company will publicly notify shareholders by press release and will promptly distribute to shareholders revised proxy materials (including a revised **GOLD** proxy card) that (i) identifies such substitute nominee, (ii) discloses whether such substitute nominee consented to being named in the revised proxy statement and to serve as a director of the Company if elected, and (iii) includes certain other disclosures required by applicable federal proxy rules and regulations with respect to such substitute nominee.

**Biographical Information for Nominee**

**CLASS III DIRECTOR NOMINEE TO SERVE UNTIL  
THE 2020 ANNUAL MEETING, IF ELECTED:**

<b>Name</b>	<b>Age</b>	<b>Year First Became a Director</b>
Barry W. Weiner	69	1972

**BARRY W. WEINER** is the Company's President, Principal Accounting Officer and a director and founder of the Company. He has served as the Company's Chief Financial Officer until December 22, 2019 and President since 1996, and previously held the position of Executive Vice President. Before his employment with Enzo Biochem, he worked in several managerial and marketing positions at the Colgate Palmolive Company. Mr. Weiner is a member of the New York Biotechnology Association. He received his Bachelor of Arts degree in Economics from New York University and his Master of Business Administration in Finance from Boston University.

We believe that Mr. Weiner's qualifications to serve on our Board are demonstrated by his deep knowledge of our businesses and the industries in which we are involved, along with his experience in finance, management and marketing, including the identification of acquisition targets, business development and partnering and raising capital.

**Vote Required**

In accordance with New York law and the By-Laws, directors will be elected by a plurality of the votes cast at the shareholder meeting. This means that the director candidate receiving the highest number of "**FOR**" votes will be elected. A properly executed proxy card marked "**WITHHOLD**" and broker non-votes, if any, with respect to the election of a director nominee will be counted for purposes of determining if there is a quorum at the Annual Meeting, but will not be considered to have been voted "**FOR**" or "**AGAINST**" any director nominee. Withhold votes and broker non-votes, if any, will have no effect on the outcome of the election.

**THE BOARD UNANIMOUSLY RECOMMENDS THAT YOU VOTE "FOR" THE ELECTION OF MR. WEINER TO SERVE AS A CLASS III DIRECTOR OF THE COMPANY.**

The persons named as proxies intend to vote the proxies “**FOR**” the election of Mr. Weiner unless you indicate on the proxy card a vote to “**WITHHOLD**” your vote with respect to either nominee. If for some reason any director nominee is unable to serve, or for good cause will not serve if elected, the persons named as proxies may vote for a substitute nominee recommended by the Board. If any substitute nominees are designated, we will file an amended proxy statement that, as applicable, identifies the substitute nominees, discloses that such nominees have consented to being named in the revised proxy statement and to serve if elected, and includes certain biographical and other information about such nominees required by SEC rules.

**DIRECTORS WHO ARE CONTINUING IN OFFICE**

**Class I: Term to Expire at the 2021 Annual Meeting in 2022**

<b>Name</b>	<b>Age</b>	<b>Year First Became a Director</b>
Dov Perlysky	57	2012

**Class III: Term to Expire at the 2020 Annual Meeting in 2021**

<b>Name</b>	<b>Age</b>	<b>Year First Became a Director</b>
Elazar Rabbani, Ph.D	76	1976

**DIRECTORS, EXECUTIVE OFFICERS AND KEY EMPLOYEES**

The current directors, executive officers and key employees of the Company and its subsidiaries are identified in the table below.

<b>Name</b>	<b>Age</b>	<b>Year Became a Director, Executive Officer or Key Employee</b>	<b>Position</b>
Elazar Rabbani, Ph.D	76	1976	Chairman of the Board, Chief Executive Officer and Secretary
Barry W. Weiner <sup>(1)</sup>	69	1977	President, Treasurer and Director
David A. Bench	47	2019	Chief Financial Officer
Dieter Schapfel, M.D	56	2014	Chief Medical Director, Enzo Clinical Labs
Kara Cannon	51	2018	Corporate Vice President, Commercial Operations
Bruce A. Dey	61	2014	Vice President of Sales, Enzo Clinical Labs
Dov Perlysky	57	2012	Director
Bruce A. Hanna, Ph.D. <sup>(1)</sup>	76	2017	Director
Rebecca J. Fischer <sup>(1)</sup>	52	2019	Director

<sup>(1)</sup> Director term expires at the Annual Meeting.

**Family Relationships**

There are no family relationships of first cousins or closer, among the Company’s directors, nominees for director and executive officers, by blood marriage or adoption, except that Dr. Elazar Rabbani and Barry W. Weiner are brothers-in-law.

**THE BOARD UNANIMOUSLY RECOMMENDS THAT YOU VOTE “FOR” THE ELECTION OF MS. FISCHER AS A CLASS I DIRECTOR OF THE COMPANY AND “FOR” THE ELECTION OF MR. WEINER AS A CLASS III DIRECTOR OF THE COMPANY. THE BOARD MAKES NO RECOMMENDATION ON THE HARBERT NOMINEES.** Shareholders voting using the enclosed **GOLD** proxy card will be unable to cast a vote with respect to the Harbert Nominees and shareholders wishing to vote for the Harbert Nominees must vote on a blue proxy card provided by Harbert.

If you previously submitted a white or blue card, votes cast for either Mr. Weiner and/or Dr. Hanna will not be counted with respect to the proposal to elect two Class II Directors as neither Mr. Weiner nor Dr. Hanna remain up for election as Class II Directors. Votes cast on the white card will no longer be counted for purposes of electing Mr. Weiner to the Board as Mr. Weiner is now up for election as a director of a different class for a different term. Dr. Hanna no longer stands for election as a director of any class. However, votes cast on any of the other remaining proposals using either of the two white proxy cards will be counted. Furthermore, even though the proposal to elect two Class II Directors has been redesignated as proposal 2, any votes cast in favor of the Harbert Nominees on the blue proxy card provided by Harbert will still be counted.

## PROPOSAL 5—ADVISORY VOTE ON THE COMPANY’S NAMED EXECUTIVE OFFICER COMPENSATION

The Exchange Act, and more specifically, Section 14A of the Exchange Act, which was added under the Dodd-Frank Wall Street Reform and Consumer Protection Act enacted in July 2010, requires that we provide shareholders with the opportunity to vote to approve, on a nonbinding advisory basis, the compensation of our Named Executive Officers as disclosed in the Proxy Statement in accordance with the SEC’s rules (commonly referred to as “Say-on-Pay”).

At our 2011 and 2017 annual meeting of shareholders, a majority of our shareholders who voted supported an annual vote on our executive compensation and, in response, our Compensation Committee determined to hold an annual vote on the matter. As such, the next shareholder advisory vote on executive compensation will occur at the Company’s 2020 Annual Meeting.

Our compensation program for Named Executive Officers is intended to link compensation to performance; to provide competitive compensation levels to attract, retain and reward executives; and to align management’s interests with those of our clients and shareholders. The compensation provided to the Named Executive Officers is dependent on the Company’s financial, operational and strategic performance and the Named Executive Officer’s individual performance. It is intended to drive creation of long-term shareholder value.

We encourage shareholders to read the “Compensation Discussion and Analysis” section of the Proxy Statement, the Summary Compensation Table and the other related tables and disclosure for a detailed description of the fiscal year 2019 compensation of our Named Executive Officers. The Compensation Committee and the Board believe that the policies and procedures articulated in the “Compensation Discussion and Analysis” are effective in achieving our goals and that the compensation of our Named Executive Officers reported in the Proxy Statement appropriately reflects our results during the fiscal year.

The vote on this resolution is not intended to address any specific element of compensation; rather, the advisory vote relates to the overall compensation of our Named Executive Officers. This vote is advisory, which means that it is not binding on the Company, the Board or the Compensation Committee. However, we value the opinion of our shareholders and the Board and the Compensation Committee will review the voting results and will take into account the outcome of the vote when considering future compensation decisions for the Named Executive Officers.

Accordingly, we ask our shareholders to vote on the following resolution:

“RESOLVED, that the Company’s shareholders approve, on a nonbinding advisory basis, the compensation paid to the Company’s Named Executive Officers, as disclosed in the Company’s Proxy Statement for the Annual Meeting of Shareholders pursuant to the compensation disclosure rules of the SEC, including the Compensation Discussion and Analysis, the Summary Compensation Table and the related compensation tables and narrative discussion.”

**THE BOARD UNANIMOUSLY RECOMMENDS THAT YOU VOTE “FOR” APPROVING THE NAMED EXECUTIVE OFFICER COMPENSATION AS DISCLOSED IN THE PROXY STATEMENT PURSUANT TO THE COMPENSATION DISCLOSURE RULES OF THE SEC.**

## PROPOSAL 6—RATIFICATION OF APPOINTMENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Audit Committee of the Board has selected and the Board has appointed EisnerAmper LLP, an independent registered public accounting firm (“EisnerAmper”), to audit the Company’s financial statements for the fiscal year ending July 31, 2020. The Company is submitting its selection of EisnerAmper for ratification by the shareholders at the Annual Meeting. A representative of EisnerAmper is expected to be present at the reconvening of the Annual Meeting on February 25, 2020, will have the opportunity to make a statement and is expected to be available to respond to appropriate questions. EisnerAmper has served as our independent registered public accounting firm since April 19, 2013.

Although the selection and appointment of an independent registered public accounting firm is not required to be submitted to a vote of shareholders, the Board deems it desirable to obtain the shareholders’ ratification and approval of this appointment. If the appointment is not ratified by shareholders, then the adverse vote will be considered as an indication to the Audit Committee that it should consider selecting another independent registered public accounting firm for the following fiscal year, but the Audit Committee is not required to do so. Even if the appointment is ratified, the Audit Committee, in its discretion, may select a new independent registered public accounting firm at any time during the year if it believes that such a change would be in the Company’s best interest.

In making its recommendation to ratify the appointment of EisnerAmper as the Company’s independent registered public accounting firm for the fiscal year ending July 31, 2020, the Audit Committee has considered whether the services provided by EisnerAmper are compatible with maintaining the independence of EisnerAmper.

### Principal Accountant Fees and Services

EisnerAmper billed the Company for services for fiscal years 2019 and 2018, as set forth in the table below. The fees listed are aggregate fees for services performed for the year—regardless of when the fee was actually billed.

	FY 2019	FY 2018
Audit Fees	\$ 548,318	\$ 550,900
Audit-related Fees	38,681	38,752
Tax Fees	—	—
All Other Fees	—	—
<b>Total</b>	<b>\$ 586,999</b>	<b>\$ 589,652</b>

**Audit Fees**—Consists of fees for professional services necessary to perform an audit or review in accordance with the Public Company Accounting Oversight Board, including services rendered for the audit of our annual financial statements (including services incurred with rendering an opinion under Section 404 of the Sarbanes-Oxley Act of 2002) and quarterly reviews of the Company’s interim financial statements.

**Audit-Related Fees**—EisnerAmper performed certain Audit services for an employee benefit plan for the years ended December 31, 2019 and 2018, for which the Company is the plan sponsor; these fees were \$38,681 and \$38,752, respectively.

**Tax Fees**—There were no tax fees for fiscal years 2019 and 2018.

**All Other Fees**—There were no other fees for fiscal years 2019 and 2018.

**Pre-Approval Policies and Procedures**—The Audit Committee has adopted a policy that requires advance approval of all audit, audit-related, tax services and other services performed by the independent registered public accounting firm. The policy provides for pre-approval by the Audit Committee of specifically defined audit and non-audit services.

Unless the specific service has been previously pre-approved with respect to that year, the Audit Committee must approve the permitted service before the independent auditor is engaged to perform it. The Audit Committee has delegated to the Chair of the Audit Committee authority to approve



permitted services, provided that the Chair reports any decisions to the Audit Committee at its next scheduled meeting.

**THE BOARD UNANIMOUSLY RECOMMENDS A VOTE “FOR” PROPOSAL 6 RELATING TO THE RATIFICATION OF THE COMPANY’S APPOINTMENT OF EISNERAMPER TO SERVE AS THE COMPANY’S INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM FOR THE FISCAL YEAR ENDING JULY 31, 2020.**

**PROPOSAL 7—APPROVAL OF THE AMENDMENT TO THE BY-LAWS TO IMPLEMENT MAJORITY VOTING IN UNCONTESTED DIRECTOR ELECTIONS**

The Board proposes and recommends that shareholders approve an amendment to the By-Laws for the election of directors by an affirmative vote of the majority of the votes cast in uncontested director elections. Our By-Laws currently defer to New York Corporate law, which provides that the Company’s directors are elected pursuant to a “plurality voting” standard, under which director nominees who receive the greatest number of votes cast in favor of their election at the annual meeting of shareholders are elected to the Board, up to the maximum number of directors to be filled at that meeting. This means that, currently, a nominee may be elected to the Board whether or not a majority of the votes cast are in favor of his or her election.

Under the proposed majority voting standard, for a nominee to be elected to the Board in an “uncontested election,” the number of votes cast “FOR” the nominee’s election must exceed the number of votes cast “AGAINST” their election. Abstentions would not be considered votes cast “FOR” or “AGAINST” a nominee. An “uncontested election” is generally any meeting of shareholders at which the number of nominees does not exceed the number of directors to be elected. In all director elections other than uncontested elections, which we refer to as “contested elections,” the plurality voting standard would still apply.

In recent years, many public companies have eliminated plurality voting in uncontested elections and adopted “majority voting” by-laws or standards that provide shareholders with more influence over the outcome of uncontested director elections. As part of the ongoing review of our corporate governance, our Board determined that it is in the best interest of the Company and our shareholders to implement a majority voting standard in uncontested director elections. The Board concluded that the adoption of a majority vote standard will reinforce the Board’s accountability to our shareholders, by requiring that a nominee must obtain more “FOR” votes than “AGAINST” votes in order to be elected.

The Board believes, however, that the plurality vote standard should continue to apply in contested director elections. If a majority vote standard is used in a contested election, fewer candidates could be elected to the Board than the number of authorized board seats. Accordingly, we will retain plurality voting in contested elections.

We will also implement conforming amendments to our By-Laws to address the treatment of “holdover” terms for any incumbent directors who fail to be re-elected under majority voting. Under New York law, even if an incumbent director does not receive the vote required for re-election, that director will continue to serve as a “holdover director” until a successor is elected and qualified. Our amendments to our By-Laws will require an incumbent director who does not receive more votes cast “FOR” than “AGAINST” his or her election in an uncontested election to tender his or her resignation to the Board and the Board will decide, through a process managed by the Nominating/Governance committee, whether to accept such resignation or to have such director serve on a holdover basis until a successor is appointed.

The implementation of a majority voting standard requires an amendment to the By-Laws. This amendment consists of amending Article 1, Section 9 of the By-Laws, which refers to voting standards. The text of the revised section marked with the proposed amendment is below:

Section 9. Voting. Except as otherwise provided by statute, the Certificate of Incorporation, or any certificate duly filed in the office of the Department of State of the State of incorporation, each holder of record of shares of stock of the Corporation having voting power shall be entitled at each meeting of the shareholders to one vote for every share of such stock standing in his name on the record of shareholders of the Corporation on the date fixed by the Board as the record date for the determination of the shareholders who shall be entitled to notice of and to vote at such meeting; or if such record date shall not have been so fixed, then at the close of business on the day next preceding the day on which notice thereof shall be given, or if notice is waived, at the close of business on the day next preceding the day on which the meeting is held; or each shareholder entitled to vote at any meeting of the shareholders may authorize another person or persons to act for him by a proxy signed by such shareholder or his attorney-in-fact. Any such proxy shall be delivered to the secretary of such meeting at or prior to the time designated in the order

of business for so delivering such proxies. No proxy shall be valid after the expiration of three years from the date thereof, unless otherwise provided in the proxy. Every proxy shall be revocable at the pleasure of the shareholder executing it, except in those cases where an irrevocable proxy is permitted by law. Except as otherwise provided by statute, these By-Laws, or the Certificate of Incorporation, any corporate action to be taken by vote of the shareholders shall be authorized by a majority of the total votes, or when shareholders are required to vote by class by a majority of the votes of the appropriate class, cast at a meeting of shareholders by the holders of shares present in person or represented by proxy and entitled to vote on such action. Each director of the Corporation to be elected by shareholders shall be elected by the vote of a majority of the votes cast with respect to such director by the shares present in person or represented by proxy and entitled to vote on the election of directors at any meeting of shareholders duly called for that purpose at which a quorum is present; provided, however, that directors shall be elected by a plurality of the votes cast in a contested election. An election shall be considered contested if, as of the date that this 10 days prior to the filing of the definitive proxy materials for such election, the number of nominees for election as a member of the Board exceeds the number of directors to be elected. A "majority of votes cast" means that the number of shares voted "for" a nominee for election as a member of the Board exceeds the number of shares voted "against" the election of such nominee. Abstentions and broker non-votes shall not constitute votes "for" or "against". Any incumbent director nominee who fails to receive a majority of the votes cast in an election that is not a contested election shall promptly tender his or her resignation to the Board with such resignation expressly stating that it is contingent upon the acceptance of the resignation by the Board in accordance with this Section 9. The Nominating/Governance Committee of the Board, or such other committee designated by the Board pursuant to these By-Laws, shall recommend to the Board whether to accept or reject the tendered resignation, or whether other action should be taken. The Board shall act on the resignation, taking into account the Nominating/Governance Committee's recommendation, and publicly disclose on a Form 8-K its decision regarding the resignation and, if such resignation is rejected, the rationale behind the decision, within ninety (90) days following certification of the election results. The Nominating/Governance Committee in making its recommendation, and the Board in making its decision, each may consider any factors and other information that they consider appropriate and relevant. The director who has tendered their resignation pursuant to this Section 9 shall not participate in the Nominating/Governance Committee's or the Board's deliberations or decision with respect to the tendered resignation. If the board of directors accepts a director's resignation pursuant to this Section 9, then the Board may fill the resulting vacancy pursuant to these By-Laws and the Certificate of Incorporation. Unless required by statute, or determined by the chairman of the meeting to be advisable, the vote on any question need not be by written ballot. On a vote by written ballot each, ballot shall be signed by the shareholder voting, or by his proxy, if there be such proxy, and shall state the number of shares voted.

If approved by our shareholders, this amendment will become effective at close of the Annual Meeting. Assuming a quorum is present at the Annual Meeting, the amendment to the By-Laws will be approved if it receives the affirmative vote of a majority of the votes present in person or by proxy by the holders of shares entitled to vote therein. Abstentions will have the same effect as a vote against this proposal. Broker non-votes, if any, will not be counted as votes cast for such purposes.

**THE BOARD UNANIMOUSLY RECOMMENDS A VOTE "FOR" PROPOSAL 7 TO AMEND THE BY-LAWS TO IMPLEMENT MAJORITY VOTING IN UNCONTESTED DIRECTOR ELECTIONS.**

## OTHER MATTERS

Except as discussed in the Proxy Statement, First Supplement and this Second Supplement, the Board does not know of any matters that are to be properly presented at the Annual Meeting other than those stated in the Notice of Annual Meeting and referred to in the Proxy Statement, First Supplement and this Second Supplement.

If other matters properly come before the Annual Meeting, it is the intention of the persons named in the enclosed proxy card to vote thereon in accordance with their best judgment. Moreover, the Board reserves the right to adjourn or postpone the Annual Meeting for failure to obtain a quorum, for legitimate scheduling purposes or based on other circumstances that, in the Board's belief, would cause such adjournments or postponements to be in the best interests of all Enzo shareholders.

### Participants in the Company's Solicitation

Under applicable SEC regulations, each of the Company's directors and certain executive officers and other employees of the Company are deemed to be "participants" in this proxy solicitation. Please refer to the sections of the Proxy Statement, the First Supplement and this Second Supplement entitled "Security Ownership of Certain Beneficial Owners and Management" and the section of the Proxy Statement "Certain Information Regarding Participants in this Proxy Solicitation" for information about our directors and certain of our executive officers who may be deemed to be participants in the solicitation. Except as described in the Proxy Statement, First Supplement and this Second Supplement, there are no agreements or understandings between the Company and any such participants relating to employment with the Company or any future transactions.

### Forward-Looking Statements

This Second Supplement contains "forward-looking statements" within the meaning of the U.S. Private Securities Litigation Reform Act of 1995, Section 27A of the Securities Act, and Section 21E of the Exchange Act. These forward-looking statements are predictions and generally can be identified by use of statements that include phrases such as "plan," "expect," "will," "should," "could," "anticipate," "intend," "project," "estimate," "guidance," "possible," "continue" and other similar terms and phrases, including references to assumptions and forecasts of future results. Forward-looking statements are not guarantees of future performance and involve known and unknown risks, uncertainties and other factors that may cause the actual results to differ materially from those anticipated at the time the forward-looking statements are made. These risks include, but are not limited to, those described in "Risk Factors" and elsewhere in the Company's Annual Report on Form 10-K, for the year ended July 31, 2019 and subsequent filings with the SEC. These factors should be considered carefully and readers are cautioned not to place undue reliance on such forward-looking statements. No assurance can be given that the future results covered by the forward-looking statements will be achieved. Except as required by applicable law, all information contained herein is as of the date of this Second Supplement, and the Company does not intend to update this information.

### **IMPORTANT NOTICE REGARDING THE AVAILABILITY OF PROXY MATERIALS FOR THE SHAREHOLDER MEETING TO BE CONVENED ON JANUARY 31, 2020 AND ADJOURNED AND RECONVENED ON FEBRUARY 25, 2020**

The Notice of Annual Meeting of Shareholders, the Proxy Statement, the First Supplement, this Second Supplement, the Company's 2019 Annual Report on Form 10-K and Form 10-K/A for the fiscal year ended July 31, 2019, and form of **GOLD** proxy card, and any amendments thereto, are available free of charge at <http://www.enzo.com/corporate/investor-information/enzo-sec-filings>. Information on our website does not constitute part of the Company's proxy solicitation materials.

Shareholders may also obtain a copy of these materials by writing to Enzo Biochem, Inc., 527 Madison Avenue, New York, NY 10022, Attention: Investor Relations. Upon payment of a reasonable fee, shareholders may also obtain a copy of the exhibits to our Annual Report on Form 10-K and Form 10-K/A for our fiscal year ended July 31, 2019. Any request for such materials should be delivered to the Company before February 7, 2020 to facilitate timely delivery.

For information on how to obtain directions to be able to attend the Annual Meeting and vote in person, please write to the Company's principal corporate office at 527 Madison Avenue, New York, NY 10022, Attention: Investor Relations or call (212) 583-0100 requesting such information.

**THE BOARD UNANIMOUSLY RECOMMENDS VOTING "FOR" PROPOSAL 1, "FOR" THE ELECTION OF THE NOMINEES UNDER PROPOSALS 3 AND 4 AND "FOR" PROPOSALS 5, 6 AND 7 USING THE ENCLOSED GOLD PROXY CARD. THE BOARD MAKES NO RECOMMENDATION ON PROPOSAL 2.** Shareholders voting using the enclosed GOLD proxy card will be unable to cast a vote with respect to the Harbert Nominees and shareholders wishing to vote for the Harbert Nominees must vote on a blue proxy card provided by Harbert.

**EVEN IF YOU PREVIOUSLY SUBMITTED A WHITE PROXY CARD, WE URGE YOU TO FILL OUT THE ENCLOSED GOLD PROXY CARD TODAY. ONLY YOUR LATEST DATED PROXY CARD WILL BE COUNTED.**

If you previously submitted a white or blue card, votes cast for either Mr. Weiner and/or Dr. Hanna will not be counted with respect to the proposal to elect two Class II Directors as neither Mr. Weiner nor Dr. Hanna remain up for election as Class II Directors. Votes cast on the white card will no longer be counted for purposes of electing Mr. Weiner to the Board. Dr. Hanna no longer stands for election as a director of any class as Mr. Weiner is now up for election as a director of a different class for a different term. However, votes cast on any of the other remaining proposals using either of the two white proxy cards will be counted. Furthermore, even though the proposal to elect two Class II Directors has been redesignated as proposal 2, any votes cast in favor of the Harbert Nominees on the blue proxy card provided by Harbert will still be counted.

Kingsdale Advisors is assisting us with our effort to solicit proxies. Therefore, requests for the above materials can also be made to Kingsdale Advisors through the following channels: (1) by calling (888) 518-1554 (toll-free in North America); (2) by calling (416) 867-2272 (outside of North America); or (3) by emailing [ENZ@kingsdaleadvisors.com](mailto:ENZ@kingsdaleadvisors.com). Additionally, if you have any questions or require assistance in authorizing a proxy or voting your shares of our Common Stock or in obtaining any of the above materials, please contact Kingsdale Advisors through one of the three channels listed above. We are not aware of any other business, or any other nominees for election as directors, that may properly be brought before the Annual Meeting.

IF YOU ARE A RECORD HOLDER OF SHARES, OR AN OWNER WHO OWNS SHARES IN "STREET NAME" AND OBTAINS A "LEGAL" PROXY FROM YOUR BROKER, BANK, TRUSTEE OR NOMINEE, YOU STILL MAY ATTEND THE ANNUAL MEETING AND VOTE YOUR SHARES OR REVOKE YOUR PRIOR VOTING INSTRUCTIONS.

Regardless of the number of shares of our Common Stock that you own, your vote will be very important. Thank you for your continued support, interest and investment in Enzo Biochem, Inc.

#### **WHERE YOU CAN FIND MORE INFORMATION**

In addition to the information about the Company and its subsidiaries contained in the Proxy Statement, the First Supplement and this Second Supplement, additional information about the Company can be found on our website located at [www.enzo.com](http://www.enzo.com), including information about our management team, products and services and our corporate governance practices.

The corporate governance information on our website includes the Company's Corporate Governance Guidelines, the Code of Business Conduct and Ethics, and the charters of each of the committees of the Board. These documents can be accessed at [www.enzo.com](http://www.enzo.com). Printed versions of our Corporate Governance Guidelines, our Code of Conduct and the charters for our Board committees can be obtained, free of charge, by writing to the Company at: 527 Madison Avenue, New York, NY 10022, Attention: Investor Relations.

We are also required to file annual, quarterly and current reports, proxy statements and other information with the SEC. You may read and copy any document we file at the SEC's public reference room located at 100 F Street, N.E., Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information on the public reference room. Our SEC filings are also available to the public at the SEC's website at [www.sec.gov](http://www.sec.gov). You also may obtain free copies of the documents we file with the SEC by

going to our website, the address of which is <http://www.enzo.com/corporate/investor-information/enzo-sec-filings>. The information provided on our website is not part of the Proxy Statement, the First Supplement and this Second Supplement, and therefore is not incorporated by reference.

Shareholders are entitled to express their views regarding the topics raised in the Proxy Statement, the First Supplement and this Second Supplement or other matters directly to the Company through written communications sent directly to the attention of the Board, any individual director or the “non-employee directors” as a group, by written communications addressed in care of Enzo Biochem, Inc., 527 Madison Avenue, New York, NY 10022, Attention: Investor Relations.

This information about Enzo’s website and its content, together with other references to the website made in the Proxy Statement, the First Supplement and this Second Supplement, is for information only and the content of the Company’s website is not deemed to be incorporated by reference in the Proxy Statement, First Supplement and this Second Supplement or otherwise filed with the SEC.

The contents and sending of this Second Supplement have been approved by all of the directors of the Company. Dated as of the 14th day of February 2020.

**ENZO BIOCHEM, INC.**

/s/ Barry W. Weiner

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Barry W. Weiner  
President, Treasurer and Director

## ANNEX A CERTAIN INFORMATION REGARDING PARTICIPANTS IN THIS PROXY SOLICITATION

### **Other Contracts, Arrangements and Understandings with Participants**

Except as otherwise set forth in the Proxy Statement, the First Supplement and this Second Supplement, to the best of the Company's knowledge: (i) none of the participants in the Company's solicitation of proxies is, or was within the past year, a party to any contract, arrangement or understanding with any person with respect to any securities of the Company, including, but not limited to, joint ventures, loan or option arrangements, puts or calls, guarantees against loss or guarantees of profit, division of losses or profits or the giving or withholding of proxies; (ii) neither any of the participants nor any of their respective associates has any arrangement or understanding with any person 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; and (iii) no participant knows of any arrangements, including any pledge by any person of securities of the Company or any of the Company's parents and the operation of which may at a subsequent date result in a change in control of the Company.

### **Beneficial Ownership of the Common Stock by Associates of Participants**

To the best of the Company's knowledge, other than as set forth in the Proxy Statement, the First Supplement and this Second Supplement, none of the participants in the Company's solicitation of proxies has any "associates" (as defined in Rule 14a-1 under the Exchange Act) who beneficially own any shares of the Company's Common Stock.

### **Beneficial Ownership of Securities of the Company's Subsidiaries**

To the best of the Company's knowledge, other than as set forth in the Proxy Statement, the First Supplement and this Second Supplement, none of the participants in the Company's solicitation of proxies beneficially owns, directly or indirectly, any securities of any parent or subsidiary of the Company.

### **Other Proceedings**

There are no material proceedings to which the participants or any of his or her associates is a party adverse to the Company or has a material interest adverse to the Company.

### **Miscellaneous Information Concerning Participants**

Except as described in the Proxy Statement, the First Supplement and this Second Supplement, none of the participants (i) beneficially owns (within the meaning of Rule 13d-3 under the Exchange Act), directly or indirectly, any shares or other securities of the Company or any of the Company's subsidiaries; (ii) owns any securities of the Company of record but not beneficially; (iii) has purchased or sold any of such securities within the past two years; or (iv) is, or within the past year was, a party to any contract, arrangement or understanding with any person with respect to any such securities. No part of the purchase price or market value of any of the Company's securities owned by any participant is represented by funds borrowed or otherwise obtained for the purpose of acquiring or holding such securities. Except as disclosed in the Proxy Statement, the First Supplement and this Second Supplement, none of the participants' associates beneficially owns, directly or indirectly, any of the Company's securities. Other than as disclosed in the Proxy Statement, the First Supplement and this Second Supplement, neither the Company nor any of the participants has any substantial interests, direct or indirect, by security holding or otherwise, in any matter to be acted upon pursuant to the Proxy Statement, the First Supplement and this Second Supplement or is or has been within the past year a party to any contract, arrangement or understanding with any person with respect to any of the Company's securities, including, but not limited to, joint ventures, loan or option agreements, puts or calls, guarantees against loss or guarantees of profit, division of losses or profits or the giving or withholding of proxies. Other than as set forth in the Proxy Statement, the First Supplement and this

Second Supplement, none of the Company, the participants or any of their affiliates has had or will have a direct or indirect material interest in any transaction or series of similar transactions since the beginning of the Company's last fiscal year or any currently proposed transactions, or series of similar transactions, to which the Company or any of the Company's subsidiaries was or is to be a party in which the amount involved exceeds \$120,000.

Other than as set forth in the Proxy Statement, the First Supplement and this Second Supplement, none of the Company, any of the participants or any of their affiliates has any arrangements or understandings with any person with respect to any future employment by the Company or the Company's affiliates or with respect to any future transactions to which the Company or any of its affiliates will or may be a party.

Other than as set forth in the Proxy Statement, the First Supplement and this Second Supplement, there are no material legal proceedings in which any of the directors or executive officers of the Company is a party adverse to the Company or any of its subsidiaries, or proceedings in which such directors or executive officers have a material interest adverse to the Company or any of its subsidiaries. Other than as set forth in the Proxy Statement, the First Supplement and this Second Supplement, none of the Company or any of the other participants has been convicted in a criminal proceeding (excluding traffic violations or similar misdemeanors) during the past ten years.

Our Certificate of Incorporation and the By-Laws also provide that we shall indemnify and hold harmless each person who serves at any time as a director, officer, employee or agent of the Company from and against any and all claims, judgments and liabilities to which such person shall become subject by reason of the fact that he is or was a director, officer, employee or agent of the Company and shall reimburse such person for all legal and other expenses reasonably incurred by him or her in connection with any such claim or liability. We also have the power to defend such person from all suits or claims in accord with New York law. The rights accruing to any person under our Certificate of Incorporation and the By-Laws do not exclude any other right to which any such person may lawfully be entitled, and we may indemnify or reimburse such person in any proper case, even though not specifically provided for by our Certificate of Incorporation and the By-Laws.



## Questions? Need Help Voting?

Please contact our Strategic Shareholder Advisor and Proxy Solicitation Agent, Kingsdale Advisors

CONTACT US:



**Kingsdale Advisors**

1-888-518-1554 (toll-free in North America)

(416) 867-2272 (outside of North America)

email: [ENZ@kingsdaleadvisors.com](mailto:ENZ@kingsdaleadvisors.com)

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**Form of Gold Proxy  
ENZO BIOCHEM, INC.  
YOUR VOTE IS IMPORTANT**

Please take a moment now to vote your shares of Enzo Biochem,  
Inc. common stock for the upcoming Annual Meeting of  
Shareholders.

**YOU CAN VOTE TODAY IN ONE OF THREE WAYS:**

1. **VOTE BY TELEPHONE** – Call toll-free from the U.S. or Canada at 1-800-PROXIES (1-800-776-9437), on a touch-tone telephone. If outside the U.S. or Canada, call 1-718-921-8500. Then, simply follow the easy voice prompts. You will be required to provide the unique control number printed below.

**OR**

2. **VOTE BY INTERNET** – Please access [www.voteproxy.com](http://www.voteproxy.com), and follow the simple instructions provided. Please note you must type an "s" after "http". You will be required to provide the unique control number printed below.

**CONTROL NUMBER:**

You may vote 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, executed and returned a proxy card.

**OR**

3. **VOTE BY MAIL** – Mark, sign and date your proxy card and return it in the postage-paid envelope we have provided or mail it to AST Financial, 6201 15th Avenue, Brooklyn, NY 11219, Attention: Proxy Operations.

▼ TO VOTE BY MAIL, PLEASE DETACH PROXY CARD HERE AND RETURN IN THE POSTAGE-PAID ENVELOPE PROVIDED. ▼

Please mark your vote as indicated in this example

**THIS PROXY CARD IS VALID ONLY WHEN SIGNED AND DATED.**

**The Board of Directors recommends you vote "FOR" Proposal 1, "FOR" all of the nominees under Proposals 3 and 4 and "FOR" Proposals 5, 6 and 7.**

- |  |   |
|--|---|
| <p>1. Company proposal to approve an amendment to the Company's By-Laws to increase the size of the Board:<br/>For <input type="checkbox"/>                      Against <input type="checkbox"/>                      Abstain <input type="checkbox"/></p> <p>2. This card will not be voted for the election of two Class II Directors. Shareholders wishing to vote on the Harbert Nominees must do so by voting on a blue proxy card provided by Harbert. However, since the Board has not proposed any director candidates to oppose the Harbert Nominees, assuming Harbert or any other shareholder votes for them, both Harbert Nominees will be elected to the Board.</p> <p>3. Election of Rebecca J. Fischer as a Class I Director:<br/>For <input type="checkbox"/>                      Withhold <input type="checkbox"/></p> <p>4. If the shareholders approve Proposal 1, election of Barry W. Weiner as a Class III Director:<br/>For <input type="checkbox"/>                      Withhold <input type="checkbox"/></p> | <p>5. Company proposal to approve, on an advisory basis, Named Executive Officer compensation:<br/>For <input type="checkbox"/>                      Against <input type="checkbox"/>                      Abstain <input type="checkbox"/></p> <p>6. Company proposal to ratify the appointment of EisnerAmper, LLP, as the Company's independent registered public accounting firm for fiscal 2020:<br/>For <input type="checkbox"/>                      Against <input type="checkbox"/>                      Abstain <input type="checkbox"/></p> <p>7. Company proposal to approve an amendment to the Company's By-Laws to implement majority voting in uncontested director elections:<br/>For <input type="checkbox"/>                      Against <input type="checkbox"/>                      Abstain <input type="checkbox"/></p> |
|--|---|

Date: \_\_\_\_\_

Signature: \_\_\_\_\_

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

Title(s): \_\_\_\_\_

NOTE: Please sign exactly as your name(s) appear(s) hereon. When signing as attorney, executor, administrator, trustee, guardian, custodian or other fiduciary, please give full title as such. Joint owners should each sign personally. All holders must sign. If a corporation or partnership, please sign in full corporate or partnership name by authorized officer.

PLEASE VOTE TODAY!  
SEE REVERSE SIDE  
FOR THREE EASY WAYS TO VOTE.

▼ TO VOTE BY MAIL, PLEASE DETACH PROXY CARD HERE, SIGN, DATE AND RETURN IN THE POSTAGE-PAID ENVELOPE PROVIDED ▼

THIS PROXY IS SOLICITED ON BEHALF OF  
THE BOARD OF DIRECTORS OF ENZO BIOCHEM, INC.



2019 ANNUAL MEETING OF SHAREHOLDERS

The undersigned hereby appoints Dov Perlisky and Barry W. Weiner or any of the foregoing, as proxies, each with full power of substitution, revoking all proxies previously given, and hereby authorizes them to represent and to vote, as designated on the reverse side of this form, all shares of common stock of Enzo Biochem, Inc. that the undersigned would be entitled to vote if personally present at the 2019 Annual Meeting of Shareholders to be convened at 9:00 a.m. on January 31, 2020 and immediately adjourned and reconvened on February 25, 2020 at 9:00 a.m. at The Yale Club of New York City, 50 Vanderbilt Avenue, New York, NY 10017 including any adjournments, postponements or continuations thereof, (the "Annual Meeting").

This proxy, when properly executed, will be voted in the manner specified on the reverse side. **IF THIS PROXY IS EXECUTED, BUT NO INSTRUCTION IS GIVEN, THIS PROXY WILL BE VOTED "FOR" PROPOSAL 1, "FOR" ALL OF THE NOMINEES UNDER PROPOSALS 3 and 4 AND "FOR" PROPOSALS 5, 6 and 7. Since the Harbert Nominees have not consented to be named in the Company's proxy statement and proxy card, this proxy will not be voted on Proposal 2. However, since the Board is not nominating any director candidates to oppose the Harbert Nominees, assuming Harbert or any other shareholder votes for them, both Harbert Nominees will be elected to the Board.** Shareholders who nonetheless wish to cast votes in favor of the Harbert Nominees must do so by voting on a blue proxy card provided by Harbert. The proposals are more fully described in the Proxy Statement, First Supplement and Second Supplement. If a matter is not timely submitted pursuant to Rule 14a-4(c)(1), the proxies appointed in this proxy card will have discretionary authority to vote with respect to any such matter subsequently and properly raised at the Annual Meeting. Only shareholders of record as of the close of business on December 3, 2019, may vote at the Annual Meeting.

PLEASE MARK, SIGN, DATE AND RETURN THE PROXY CARD, USING THE ENCLOSED ENVELOPE.

**YOUR VOTE IS IMPORTANT - PLEASE VOTE TODAY**

**Continued and to be signed and dated on reverse side**

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