

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

**SCHEDULE 14A
(RULE 14a-101)
INFORMATION REQUIRED IN PROXY STATEMENT**

SCHEDULE 14A INFORMATION

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

Filed by the Registrant ☒
Filed by a Party other than the Registrant ☐

Check the appropriate box:

- ☐ Preliminary Proxy Statement
☐ **Confidential, for Use of the Commission Only (as permitted by Rule 14a-6(e)(2))**
☒ Definitive Proxy Statement
☐ Definitive Additional Materials
☐ Soliciting Material Pursuant to Section 240.14a-12

SYNTHETIC BIOLOGICS, INC.

(Name of Registrant as Specified in Its Charter)

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

Payment of Filing Fee (check the appropriate box):

- ☒ No fee required.
☐ Fee paid previously with preliminary materials.
☐ Fee computed on table in exhibit required by Item 25(b) per Exchange Act Rules 14a6(i)(1) and 0-11.
-



**9605 Medical Center Drive, Suite 270
Rockville, MD 20850
(301) 417-4364**

NOTICE OF 2022 ANNUAL MEETING OF STOCKHOLDERS

To the Stockholders of Synthetic Biologics, Inc.:

We hereby notify you that the 2022 Annual Meeting of Stockholders of Synthetic Biologics, Inc., a Nevada corporation (the "Company"), will be held on September 30, 2022 at 9:30 a.m. (Eastern Time), at the offices of the Company, located at 9605 Medical Center Drive, Suite 270, Rockville, Maryland 20850, for the following purposes:

- (1) to elect the four (4) nominees for director named in the accompanying proxy statement to hold office until our next annual meeting of stockholders and until their successors are duly elected and qualified;
- (2) to ratify the appointment of BDO USA, LLP as our independent registered public accounting firm for our fiscal year ending on December 31, 2022;
- (3) to approve amendments to our 2020 Stock Incentive Plan to increase the number of shares of common stock that we will have authority to grant under the plan from 400,000 to 7,000,000 and increase the annual non-employee director grant limit to 1,000,000 shares of common stock;
- (4) to approve, on an advisory basis, the compensation of our named executive officers, as disclosed in this proxy statement;
- (5) to approve an amendment to the Company's Articles of Incorporation, as amended (the "Articles of Incorporation"), in substantially the form attached to the proxy statement as Appendix A, to change the name of the Company to "Theriva Biologics, Inc.";
- (6) to approve an amendment to the Company's Articles of Incorporation, in substantially the form attached to the proxy statement as Appendix B, to, at the discretion of the Board of Directors of the Company, effect an increase the number of authorized shares of common stock from 20,000,000 to 350,000,000 (the "Authorized Common Stock Increase"), such amendment to be effected after stockholder approval thereof only in the event the Board of Directors still deems it advisable;
- (7) to approve the adjournment of the Annual Meeting to a later date, if necessary or appropriate, to permit further solicitation and vote of proxies in the event that there are insufficient votes for, or otherwise in connection with, the approval of Proposal 6 (the Authorized Common Stock Increase); and
- (8) to transact such other business as may properly come before the meeting or any adjournments or postponements of the meeting.

The matters listed in this notice of meeting are described in detail in the accompanying Proxy Statement. Our Board of Directors has fixed the close of business on August 3, 2022 as the record date for determining those stockholders who are entitled to notice of and to vote at the meeting or any adjournment or postponement of our 2022 Annual Meeting of Stockholders. The list of the stockholders of record as of the close of business on August 3, 2022 will be made available for inspection at the meeting and during the ten days preceding the meeting at the Company's offices located at 9605 Medical Center Drive, Suite 270, Rockville, Maryland 20850.

IMPORTANT NOTICE REGARDING THE AVAILABILITY OF PROXY MATERIALS FOR THE 2022 ANNUAL MEETING OF STOCKHOLDERS TO BE HELD ON SEPTEMBER 30, 2022:

THE NOTICE OF ANNUAL MEETING OF STOCKHOLDERS, THE PROXY STATEMENT AND OUR ANNUAL REPORT ON FORM 10-K FOR THE YEAR ENDED DECEMBER 31, 2021 ARE AVAILABLE ELECTRONICALLY AT WWW.SYNTHETICBIOLOGICS.COM.

Along with the attached Proxy Statement, we are sending to you our Annual Report on Form 10-K for the year ended December 31, 2021. Such annual report, which includes our audited financial statements, is not to be regarded as proxy solicitation material.

YOUR VOTE IS IMPORTANT

Even if you plan to attend the meeting, please submit a proxy to have your shares voted as promptly as possible by using the internet or kindly sign, date, and return the enclosed proxy card in the envelope provided so that your vote will be counted if you later decide not to attend the meeting. No postage is required if the proxy card is mailed in the United States.

By Order of the Board of Directors,

/s/ Steven A. Shallcross

Chief Executive Officer,
Chief Financial Officer and Director
Rockville, Maryland

August 16, 2022

TABLE OF CONTENTS

	Page
PROXY STATEMENT	1
INFORMATION ABOUT VOTING	3
PROPOSAL 1: ELECTION OF DIRECTORS	12
THE NOMINEES	12
DIRECTOR INDEPENDENCE	12
INFORMATION ABOUT THE NOMINEES	12
INFORMATION REGARDING THE BOARD OF DIRECTORS AND CORPORATE GOVERNANCE	15
INFORMATION REGARDING THE COMMITTEES OF THE BOARD OF DIRECTORS	17
DIRECTOR COMPENSATION	20
LIMITS ON LIABILITY AND INDEMNIFICATION	21
COMPENSATION COMMITTEE INTERLOCKS	21
PROPOSAL 2: RATIFICATION OF APPOINTMENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM	22
REPORT OF THE AUDIT COMMITTEE OF THE BOARD OF DIRECTORS	22
AUDIT FEES AND ALL OTHER FEES	23
PROPOSAL 3: APPROVAL OF AN AMENDMENT TO THE COMPANY'S 2020 STOCK INCENTIVE PLAN TO INCREASE THE NUMBER OF SHARES OF COMMON STOCK THAT WE WILL HAVE AUTHORITY TO GRANT UNDER THE PLAN FROM 400,000 TO 7,000,000;	25
EQUITY COMPENSATION PLAN INFORMATION	31
PROPOSAL 4: ADVISORY VOTE ON THE APPROVAL OF EXECUTIVE COMPENSATION	32
PROPOSAL 5: APPROVAL OF AN AMENDMENT TO THE COMPANY'S ARTICLES OF INCORPORATION TO CHANGE THE NAME OF THE COMPANY TO "THERIVA BIOLOGICS, INC."	34
PROPOSAL 6: APPROVAL OF AN AMENDMENT TO THE COMPANY'S ARTICLES OF INCORPORATION TO INCREASE THE NUMBER OF AUTHORIZED SHARES OF COMMON STOCK	36
PROPOSAL 7: THE ADJOURNMENT OF THE ANNUAL MEETING	39
EXECUTIVE COMPENSATION	40
SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT	49
CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS	51
AVAILABILITY OF REPORT ON FORM 10-K	51
NOTICE REGARDING DELIVERY OF STOCKHOLDER DOCUMENTS ("HOUSEHOLDING" INFORMATION)	51
STOCKHOLDER PROPOSALS FOR THE 2023 ANNUAL MEETING	52
AVAILABLE INFORMATION ON CORPORATE GOVERNANCE AND SEC FILINGS	52
MISCELLANEOUS	52
APPENDIX A — CERTIFICATE OF AMENDMENT TO THE ARTICLES OF INCORPORATION (NAME CHANGE)	A-1
APPENDIX B — CERTIFICATE OF CHANGE TO THE ARTICLES OF INCORPORATION (AUTHORIZED COMMON STOCK INCREASE)	B-1
APPENDIX C — AMENDMENT TO THE SYNTHETIC BIOLOGICS, INC. 2020 STOCK INCENTIVE PLAN	C-1



**9605 Medical Center Drive, Suite 270
Rockville, MD 20850
(301) 417-4364**

PROXY STATEMENT

For the Annual Meeting of Stockholders to be held on September 30, 2022

This Proxy Statement is being furnished to holders of shares of common stock, \$0.001 par value per share (the "Common Stock"), Series C Convertible Preferred Stock, par value \$0.001 per share (the "Series C Convertible Preferred Stock") and/or Series D Convertible Preferred Stock, par value \$0.001 per share (the "Series D Convertible Preferred Stock") of Synthetic Biologics, Inc., a Nevada corporation ("we," "us," or the "Company"), in connection with the solicitation of proxies on behalf of our Board of Directors (the "Board of Directors") for use at our 2022 Annual Meeting of Stockholders to be held on September 30, 2022 at 9:30 a.m. (Eastern Time), at the offices of the Company, 9605 Medical Center Drive, Suite 270, Rockville, Maryland 20850, and at any adjournment or postponement of our 2022 Annual Meeting of Stockholders (the "2022 Annual Meeting of Stockholders"). The purpose of the 2022 Annual Meeting of Stockholders and the matters to be acted on are stated in the accompanying Notice of 2022 Annual Meeting of Stockholders. The Board of Directors knows of no other business that will come before the 2022 Annual Meeting of Stockholders.

The Notice of our 2022 Annual Meeting of Stockholders, this Proxy Statement, and a proxy card, together with our Annual Report on Form 10-K for the year ended December 31, 2021, are being mailed to our stockholders on or about August 22, 2022. Such annual report, which includes our audited financial statements, is not to be regarded as proxy solicitation material. We will bear the cost of our solicitation of proxies. The original solicitation of proxies by mail may be supplemented by personal interview, telephone, or facsimile by our directors, officers, or employees, who will receive no additional compensation for such services. Arrangements will be made with brokerage houses and other custodians, nominees, and fiduciaries for the forwarding of solicitation material to the beneficial owners of stock held by any such persons, and we will reimburse those custodians, nominees, and fiduciaries for the reasonable out-of-pocket expenses incurred by them in doing so.

The Board of Directors is soliciting votes (i) **FOR** each of the four (4) nominees named herein for election to the Board of Directors; (ii) **FOR** the ratification of the appointment of BDO USA, LLP as our independent registered public accounting firm for the year ending December 31, 2022; (iii) **FOR** the approval of the amendments to the Company's 2020 Stock Incentive Plan (the "Stock Incentive Plan Amendments") to increase the number of shares of Common Stock that we will have authority to grant under the plan from 400,000 to 7,000,000 and to increase the annual non-employee director grant limit to 1,000,000 shares of Common Stock (the "Stock Incentive Plan Amendments Proposal"); (iv) **FOR** the approval, on an advisory basis, of the compensation of our named executive officers, as disclosed in this Proxy Statement; (v) **FOR** approval of an amendment to the Company's Articles of Incorporation, as amended (the "Articles of Incorporation"), in substantially the form attached to the proxy statement as Appendix A, to change the name of the Company to "Theriva Biologics, Inc." (the "Name Change Proposal"); (vi) **FOR** the approval of an amendment to the Articles of Incorporation, in substantially the form attached to the proxy statement as Appendix B, at the discretion of the Board of Directors of the Company, to effect an increase in the number of authorized shares of Common Stock from 20,000,000 to 350,000,000 (the "Authorized Common Stock Increase Proposal"), such amendment to be effected after stockholder approval thereof only in the event the Board of Directors still deems it advisable; and (vii) **FOR** approval of the adjournment the 2022 Annual Meeting of Stockholders to a later date, if necessary or appropriate, to permit further solicitation and vote of proxies in the event that there are insufficient votes for, or otherwise in connection with, the approval of Proposal 6 (the Authorized Common Stock Increase Proposal) (the "Adjournment Proposal").

2022 ANNUAL MEETING ADMISSION

All stockholders who own shares of Common Stock, Series C Convertible Preferred Stock and/or Series D Convertible Preferred Stock as of the record date are welcome to attend the 2022 Annual Meeting of Stockholders. If you attend, please note that you will be asked to present government-issued identification (such as a driver's license or passport) and evidence of your share ownership of our Common Stock, Series C Convertible Preferred Stock or Series D Convertible Preferred Stock on the record date. This can be your proxy card if you are a stockholder of record. If your shares are held beneficially in the name of a bank, broker or other holder of record and you plan to attend the 2022 Annual Meeting of Stockholders, you will be required to present proof of your ownership of our Common Stock on the record date, such as a bank or brokerage account statement or voting instruction card, to be admitted to the 2022 Annual Meeting.

No cameras, recording equipment or electronic devices will be permitted in the 2022 Annual Meeting of Stockholders.

Information on how to obtain directions to attend the 2022 Annual Meeting of Stockholders is available at: www.syntheticbiologics.com.

INFORMATION ABOUT VOTING

Q: *Why am I receiving these materials?*

A: Our Board of Directors is providing these proxy materials to you in connection with our 2022 Annual Meeting of Stockholders, which is scheduled to take place on September 30, 2022.

Q: *What information is contained in these materials?*

A: The information included in this Proxy Statement relates to the proposals to be voted on at the 2022 Annual Meeting of Stockholders, the voting process, the compensation of our directors and executive officers, and other required information.

Q: *What items of business will be voted on at the 2022 Annual Meeting of Stockholders?*

A: The seven (7) items of business scheduled to be voted on at the 2022 Annual Meeting of Stockholders are: (i) the election of our directors named herein; (ii) the ratification of the appointment of BDO USA, LLP as our independent registered public accounting firm for the year ending December 31, 2022; (iii) approval of the Stock Incentive Plan Amendments Proposal; (iv) approval, on an advisory basis, of the compensation of our named executive officers, as disclosed in this Proxy Statement; (v) approval of the Name Change Proposal; (vi) approval of the Authorized Common Stock Increase Proposal; and (vii) the Adjournment Proposal.

Q: *How does the Board of Directors recommend that I vote?*

A: The Board of Directors recommends that you vote your shares: (i) **FOR** each of the four (4) nominees named herein for election to the Board of Directors; (ii) **FOR** the ratification of the appointment of BDO USA, LLP as our independent registered public accounting firm for the year ending December 31, 2022; (iii) **FOR** the Stock Incentive Plan Amendments Proposal; (iv) **FOR** the approval, on an advisory basis, of the compensation of our named executive officers, as disclosed in this Proxy Statement; (v) **FOR** the Name Change Proposal; (vi) **FOR** the Authorized Common Stock Increase Proposal; and (vii) **FOR** the Adjournment Proposal.

Q: *Shareholders Entitled to Vote?*

A: Only stockholders who own our Common Stock, Series C Convertible Preferred Stock and/or Series D Convertible Preferred Stock, as of the close of business on August 3, 2022, the record date for the 2022 Annual Meeting (the "Record Date"), will be entitled to vote at the 2022 Annual Meeting of Stockholders.

On July 29, 2022, the Company closed a preferred stock offering, in which the Company issued 275,000 shares of Series C Convertible Preferred Stock and 100,000 shares of Series D Convertible Preferred Stock (collectively, the "Preferred Stock")

Q: *How many shares are outstanding and how many votes is each share entitled?*

A: On the record date, (i) 15,844,339 shares of Common Stock were issued and outstanding, (ii) 275,000 shares of Series C Convertible Preferred Stock, convertible into 1,803,279 shares of Common Stock, were issued and outstanding and (iii) 100,000 shares of Series D Convertible Preferred Stock, convertible into 655,738 shares of Common Stock, were issued and outstanding.

Holders of record of our Common Stock and our Preferred Stock as of the close of business on the Record Date will be entitled to notice of and to vote at the 2022 Annual Meeting of Stockholders and at any adjournments or postponements thereof.

Each share of our Common Stock that is issued and outstanding as of the close of business on August 3, 2022, the Record Date, is entitled to be voted on all items being voted on at the 2022 Annual Meeting of Stockholders, with each share being entitled to one vote on each matter.

Holders of record of shares of Preferred Stock have the right to vote only on Proposal 5 (Name Change Proposal), Proposal 6 (Authorized Common Stock Increase Proposal) and any Proposal 7

(Adjournment Proposal). Holders of Common Stock and Preferred Stock will vote on the Name Change Proposal, the Authorized Common Stock Increase Proposal and any Adjournment Proposal as a single class. Only holders of Common Stock are entitled to vote on Proposal 1 (Election of Directors Proposal), Proposal 2 (Auditor Ratification Proposal), Proposal 3 (2020 Stock Incentive Plan Amendment Proposal), and Proposal 4 (Say On Pay Proposal).

The Certificate of Designation of Preferences, Rights and Limitations of Series C Convertible Preferred Stock provides that the holders of record of the Series C Convertible Preferred Stock outstanding on the Record Date are entitled to a number of votes equal to the number of shares of Common Stock issuable upon conversion of such shares (whether or not such shares are then convertible) or an aggregate of 1,803,279 votes. The holders of the Series C Convertible Preferred Stock, however, have agreed that they may only submit 1,549,295 of the votes relating to the Series C Convertible Preferred Stock that they would otherwise be entitled to vote. The holders of the Series C Convertible Preferred Stock have also agreed to: (i) not transfer their shares of Series C Convertible Preferred Stock until the earlier of the date that the Authorized Common Stock Increase is effected or October 26, 2022 (which may be extended to December 31, 2022 if certain conditions are met), (ii) attend the 2022 Annual Meeting of Stockholders, (iii) submit 1,549,295 of the votes relating to the Series C Convertible Preferred Stock that they would otherwise be entitled to vote in favor of the Name Change Proposal, the Authorized Common Stock Increase Proposal and the Adjournment Proposal, and (iv) upon request by the Company, grant the Company or its designee an irrevocable proxy to vote all shares of Series C Convertible Preferred Stock in favor of the Name Change Proposal, the Authorized Common Stock Increase Proposal and the Adjournment Proposal.

Each share of Series D Convertible Preferred Stock outstanding on the Record Date may only vote on the Name Change Proposal, the Authorized Common Stock Increase Proposal and the Adjournment Proposal and is entitled to 20,000 votes per share of Series D Convertible Preferred Stock, or an aggregate of 2,000,000,000 votes on such proposals; provided that the shares voted by holders of our Series D Convertible Preferred Stock shall be counted by us in the same proportion as the aggregate shares of Common Stock and Series C Convertible Preferred Stock are voted (excluding any shares of Common Stock that are noted voted) on such proposals at the 2022 Annual Meeting of Stockholders. As of the Record Date, there were 100,000 shares of our Series D Convertible Preferred Stock issued and outstanding, convertible into an aggregate of 655,738 shares of Common Stock. The holders of the Series D Convertible Preferred Stock have agreed to: (i) not transfer their shares of Series D Convertible Preferred Stock until the earlier of the date that the Authorized Common Stock Increase is effected or October 26, 2022 (which may be extended to December 31, 2022 if certain conditions are met), (ii) attend the 2022 Annual Meeting of Stockholders, (iii) to vote all shares of Series D Convertible Preferred Stock on the Name Change Proposal, the Authorized Common Stock Increase Proposal and the Adjournment Proposal in the same proportion as the aggregate shares of Common Stock and Series C Convertible Preferred Stock are voted on each such proposal and, (iv) upon request by the Company, grant the Company or its designee an irrevocable proxy to vote the shares of Series D Convertible Preferred Stock in accordance with the above. As an example, if 70% of the aggregate votes cast by Common Stock and Series C Convertible Preferred Stock voting on the Name Change Proposal are voted in favor thereof and 30% of the aggregate votes cast by Common Stock and Series C Convertible Preferred Stock voting on the Name Change Proposal are voted against such proposals, then 70% of the votes entitled to be cast by Series D Convertible Preferred Stock will be cast in favor of the proposals and 30% of such votes will be cast against the proposal.

Q: *What is the difference between holding shares as a stockholder of record and as a beneficial owner?*

A: Most of our stockholders hold their shares through a broker or other nominee rather than directly in their own name. As summarized below, there are some distinctions between shares held of record and those owned beneficially. If your shares are registered directly in your name with our transfer agent, Equiniti Group plc (formerly Corporate Stock Transfer, Inc.), you are considered, with respect to those shares, the stockholder of record and these proxy materials are being sent directly to you by us. As the stockholder of record, you have the right to grant your voting proxy directly to Mr. Steven Shallcross, our Chief Executive Officer, Chief Financial Officer and a Director, or to vote in person at the meeting. The Board of Directors has enclosed a proxy card for stockholders of record to use to grant a voting proxy.

If your shares are held in a brokerage account or by another nominee, you are considered the beneficial owner of shares held in “street name,” and these proxy materials are being forwarded to you by your broker or nominee together with a voting instruction card. As the beneficial owner, you have the right to direct your broker or nominee how to vote. Since you are not the stockholder of record, however, you may not vote these shares in person at the meeting unless you obtain from the broker or nominee that holds your shares a valid proxy giving you the right to vote the shares. Your broker or nominee should have enclosed or provided voting instructions for you to use in directing the broker or nominee how to vote your shares. If you hold your shares through a broker and you do not give instructions to the record holder on how to vote, the record holder will be entitled to vote your shares in its discretion on certain matters considered routine, such as the ratification of the appointment of our independent registered public accounting firm, the Name Change Proposal, the Authorized Common Stock Increase Proposal and the Adjournment Proposal. Proposals 1, 3 and 4 are not considered routine matters. If you hold your shares in street name and you do not instruct your broker how to vote for Proposals 1, 3 and 4, no votes will be cast on your behalf for these non-routine matters for which you have not provided voting instructions. These “broker non-votes” will be treated as shares that are present and entitled to vote for purposes of determining the presence of a quorum, but not as shares entitled to vote on these non-routine proposals.

Q: *May I attend the 2022 Annual Meeting of Stockholders?*

A: You are entitled to attend the 2022 Annual Meeting of Stockholders only if you own Common Stock, Series C Convertible Preferred Stock or Series D Convertible Preferred Stock as of the close of business on the Record Date, August 3, 2022, or you hold a valid proxy for the 2022 Annual Meeting of Stockholders. You should be prepared to present photo identification for admittance. If you are not a record holder but hold shares beneficially through a broker or nominee (that is, in “street name”), you should provide proof of beneficial ownership on the record date, such as your most recent account statement, a copy of the voting instruction card provided by your broker or nominee, or other similar evidence of ownership. If you do not provide photo identification or comply with the other procedures outlined above upon request, you may not be admitted to the 2022 Annual Meeting of Stockholders. The 2022 Annual Meeting of Stockholders will begin promptly at 9:30 a.m. (Eastern Time). Check-in will begin at 9:00 a.m., and you should allow ample time for the check-in procedures.

Q: *How can I vote my shares in person at the 2022 Annual Meeting of Stockholders?*

A: You may vote by ballot in person at the 2022 Annual Meeting of Stockholders any shares that you hold as the stockholder of record. You may only vote in person shares held in street name if you obtain from the broker or nominee that holds your shares a valid proxy giving you the right to vote the shares.

Q: *How can I vote my shares without attending the 2022 Annual Meeting of Stockholders?*

A: Whether you hold shares directly as the stockholder of record or beneficially in street name, you may, without attending the meeting, direct how your shares are to be voted.

Stockholder of Record — Shares Registered in Your Name: If you are a stockholder of record, in addition to voting in person at the 2022 Annual Meeting of Stockholders, you may vote by submitting a proxy through the internet, or vote by proxy using a proxy card. Whether or not you plan to attend the 2022 Annual Meeting of Stockholders, we urge you to submit a proxy to ensure your vote is counted. You may still attend the meeting and vote in person even if you have already voted by proxy.

- **Submit a proxy by Internet**, by going to the web address www.proxypush.com/syn and following the instructions for internet voting shown on your proxy card. Your Internet vote must be received by 11:59 p.m., Eastern Time, on September 29, 2022 to be counted.
- **Submit a proxy by mail**, by completing, signing, dating and mailing the enclosed proxy card in the envelope provided. If you return your signed proxy card to us before the 2022 Annual Meeting of Stockholders, we will vote your shares as you direct.

Beneficial Owner — Shares Registered in the Name of a Broker or Bank: If you are a beneficial owner of shares registered in the name of your broker, bank, or other agent, you should have received an instruction card containing voting instructions from that organization rather than from us. You will be

provided with instructions to vote by internet or to vote by mailing in your instruction card. Simply follow the voting instructions in the voting instruction card to ensure that your vote is counted.

We provide internet proxy voting to allow record holders to vote your shares online, with procedures designed to ensure authenticity and correctness of your proxy vote instructions. Please be aware, however, that you must bear any costs associated with your internet access, such as usage charges from internet access providers and telephone companies.

Q: *Can I change my vote?*

- A: You may change your vote at any time prior to the final vote at the 2022 Annual Meeting of Stockholders. For shares held directly in your name, you may accomplish this by: (1) sending a written notice of revocation to our Corporate Secretary at Synthetic Biologics, Inc., 9605 Medical Center Drive, Suite 270, Rockville, Maryland 20850; (2) submitting a new proxy bearing a later date (which automatically revokes the earlier proxy) subject to the voting deadlines that are described on the proxy card or voting instruction form, as applicable; (3) granting a subsequent proxy through the internet; subject to the voting deadlines that are described on the proxy card or voting instruction form, as applicable; or (4) by attending the 2022 Annual Meeting of Stockholders and voting in person. Attendance at the meeting will not cause your previously granted proxy to be revoked unless you specifically so request. ***Even if you plan to attend the 2022 Annual Meeting of Stockholders, we recommend that you also submit your proxy or voting instructions or vote through the internet so that your vote will be counted if you later decide not to attend the 2022 Annual Meeting of Stockholders.***

If your shares are held by your broker or bank as nominee or agent, you should follow the instructions provided by your broker or bank.

Q: *Can I revoke my proxy?*

- A: You may revoke your proxy before it is voted at the 2022 Annual Meeting of Stockholders. To revoke your proxy if you are a holder of record, notify our Corporate Secretary in writing at Synthetic Biologics, Inc., 9605 Medical Center Drive, Suite 270, Rockville, Maryland 20850, or deliver to our Corporate Secretary a duly executed proxy bearing a later date subject to the voting deadlines that are described on the proxy card or voting instruction form, as applicable. You may also revoke your proxy by appearing at the 2022 Annual Meeting of Stockholders in person and voting your shares. If you vote by internet as a holder of record, you may also revoke your proxy by granting a subsequent proxy by internet subject to the voting deadlines that are described on the proxy card or voting instruction form, as applicable. Attendance at the 2022 Annual Meeting of Stockholders will not, by itself, revoke a proxy. If your shares are held by your broker or bank as nominee or agent, you should follow the instructions provided by your broker or bank.

Q: *Who can help answer my questions?*

- A: If you have any questions about the 2022 Annual Meeting of Stockholders or how to vote or revoke your proxy, or you need additional copies of this Proxy Statement or voting materials, you should contact our Corporate Secretary at Synthetic Biologics, Inc., 9605 Medical Center Drive, Suite 270, Rockville, Maryland 20850 or by phone at (301) 417-4364.

Q: *How are votes counted?*

- A: In the election of directors, holders of Common Stock on the Record Date may vote **FOR** all of the four (4) nominees named herein or you may direct your vote to be **WITHHELD** with respect to any one or more of the four (4) nominees named herein.

With respect to Proposals 2, 3 and 4, holders of Common Stock may vote **FOR**, **AGAINST**, or **ABSTAIN**.

With respect to Proposal 5, 6, and 7 holders of Common Stock and Preferred Stock may vote **FOR**, **AGAINST**, or **ABSTAIN**.

If you provide specific instructions, your shares will be voted as you instruct. If you are a record holder and submit your proxy card with no further instructions, your shares will be voted in accordance with the recommendations of the Board of Directors, namely (i) **FOR** each of the four (4) nominees named herein for election to the Board of Directors; (ii) **FOR** the ratification of the appointment of BDO USA, LLP as our independent registered public accounting firm for the year ending December 31, 2022; (iii) **FOR** the Stock Incentive Plan Amendments; (iv) **FOR** the approval, on an advisory basis, of the compensation of our named executive officers, as disclosed in this Proxy Statement; (v) **FOR** the Name Change; (vi) **FOR** the Authorized Common Stock Increase; and (vii) **FOR** the Adjournment Proposal.

If you are a beneficial owner, please follow the instruction provided to you by your broker, bank or other nominee.

Preferred Stockholders

Holders of Series C Convertible Preferred Stock and Series D Convertible Preferred Stock are required to vote their shares with respect to the Name Change Proposal, the Authorized Common Stock Increase Proposal and the Adjournment Proposal as described above under “**How many shares are outstanding and how many votes is each share entitled?**”

Q: What is a quorum and why is it necessary?

A: Conducting business at the 2022 Annual Meeting of Stockholders requires a quorum. The presence, either in person or by proxy, of the holders of one third of the voting power of the capital stock issued and outstanding and entitled to vote on August 3, 2022 are necessary to constitute a quorum to conduct business at the 2022 Annual Meeting of Stockholders. For purposes of conducting business at the 2022 Annual Meeting of Stockholders, a quorum requires the presence, either in person or by proxy, of one third of the voting power of our Common Stock and Preferred Stock issued and outstanding and entitled to vote at the Annual Meeting. For purposes of the election of directors and Proposals 2, 3 and 4 only (for which the Series C Convertible Preferred Stock and Series D Convertible Preferred Stock are not entitled to vote), the quorum for such Proposals requires the presence, either in person or by proxy, of one third of the voting power of our Common Stock issued and outstanding and entitled to vote at the Annual Meeting of Stockholders. For purposes of the Proposals 5, 6 and 7 only (for which the Series C Convertible Preferred Stock and Series D Convertible Preferred Stock are entitled to vote), the quorum for such Proposals requires the presence, either in person or by proxy, of one third of the voting power of our Common Stock, Series C Convertible Preferred Stock and Series D Convertible Preferred Stock issued and outstanding and entitled to vote at the Annual Meeting of Stockholders. Your shares will be counted towards the quorum only if you submit a valid proxy (or, in the case of a beneficial owner, one is submitted on your behalf by your broker, bank or other nominee) or if you vote in person at the 2022 Annual Meeting of Stockholders. Abstentions and broker non-votes (which result when your shares are held in “street name,” your broker does not have discretion to vote such shares and you do not tell the nominee how to vote your shares, as described in detail below) are treated as present for purposes of determining whether a quorum exists. Broker non-votes are relevant in determining whether a quorum is present at the meeting. If there is no quorum, the holders of a majority of shares present at the meeting in person or represented by proxy may adjourn the meeting to another date.

Q: Will choosing not to vote my shares have the same effect as casting a vote against the Name Change Proposal, Authorized Common Stock Increase or any Adjournment Proposal?

A: No. If you prefer that the Name Change Proposal, Authorized Common Stock Increase Proposal or any Adjournment Proposal not be approved, you should cast your vote against the proposal. Approval of the Name Change Proposal and the Authorized Common Stock Increase Proposal requires the affirmative vote of the majority of the voting power of the outstanding shares of our Common Stock and Preferred Stock entitled to vote on the proposal, voting together as a single class. The approval of the Adjournment Proposal requires the affirmative vote of the majority of the votes by the holders of our Common Stock and Preferred Stock present in person or represented by proxy at the 2022 Annual Meeting of Stockholders and entitled to vote on the proposal, voting together as a single class. Since the Series D Convertible Preferred Stock has 20,000 votes per share on the Name Change Proposal,

Authorized Common Stock Increase Proposal or any Adjournment Proposal but such votes must be counted by the Company in the same proportion as the aggregate shares of Common Stock and Series C Convertible Preferred Stock voted on the Name Change Proposal, Authorized Common Stock Increase Proposal or any Adjournment Proposal at the 2022 Annual Meeting of Stockholders, the failure of a share of Common Stock to be voted will effectively have no impact on the outcome of the vote. However, shares of Common Stock voted against the proposal will have the effect of causing the proportion of Series D Convertible Preferred Stock voted against the proposal to increase accordingly.

Q: *What are Broker Non-Votes?*

A: Under the rules of the New York Stock Exchange, member brokers who hold shares in street name for their customers that are the beneficial owners of those shares have the authority to only vote on certain “routine” items in the event that they have not received instructions from beneficial owners. Under New York Stock Exchange rules, when a proposal is not a “routine” matter and a member broker, bank or nominee has not received voting instructions from the beneficial owner of the shares with respect to that proposal, the brokerage firm, bank or nominee may not vote the shares on that proposal since it does not have discretionary authority to vote those shares on that matter. A “broker non-vote” is submitted when a broker, bank or nominee returns a proxy card and indicates that, with respect to particular matters, it is not voting a specified number of shares on that matter, as it has not received voting instructions with respect to those shares from the beneficial owner and does not have discretionary authority to vote those shares on such matters. If you hold your shares in street name and you do not instruct your broker how to vote on these matters not considered routine, no votes will be cast on your behalf with respect to these non-routine matters. “Broker non-votes” are not entitled to vote at the 2022 Annual Meeting of Stockholders with respect to the matters to which they apply; however, “broker non-votes” will be included for purposes of determining whether a quorum is present at the 2022 Annual Meeting of Stockholders.

Proposals 1, 3 and 4 are considered “non-routine” matters. As a result, brokers, banks or nominees that do not receive instructions with respect to Proposals 1, 3 and 4 from their customers will not be entitled to vote on such proposal for which instructions were not received.

Proposals 2, 5, 6 and 7 are considered “routine” matters. As a result, brokers that do not receive instructions with respect to Proposals 2, 5, 6 and 7 from their customers should be entitled to vote on such proposal in their discretion.

Q: *What is the voting requirement to approve each of the proposals?*

A:

- For Proposal 1, which relates to the election of directors, the four (4) nominees receiving the highest number of “**FOR**” votes (from the holders of votes of shares of Common Stock present in person or represented by proxy at the 2022 Annual Meeting of Stockholders and entitled to vote on the election of directors) will be elected. Only votes **FOR** will affect the outcome. Abstentions, withheld votes and broker non-votes will have no effect on the outcome of the vote as long as each nominee receives at least one **FOR** vote. You do not have the right to cumulate your votes.
- To be approved, Proposal 2, which relates to the ratification of the appointment of BDO USA, LLP, as our independent registered public accounting firm for the year ending December 31, 2022, must receive **FOR** votes from the holders of a majority of the votes of shares of Common Stock present in person or represented by proxy and entitled to vote on this matter at the 2022 Annual Meeting of Stockholders. Abstentions will have the same effect as an **AGAINST** vote. Because this is a routine matter for which brokers have discretion, broker non-votes are not expected to exist for this matter. This vote is advisory, and therefore is not binding on us, the Audit Committee or our Board of Directors. If our stockholders fail to ratify the appointment, the Audit Committee will reconsider whether or not to retain that firm. Even if the appointment is ratified, the Audit Committee in its discretion may direct the appointment of different independent auditors at any time during the year if it determines that such a change would be in the best interests of our company and its stockholders.
- To be approved, Proposal 3, which relates to the Stock Incentive Plan Amendments, must receive **FOR** votes from the holders of a majority of the votes of shares of Common Stock present in person

or represented by proxy and entitled to vote on this matter at the 2022 Annual Meeting of Stockholders. Abstentions will have the same effect as an **AGAINST** vote. Broker non-votes will have no effect.

- To be approved, Proposal 4, which relates to the approval, on an advisory basis, of the compensation of our named executive officers, must receive **FOR** votes from the holders of a majority of the votes of shares of Common Stock present in person or represented by proxy and entitled to vote on this matter at the 2022 Annual Meeting of Stockholders. Abstentions will have the same effect as a vote **AGAINST** this proposal. Broker non-votes will have no effect. This vote is advisory, and therefore is not binding on us, the Compensation Committee or our Board of Directors. Our Board of Directors and Compensation Committee value the opinions of our stockholders and to the extent there is any significant vote against the named executive officers' compensation as disclosed in this Proxy Statement, we will consider our stockholders' concerns and the Compensation Committee will evaluate whether any actions are necessary to address those concerns.
- To be approved, Proposal 5, which relates to the amendment to the Company's Articles of Incorporation to change the name of the Company to "Theriva Biologics, Inc." requires the affirmative **FOR** vote of a majority of the voting power of the outstanding shares of Common Stock and Preferred Stock entitled to vote on the matter, voting together as a single class. Accordingly, abstentions on this proposal will have the same effect as a vote **AGAINST** the proposal. Because this is a routine matter for which brokers have discretion, broker non-votes will not exist for this matter. However, as further discussed under "*Will choosing not to vote my shares have the same effect as casting a vote against the Name Change Proposal, Authorized Common Stock Increase Proposal or any Adjournment Proposal,*" because the Series D Convertible Preferred Stock has 20,000 votes per share on the Name Change Proposal but such votes must be counted by the Company in the same proportion as the aggregate shares of Common Stock and Series C Convertible Preferred Stock voted on the Name Change Proposal at the 2022 Annual Meeting of Stockholders, the failure of a share of Common Stock to be voted on Proposal 5 will effectively have no impact on the outcome of the vote.
- To be approved, Proposal 6, which relates to the amendment to the Company's Articles of Incorporation to increase the authorized shares to 350,000,000, must receive **FOR** votes from the holders of a majority of the voting power of the outstanding shares of Common Stock and Preferred Stock entitled to vote on the matter, voting together as a single class on the Record Date. Because this is a routine matter for which brokers have discretion, broker non-votes will not exist for this matter. Abstentions will have the same effect as an **AGAINST** vote. However, as further discussed under "*Will choosing not to vote my shares have the same effect as casting a vote against the Name Change Proposal, Authorized Common Stock Increase Proposal or any Adjournment Proposal,*" because the Series D Convertible Preferred Stock has 20,000 votes per share on the Authorized Common Stock Increase Proposal but such votes must be counted by the Company in the same proportion as the aggregate shares of Common Stock and Series C Convertible Preferred Stock voted on the Authorized Common Stock Increase Proposal at the 2022 Annual Meeting of Stockholders, the failure of a share of Common Stock to be voted on Proposal 6 will effectively have no impact on the outcome of the vote.
- To be approved, Proposal 7, which relates to the approval of an adjournment of the 2022 Annual Meeting of Stockholders if the Board of Directors determined it is necessary or appropriate, to solicit additional proxies if there are insufficient votes in favor of the Authorized Common Stock Increase Proposal must receive **FOR** votes from the holders of a majority of the Common Stock and Preferred Stock present in person or represented by proxy at the 2022 Annual Meeting of Stockholders, voting together as a single class. Accordingly, abstentions with respect to this proposal will have the same effect as voting **AGAINST**. Because this is a routine matter for which brokers have discretion, broker non-votes will not exist for this matter. However, as further discussed under "*Will choosing not to vote my shares have the same effect as casting a vote against the Name Change Proposal, Authorized Common Stock Increase Proposal or any Adjournment Proposal,*" because the Series D Convertible Preferred Stock has 20,000 votes per share on the Adjournment Proposal but such votes must be counted by the Company in the same proportion as the aggregate shares of Common Stock and Series C Convertible Preferred Stock voted on the Adjournment Proposal at the 2022 Annual

Meeting of Stockholders, the failure of a share of Common Stock to be voted on Proposal 7 will effectively have no impact on the outcome of the vote.

We recommend that you vote **FOR** each of the nominees for director and **FOR** proposals 2, 3, 4, 5, 6 and 7.

If your shares are held in “street name” and you do not indicate how you wish to vote, your broker is permitted to exercise its discretion to vote your shares on certain “routine” matters. The matters expected to be a routine matter to be submitted to our stockholders at the 2022 Annual Meeting of Stockholders are Proposals 2, 5, 6 and 7. Proposal 1, 3 and 4 are not a routine matter. Accordingly, if you do not direct your broker how to vote for a director in Proposals 1, 3 and 4 your broker may not exercise discretion and may not vote your shares on that proposal.

For purposes of Proposals 1, 3 and 4, broker non-votes will be counted toward a quorum but are not “entitled to vote” at the meeting. As such, a broker non-vote will not be counted as a vote **FOR** or **WITHHELD** with respect to a director in Proposal 1 and, therefore, will have no effect on the outcome of the vote on such proposal as long as each nominee receives at least one **FOR** vote and will not be counted as a vote **FOR** or **AGAINST** Proposals 3 or 4 and therefore will have no effect on the outcome of the vote on those proposals. Abstentions will be counted in determining the total number of shares present in person or represented by proxy and entitled to vote on each of the proposals and will therefore have the effect of a vote **AGAINST** on each proposal, except for Proposal 1, where the abstention will have no effect on the outcome of the vote as long as each nominee receives at least one **FOR** vote.

Q: *What should I do if I receive more than one set of voting materials?*

- A: You may receive more than one set of voting materials, including multiple copies of this Proxy Statement and multiple proxy cards or voting instruction cards. For example, if you hold your shares in more than one brokerage account, you will receive a separate voting instruction card for each brokerage account in which you hold shares. If you are a stockholder of record and your shares are registered in more than one name, you will receive more than one proxy card. Please complete, sign, date, and return each proxy card and voting instruction card that you receive.

Q: *Where can I find the voting results of the 2022 Annual Meeting of Stockholders?*

- A: We intend to announce preliminary voting results at the 2022 Annual Meeting of Stockholders and publish final results in a Current Report on Form 8-K that will be filed with the U.S. Securities and Exchange Commission (the “SEC”) within four (4) business days after the meeting. If final voting results are not available to us in time to file a Current Report on Form 8-K within four (4) business days after the meeting, we intend to file a Current Report on Form 8-K to publish preliminary results and, within four (4) business days after the final results are known to us, file an additional Current Report on Form 8-K to publish the final results.

Q: *What happens if additional matters are presented at the 2022 Annual Meeting of Stockholders?*

- A: Other than the seven (7) items of business described in this Proxy Statement, we are not aware of any other business to be acted upon at the 2022 Annual Meeting of Stockholders. If you grant a proxy, the person named as proxy holder, Mr. Steven Shallcross, our Chief Executive Officer, Chief Financial Officer and Director, will have the discretion to vote your shares on any additional matters properly presented for a vote at the meeting. If for any unforeseen reason any of our nominees are not available as a candidate for director, the persons named as proxy holders will vote your proxy for any one or more other candidates nominated by the Board of Directors.

Q: *Who will count the votes?*

- A: One or more inspectors of election will tabulate the votes.

Q: *Is my vote confidential?*

- A: Proxy instructions, ballots, and voting tabulations that identify individual stockholders are handled in a manner that protects your voting privacy. Your vote will not be disclosed, either within our business or

to anyone else, except: (1) as necessary to meet applicable legal requirements; (2) to allow for the tabulation of votes and certification of the vote; or (3) to facilitate a successful proxy solicitation.

Q: *Who will bear the cost of soliciting votes for the 2022 Annual Meeting of Stockholders?*

A: The Board of Directors is making this solicitation on our behalf, and we will pay the entire cost of preparing, assembling, printing, mailing, and distributing these proxy materials. Certain of our directors, officers, and employees, without any additional compensation, may also solicit your vote in person, by telephone, or by electronic communication. On request, we will reimburse brokerage houses and other custodians, nominees, and fiduciaries for their reasonable out-of-pocket expenses for forwarding proxy and solicitation materials to stockholders. In addition to the use of the mail, proxies may be solicited by personal interview, telephone, telegram, facsimile and advertisement in periodicals and postings, in each case by our directors, officers and employees without additional compensation. In addition, we have retained D.F. King & Co., Inc. to aid in the solicitation of proxies for this year. We will pay D.F. King & Co., Inc. fees of not more than \$7,500 plus expense reimbursement for its services. We may request by telephone, facsimile, mail, electronic mail or other means of communication the return of the proxy cards. Please contact D.F. King & Co., Inc. at (800) 859-8509 with any questions you may have regarding our proposals.

Q: *When are stockholder proposals and director nominations due for next year's (2023) Annual Meeting of Stockholders?*

A: To be considered for inclusion in next year's proxy materials (the 2023 Annual Meeting of Stockholders), your proposal must be submitted in writing by April 18, 2023, to the attention of our Corporate Secretary at Synthetic Biologics, Inc., 9605 Medical Center Drive, Suite 270, Rockville, Maryland 20850, and you must comply with all applicable requirements of Rule 14a-8 promulgated under the Securities Exchange Act of 1934, as amended (the "Exchange Act").

If you wish to nominate a director at the 2023 Annual Meeting of Stockholders that is not to be included in next year's proxy materials, you must currently do so in accordance with the charter of the Nominations Committee, which is available on our website at www.syntheticbiologics.com in the Investors section and which requires notice of not less than 120 days prior to the anniversary of the preceding year's annual meeting, which in this case means June 2, 2023, and contains additional requirements about advance notice required of stockholder proposals and director nominations. In addition, you must comply with all applicable requirements of our Amended and Restated Bylaws and Rule 14a-8 promulgated under the Exchange Act.

PROPOSAL 1**ELECTION OF DIRECTORS**

Our Board of Directors, based on the recommendation of the Nominations Committee of the Board of Directors, has nominated for annual election as director each of the individuals identified below, all of whom are incumbent directors.

THE NOMINEES

Name	Age	Position	Director Since
Jeffrey J. Kraws ⁽¹⁾⁽²⁾⁽³⁾	58	Chairman	2006
John Monahan ⁽¹⁾⁽²⁾⁽³⁾	75	Director	2020
Steven A. Shallcross	61	Chief Executive Officer, Chief Financial Officer and Director	2018
Jeffrey Wolf, J.D. ⁽¹⁾⁽²⁾⁽³⁾	59	Director	2006

-
- (1) Member of the Audit Committee
 (2) Member of the Compensation Committee
 (3) Member of the Nominations Committee

**OUR BOARD OF DIRECTORS RECOMMENDS THAT YOU VOTE YOUR
 SHARES FOR THE ELECTION OF EACH OF THESE NOMINEES.**

It is the intention of the persons named in the accompanying proxy card to vote all shares of Common Stock for which he has been granted a proxy for the election of each of the nominees, each to serve as a director until the next annual meeting of stockholders and until his successor shall have been duly elected and qualified. All of the nominees have consented to being named in this Proxy Statement and to serve as a director if elected. At the time of the 2022 Annual Meeting of Stockholders, if any of the nominees named above is not available to serve as director (an event that the Board of Directors does not currently have any reason to anticipate), all proxies will be voted for any one or more other persons that the Board of Directors designates. The Board of Directors believes that it is in the best interests of the Company to elect the above-described nominees.

DIRECTOR INDEPENDENCE

No director or executive officer of the Company is related by blood, marriage or adoption to any other director or executive officer. A majority of the members of our Board of Directors are independent in compliance with the applicable listing standards of the NYSE American, LLC ("NYSE American"). The Board of Directors has affirmatively determined that the independent directors and nominees are Jeffrey J. Kraws, John Monahan and Jeffrey Wolf.

INFORMATION ABOUT THE NOMINEES

Below is certain information regarding our directors and executive officers.

Jeffrey J. Kraws. Mr. Kraws has been a member of the Company's Board of Directors since January of 2006, and was appointed independent, non-executive Chairman of the Board in May 2012. Since 2003, Mr. Kraws has served as Chief Executive Officer and co-founder of Crystal Research Associates and CRA Advisors, and since February 2012, he has served as partner and co-founder of TopHat Capital, LLC. Since November 9, 2021, Mr. Kraws has served as the Chief Executive Officer of GridIron Bionutrients, Inc. From August 2016 through January 2021, Mr. Kraws served as the Co-President of Ra Medical Systems Inc. (NYSE: RMED), a medical device company. Mr. Kraws is a partner at Grannus Securities Pty Ltd. (an Australian based private equity fund) since November 2015. Mr. Kraws is a partner of PDK Healthcare Innovations LLC. He also consults and assists in management of private companies through his private practice. Mr. Kraws has received some of the most prestigious awards in the industry. Among other awards,

he was given a “5-Star Rating” in 2001 by Zacks and was ranked the number one analyst among all pharmaceutical analysts for stock performance in 2001 by Starmine.com. Prior to founding Crystal Research Associates, Mr. Kraws served as co-president of The Investor Relations Group (IRG), a firm representing primarily under-followed, small-capitalization companies. Previously, Mr. Kraws served as a managing director of healthcare research for Ryan Beck & Co. and as director of research/senior pharmaceutical analyst and managing director at Gruntal & Co., LLC (prior to its merger with Ryan Beck & Company). Mr. Kraws served as managing director of the healthcare research group and senior pharmaceutical analyst at First Union Securities (formerly EVEREN Securities); as senior U.S. pharmaceutical analyst for the Swedish-Swiss conglomerate Asea Brown Boveri; and as managing director and president of the Brokerage/Investment Banking operation of ABB Aros Securities, Inc. He also served as senior pharmaceutical analyst at Nationsbank Montgomery Securities, BT Alex Brown & Sons, and Buckingham Research. Mr. Kraws also has industry experience, having been responsible for competitive analysis within the treasury group at Bristol-Myers-Squibb Company. During 2006 through February of 2007, Mr. Kraws served as our Vice President of Business Development, on a part-time basis. Since December 2013, Mr. Kraws serves on the board of directors of Avivagen Inc. (TSX:VIV) and from 2013 until 2020 served on the board of directors of Saleen Automotive, Inc. (OTC Pink: SLNN). He holds an M.B.A. from Cornell University and a B.S. degree from State University of New York — Buffalo. Mr. Kraws brings a strong business background to us, having worked as a pharmaceutical analyst for over 22 years.

Mr. Kraws brings to the Board of Directors significant strategic, business and financial experience related to the business and financial issues facing pharmaceutical companies. Mr. Kraws has a broad understanding of the operational, financial and strategic issues facing pharmaceutical companies. His healthcare experience, executive and leadership experience further qualify him as a member of the Board.

Steven A. Shallcross. Mr. Shallcross has been a member of our Board of Directors since December 6, 2018 and currently serves as our Chief Executive Officer, a position he was appointed to on December 6, 2018, and our Chief Financial Officer. Mr. Shallcross was appointed as our Interim Chief Executive Officer on December 5, 2017 and has served as our Chief Financial Officer since joining us in June 2015. Mr. Shallcross brings to our company operational, financial and international biotech industry experience, as well as an established track record at leading the financial development and strategy for several publicly traded biotech companies. From May 2013 through May 2015, Mr. Shallcross served as Executive Vice President and Chief Financial Officer of Nuo Therapeutics, Inc. (formerly Cytomedix, Inc.). In January 2016, Nuo Therapeutics, Inc. filed a voluntary petition for relief under Chapter 11 of the U.S. Bankruptcy Code in the United States Bankruptcy Court for the District of Delaware and on April 25, 2016, the Bankruptcy Court entered an order granting approval of Nuo’s plan of reorganization. From July 2012 to May 2013, Mr. Shallcross held the offices of Executive Vice President, Chief Financial Officer and Treasurer of Empire Petroleum Partners, LLC, a motor fuel distribution company. From July 2011 to March 2012, Mr. Shallcross was Acting Chief Financial Officer of Senseonics, a privately-held medical device company located in Germantown, MD. From January 2009 to March 2011, he served as Executive Vice President and Chief Financial Officer of Innocoll AG (formerly privately held Innocoll Holdings, Inc.), a global, commercial-stage biopharmaceutical company specializing in the development and commercialization of collagen-based products. He also served for four years as the Chief Financial Officer and Treasurer of Vanda Pharmaceuticals, Inc., leading the company through its successful IPO and follow-on offering and previously served as the Senior Vice President and Chief Financial Officer of Middlebrook Pharmaceuticals, Inc. (formerly Advancis Pharmaceutical Corporation). In addition, Mr. Shallcross also served as the Chief Financial Officer of Bering Truck Corporation. Since June 2019, Mr. Shallcross has served on the board of directors of Elys Game Technology, Corp. (Nasdaq: ELYS), an international, vertically integrated commercial-stage company engaged in various aspects of the leisure gaming industry and from April 2021 until June 2022, he served on the board of directors of TwinVee Powercats, Co. (Nasdaq: VEEE), a designer, manufacturer and marketer of recreational and commercial power catamaran boats. He holds an MBA from the University of Chicago’s Booth School of Business, a Bachelor of Science degree in Accounting from the University of Illinois, Chicago, and is a Certified Public Accountant in the State of Illinois.

Mr. Shallcross brings to the Board of Directors significant strategic, business and financial experience related to the business and financial issues facing biotechnology companies. Mr. Shallcross has a broad understanding of the financial markets, financial statements as well as generally accepted accounting

principles. Through his services as our Chief Executive Officer and Chief Financial Officer, he has developed extensive knowledge of our business.

John Monahan. Dr. Monahan has been a member of the Company's Board of Directors since November 11, 2020. Dr. Monahan has served on the board of directors of Heat Biologics, Inc. (Nasdaq: HTBX), a biopharmaceutical company primarily engaged in the development of immune therapies and vaccines, since November 2009, and from August 2016 until May 2021 also served on the board of directors of the biotech company Anixa Biosciences, Inc. (formerly known as ITUS Corporation) (Nasdaq: ANIX), a biotechnology company focused on using the body's immune system to diagnose, treat and prevent cancer. He is also a board member of Cellix Ltd. (Ireland) and has served on a number of other public and private boards over the years. Dr. Monahan co-founded Avigen Inc. (Nasdaq: AVGN) in 1992, a company which has become a leader in its sector for the development of novel pharmaceutical products for the treatment of serious human diseases. Over a 12-year period as Chief Executive Officer of Avigen he raised over \$235 million in several private and public financings including its initial public offering. From 1989-1992, he was Vice President of Research & Development at Somatix Therapy Corp., Alameda, CA and from 1985-1989 he was Director of Molecular & Cell Biology at Triton Biosciences Inc., Alameda, CA. Prior to that from 1982-1985, he was Research Group Chief, Department of Molecular Genetics, Hoffmann-LaRoche, Inc. Nutley, NJ, and from 1975 to 1977 he was an Instructor at Baylor College of Medicine, Houston TX. Dr. Monahan served as a scientific advisory consultant to the Company from 2015 to November 10, 2020 and from 2010 through 2015 he was the Company's Senior Executive Vice President of Research & Development. Dr. Monahan was also a Scientific Advisory board member of Agilis Biotherapeutics (recently merged into PTC Therapeutics), from 2014 to 2019. Dr. Monahan received his Ph.D. in Biochemistry from McMaster University, Canada and his B.Sc. from University College Dublin, Ireland.

Dr. Monahan brings to our Board of Directors significant knowledge of and experience in the pharmaceutical and medical industries. He has extensive business, managerial, executive and leadership experience that further qualify him to serve as a member of the Board and a valuable understanding of biochemistry and our product candidates.

Jeffrey Wolf, J.D. Mr. Wolf, who has been a member of the Company's Board of Directors since 2006, has substantial experience in creating, financing, nurturing and biomedical ventures based upon breakthrough research and technology. In August 2008, Mr. Wolf founded NightHawk Biosciences, Inc. (NASDAQ: NHWK), a publicly traded company engaged in research and development of drugs focused on modulating the immune system. Since April 2010, Mr. Wolf has served as the Chief Executive Officer and Chairman of the Board of NightHawk Biosciences, Inc. Prior to founding NightHawk, from June 1997 to March 2011, Mr. Wolf has served as managing director at Seed-One Ventures, LLC a venture firm focused on launching and growing exceptional healthcare companies from the ground up. Mr. Wolf has also founded and run several biomedical companies. Mr. Wolf's start-ups include Avigen, a San Francisco-based gene therapy company where he was a co-founder and director; TyRx Pharma, a company focused on the development of bio-compatible polymers where he was a co-founder and Chairman; and Elusys Therapeutics, a company focused on the development of ANTHIM, an FDA approved antitoxin against anthrax, which is currently a subsidiary of NightHawk. Mr. Wolf received his MBA. from Stanford Business School, his J.D. from New York University School of Law and his B.A. from the University of Chicago, where he graduated with honors in Economics.

Mr. Wolf has extensive knowledge of the industry and in particular research and development. His legal and business background provide him with a broad understanding of the legal, operational, financial and strategic issues facing our company. Having served as a board member on other public company boards, Mr. Wolf has an extensive understanding of the operational, financial and strategic issues facing public companies.

INFORMATION REGARDING THE BOARD OF DIRECTORS AND CORPORATE GOVERNANCE

Independence of the Board of Directors

Our Common Stock is listed on the NYSE American. Under the NYSE American listing standards, independent directors must comprise a majority of a listed company's Board of Directors and all members of the Audit Committee, Compensation Committee and Nominations Committee must be independent. Audit Committee members must also satisfy the independence criteria set forth in Rule 10A-3 under the Exchange Act and Compensation Committee members must also satisfy the independence criteria set forth in Rule 10C-1 under the Exchange Act. Under the NYSE American listing standards, a director will only qualify as an "independent director" if, in the opinion of that company's Board of Directors, that person does not have a relationship that would interfere with the exercise of independent judgment in carrying out the responsibilities of a director.

In order to be considered to be independent for purposes of Rule 10A-3, a member of an Audit Committee of a listed company may not, other than in his or her capacity as a member of the Audit Committee, the Board of Directors, or any other board committee: (i) accept, directly or indirectly, any consulting, advisory or other compensatory fee from the listed company or any of its subsidiaries, or (ii) be an affiliated person of the listed company or any of its subsidiaries.

The Board of Directors undertook a review of the independence of the members of the Board of Directors and considered whether any director has a material relationship with our company that could compromise his or her ability to exercise independent judgment in carrying out his or her responsibilities. Based upon information requested from and provided by each director concerning their background, employment and affiliations, including family relationships, the Board of Directors has determined that all of our current directors, except Mr. Shallcross, due to his current position as Chief Executive Officer and Chief Financial Officer of our company, is "independent" as that term is defined under the rules of the NYSE American. As a result, Mr. Kraws, Dr. Monahan and Mr. Wolf are deemed to be "independent" as that term is defined under the rules of the NYSE American.

In making these determinations, the Board of Directors considered the current and prior relationships that each non-employee director has with our company and all other facts and circumstances the Board of Directors deemed relevant in determining their independence, including the beneficial ownership of capital stock by each non-employee director, and the transactions involving them described in the section of this proxy statement entitled "Certain Relationships and Related Party Transactions."

Board Leadership Structure

The Board of Directors has an independent Chairman, Mr. Kraws, who has authority, among other things, to call and preside over meetings of the Board of Directors, including meetings of the independent directors, to set meeting agendas and to determine materials to be distributed to the Board of Directors. Accordingly, the Chairman of the Board has substantial ability to shape the work of the Board of Directors. We believe that separation of the positions of Chairman of the Board and Chief Executive Officer reinforces the independence of the Board of Directors in its oversight of our business and affairs. In addition, we believe that having an independent Chairman of the Board creates an environment that is more conducive to objective evaluation and oversight of management's performance, increasing management accountability and improving the ability of the Board of Directors to monitor whether management's actions are in our best interests and the best interests of our stockholders. As a result, we believe that having an independent Chairman of the Board can enhance the effectiveness of the Board of Directors as a whole.

Risk Oversight

One of the Board of Directors' key functions is informed oversight of our risk management process. The Board of Directors does not have a standing risk management committee, but rather administers this oversight function directly through the Board of Directors as a whole, as well as through various standing committees of the Board of Directors that address risks inherent in their respective areas of oversight. In particular, the Board of Directors is responsible for monitoring and assessing strategic risk exposure,

including a determination of the nature and level of risk appropriate for us. Our Audit Committee has the responsibility to consider and discuss our major financial risk exposures and the steps our management has taken to monitor and control these exposures, including guidelines and policies to govern the process by which risk assessment and management is undertaken. The Audit Committee also monitors compliance with legal and regulatory requirements, in addition to oversight of the performance of our internal audit function at the time of its establishment. Our Nominations Committee monitors the effectiveness of our corporate governance guidelines, including whether they are successful in preventing illegal or improper liability-creating conduct. Our Compensation Committee assesses and monitors whether any of our compensation policies and programs has the potential to encourage excessive risk-taking.

Board and Committee Meetings and Attendance

During the year ended December 31, 2021, the Board of Directors held thirteen (13) meetings. During the year ended December 31, 2021, our Audit, Compensation and Nominations Committees met four (4) times, two (2) times, and one (1) time, respectively. Each director attended at least seventy five percent (75%) of the aggregate of all meetings of the Board of Directors and all of the Committee meetings, for the Committees on which he serves.

Board Attendance at Annual Stockholders' Meeting

Our policy is to invite and encourage each member of the Board of Directors to be present at our annual meetings of stockholders (assuming that we hold in-person annual meetings). Due to the COVID-19 pandemic only one director, Steven Shallcross, attended our 2021 Annual Meeting in person and our other three directors attended our 2021 Annual Meeting of Stockholders via telephone.

Review of Transactions with Related Persons

Pursuant to our charter, our Audit Committee reviews on an on-going basis for potential conflicts of interest, and approve if appropriate, all our "Related Party Transactions." For purposes of the Audit Committee Charter, "Related Party Transactions" means those transactions required to be disclosed pursuant to Item 404 of SEC Regulation S-K.

A discussion of our current related person transactions appears in this Proxy Statement under "Certain Relationships and Related Transactions."

Communication with Directors

Stockholders may direct any communications intended for the Board of Directors to our Corporate Secretary by telephone at (301) 417-4364, by facsimile at (301) 417-4367, or by mail to Synthetic Biologics, Inc., 9605 Medical Center Drive, Suite 270, Rockville, Maryland 20850.

This centralized process assists the Board of Directors in reviewing and responding to stockholder communications in an appropriate manner. If a stockholder wishes to direct any communication to a specific member of the Board of Directors, the name of that member of the Board of Directors should be noted in the communication. The Board of Directors has instructed the Corporate Secretary to forward stockholder correspondence only to the intended recipients, and has also instructed the Corporate Secretary to review all stockholder correspondence and, in the Corporate Secretary's discretion, refrain from forwarding any items deemed to be of a commercial or frivolous nature or otherwise inappropriate for the Board of Directors' consideration. Any such items may be forwarded elsewhere in the Company for review and possible response.

Delinquent Section 16(a) Reports

Section 16(a) of the Exchange Act requires our directors and executive officers, and persons who own more than ten percent of a registered class of our equity securities, to file with the SEC initial reports of ownership and reports of changes in ownership of our Common Stock and our other equity securities. Officers, directors and greater than ten percent stockholders are required by SEC regulation to furnish us with copies of all Section 16(a) forms they file.

To our knowledge, based solely on a review of the copies of such reports furnished to us and written representations that no other reports were required, during the fiscal year ended December 31, 2021, all Section 16(a) filing requirements applicable to our officers, directors and greater than ten percent beneficial owners were complied with.

Code of Conduct

We have adopted a code of conduct that applies to all officers, directors and employees. The Code of Conduct is intended to promote honest and ethical conduct, full, accurate and timely disclosure, and compliance with all applicable laws and government regulations. The full text of the code of conduct is posted on our website at www.syntheticbiologics.com and a copy will be made available to stockholders without charge, upon request, in writing to the Corporate Secretary at 9605 Medical Center, Suite 270, Rockville, Maryland 20850. If we make any substantive amendments to the code of conduct or grant any waiver from a provision of the code of conduct to any executive officer or director, we will promptly disclose the nature of the amendment or waiver on our website or by filing with the SEC a Current Report on Form 8-K, in each case if such disclosure is required by SEC or the NYSE American rules.

Code of Ethics for Financial Management

We adopted a Code of Ethics for Financial Management that applies to all persons responsible for our financial management. The Code of Ethics for Financial Management is intended to promote professional conduct in our financial management. A copy of our Code of Ethics for Financial Management is available on our website at www.syntheticbiologics.com and a copy will be made available to stockholders without charge, upon request, in writing to the Corporate Secretary at 9605 Medical Center, Suite 270, Rockville, Maryland 20850. Violations of the Code of Ethics for Financial Management may result in disciplinary action. If we make any substantive amendments to the Code of Ethics for Financial Management or grant any waiver from a provision of the Code of Ethics for Financial Management to any director or officer, we will promptly disclose the nature of the amendment or waiver on our website.

Anti-Hedging/Anti-Pledging Policy

The Company has adopted an insider trading policy which incorporates anti-hedging and anti-pledging provisions. Consequently, no employee, executive officer or director may enter into a hedge or pledge of the Company's Common Stock, including short sales, derivatives, put options, swaps and collars.

INFORMATION REGARDING COMMITTEES OF THE BOARD OF DIRECTORS

The Board of Directors has the authority to appoint committees to perform certain management and administration functions. As disclosed above, the Board of Directors has established an Audit Committee, a Compensation Committee and Nominations Committee. The Board of Directors may establish other committees to facilitate the management of our company's business. The composition and functions of each committee are described below. Members serve on these committees until their resignation or until otherwise determined by the Board of Directors.

All of the committees comply with all applicable requirements of the Sarbanes-Oxley Act of 2002, NYSE American, and SEC, rules and regulations as further described below. The charters for each of these committees are available on our website at www.syntheticbiologics.com. Information contained on or accessible through our website is not a part of this Proxy Statement and the inclusion of such website address in this proxy statement is an inactive textual reference only.

Committees of the Board of Directors

The table set forth below shows the directors who are currently members or Chairman of each of the Audit Committee, Compensation Committee and Nominations Committee. From time to time, the Board of Directors may also establish *ad hoc* committees to address particular matters.

Name	Audit	Compensation	Nominations
Steven Shallcross*	—	—	—
Jeffrey Kraws**	Member	Chairman	Member
John Monahan	Member	Member	Chairman
Jeffrey Wolf	Chairman	Member	Member

* Mr. Shallcross is not a member of any of the committees of the Board of Directors.

** Mr. Kraws serves as the Chairman of the Board of Directors.

Below is a description of each committee of the Board of Directors.

Audit Committee

Mr. Wolf (Chairman), Mr. Kraws and Dr. Monahan currently serve as members of the Audit Committee. The Board of Directors has determined that Mr. Kraws, Dr. Monahan and Mr. Wolf are each “independent” in accordance with the NYSE American definition of independence. The Board of Directors has determined that each of Messrs. Kraws, Monahan and Wolf has the related financial management expertise within the meaning of the NYSE American rules, that Messrs. Kraws and Wolf is each an “audit committee financial expert” as defined by SEC regulations and that each member of the Audit Committee is “financially literate” under the applicable rules and regulations of the SEC and NYSE.

The primary purpose of the Audit Committee is to assist the Board of Directors in its oversight of the integrity of our financial statements, of our compliance with legal and regulatory requirements, of the independence and qualifications of the registered public accounting firm or firms engaged as our independent outside auditors and the performance of our internal audit function and independent auditors. Specific responsibilities of the Audit Committee include:

- overseeing the work and compensation of the independent auditor in connection with the preparation by the independent auditor of the audit report;
- reviewing and approving the internal corporate audit staff functions;
- approving the retention or replacement of the independent auditors;
- reviewing the scope of the independent auditor’s audit examination and approving the retention of the independent auditors to perform any proposed permissible non-audit services;
- overseeing the rotation of partners of the independent auditors on our audit engagement team as required by law;
- reviewing and approving transactions between us and any related persons;
- conferring with management and the independent auditors regarding the adequacy of internal controls over financial reporting;
- establishing procedures, as required under applicable law, for the receipt, retention and treatment of complaints received by us regarding accounting, internal accounting controls or auditing matters and the confidential and anonymous submission by employees of concerns regarding questionable accounting or auditing matters; and
- reviewing and discussing our annual audited financial statements and quarterly financial statements with management and the independent auditor.

The Audit Committee operates pursuant to a written charter adopted by the Board of Directors, which is available on our website at www.syntheticbiologics.com. The charter describes in more detail the nature and scope of responsibilities of the Audit Committee.

Compensation Committee

Mr. Kraws (Chairman), Dr. Monahan and Mr. Wolf currently serve as members of the Compensation Committee, each of whom the Board of Directors has determined is independent in accordance Rule 10C-1

under the Exchange Act and the NYSE American definition of independence and that each is a “non-employee director” as defined in Rule 16b-3 promulgated under the Exchange Act.

The primary purpose of the Compensation Committee is to assist the Board of Directors in fulfilling its oversight responsibilities relating to compensation of our Chief Executive Officer and other senior executive officers, including evaluating and approving officer’s benefits, bonus, incentive compensation, severance, equity base-compensation and other compensation. Specific responsibilities of the Compensation Committee include:

- establishing on an annual basis the performance goals and objectives for purposes of determining the compensation of our Chief Executive Officer and other senior executive officers, and evaluating performance in light of such goals and objectives and based upon these evaluations setting the compensation level for those officers;
- recommending to the Board of Directors the compensation of the directors;
- overseeing the administration of equity incentive plans, including making recommendations to the Board of Directors regarding granting of options and other awards;
- overseeing the administration of other equity incentive plans and making recommendations to the Board of Directors regarding participation in those plans;
- reviewing and making recommendations to the Board of Directors Chief Executive Officer and other senior executive officers regarding employment agreement, severance agreements and, change in control agreements.

The Compensation Committee operates pursuant to a written charter adopted by the board of directors, which is available on our website at www.syntheticbiologics.com. The charter describes in more detail the nature and scope of responsibilities of the Compensation Committee.

Nominations Committee

Dr. Monahan (Chairman), Mr. Kraws, and Mr. Wolf currently serve as members of the Nominations Committee, each of whom the Board of Directors has determined is independent in accordance with the NYSE American definition of independence. Specific responsibilities of the Nominations Committee include:

- considering and recommending to the Board of Directors, candidates for appointment or election as directors, and making recommendations regarding re-election of incumbent directors;
- considering and recommending to the Board of Directors changes to the size of the Board of Directors or any Committee; and
- recommending to the Board of Directors, candidates to vacancies on any committees of the Board of Directors.

The Nominations Committee believes that candidates for director should have certain minimum qualifications, including the ability to read and understand basic financial statements, being over 21 years of age and having the highest personal integrity and ethics. The Nominations Committee also intends to consider such factors as possessing relevant expertise upon which to be able to offer advice and guidance to management, having sufficient time to devote to our affairs, demonstrated excellence in his or her field, having the ability to exercise sound business judgment and having the commitment to rigorously represent the long-term interests of our stockholders. However, the Nominations Committee retains the right to modify these qualifications from time to time. The Nominations Committee does not have a set policy or process for considering diversity in identifying nominees, but endeavors to establish a diversity of background and experience in a number of areas of core competency, including business judgment, management, accounting, finance, knowledge of our industry, strategic vision, research and development and other areas relevant to our business. Candidates for director nominees are reviewed in the context of the current composition of the Board of Directors, our operating requirements and the long-term interests of its stockholders. In conducting this assessment, the Nominations Committee typically considers diversity, age, skills and such other factors as it deems appropriate, given the current needs of the Company and the Board of Directors, to maintain a balance of knowledge, experience and capability.

In the case of incumbent directors whose terms of office are set to expire, the Nominations Committee reviews these directors' overall service to us during their terms, including the number of meetings attended, level of participation, quality of performance and any other relationships and transactions that might impair the directors' independence. The Nominations Committee also takes into account the results of the Board of Directors' self-evaluation, conducted annually on a group and individual basis. In the case of new director candidates, the Nominations Committee also determines whether the nominee is independent for NYSE American purposes, which determination is based upon applicable NYSE American listing standards, applicable SEC rules and regulations and the advice of counsel, if necessary. The Nominations Committee then uses its network of contacts to compile a list of potential candidates, but may also engage, if it deems appropriate, a professional search firm. The Nominations Committee conducts any appropriate and necessary inquiries into the backgrounds and qualifications of possible candidates after considering the function and needs of the Board of Directors. The Nominations Committee meets to discuss and consider the candidates' qualifications and then selects a nominee for recommendation to the Board of Directors by majority vote.

The Nominations Committee operates pursuant to a written charter adopted by the board of directors, which is available on our website at www.syntheticbiologics.com. The charter describes in more detail the nature and scope of responsibilities of the Nominations Committee.

The Nominations Committee will consider director candidates recommended by stockholders. The Nominations Committee does not intend to alter the manner in which it evaluates candidates, including the minimum criteria set forth above, based on whether or not the candidate was recommended by a stockholder. Under our current governing documents, stockholders wishing to directly recommend candidates for election to the Board of Directors at our next annual meeting to be included in our Proxy Statement must do so by giving written notice to: Chairman of the Nominations Committee, Synthetic Biologics, Inc., 9605 Medical Center Drive, Suite 270, Rockville, Maryland 20850. Any such notice must be delivered to the Chairman not less than 120 days prior to the anniversary of the preceding year's annual meeting. The notice must state: (1) the name and address of the stockholder making the recommendations; (2) the name, age, business address, and residential address of each person recommended; (3) the principal occupation or employment of each person recommended; (4) the class and number of shares of the Company's stock that are beneficially owned by each person recommended and by the recommending stockholder; (5) any other information concerning the persons recommended that must be disclosed in nominee and proxy solicitations in accordance with Regulation 14A of the Exchange Act; and (6) a signed consent of each person recommended stating that he or she consents to serve as a director of the Company if elected.

Changes to Procedures for Recommending Nominees to the Board of Directors.

None.

DIRECTOR COMPENSATION

Compensation of Directors

The following table sets forth information for the fiscal year ended December 31, 2021 regarding the compensation of our directors who at December 31, 2021 were not also our Named Executive Officers.

Name	Fees Earned or Paid in Cash	Option Awards⁽¹⁾⁽²⁾	Other Compensation	Total
Jeffrey J. Kraws ⁽³⁾	\$ 176,250	\$ 44,374	\$ —	\$220,624
John Monahan ⁽⁵⁾	\$ 66,250	\$ 44,374	\$ —	\$110,624
Jeffrey Wolf	\$ 73,750	\$ 44,374	\$ —	\$118,124

(1) The amounts in the "Option Awards" column reflect the dollar amounts of the grant date fair value for the financial statement reporting purposes for stock options for the fiscal year ended December 31, 2021 in accordance with ASC 718. The fair value of the options was determined using the Black-Scholes model. For a discussion of the assumptions used in computing this valuation, see

“Management’s Discussion and Analysis of Financial Conditions and Results of Operations” and Note 5 of the Notes to Consolidated Financial Statements in our Annual Report on Form 10-K for the fiscal year ended December 31, 2021.

- (2) As of December 31, 2021, the following are the outstanding aggregate number of option awards held by each of our directors who were not also Named Executive Officers:

Name	Option Awards (#)
Jeffrey J. Kraws	69,732
John Monahan	37,552
Jeffrey Wolf	69,732

During 2021, each non-employee member of the Board of Directors received an annual cash retainer of \$43,000, our independent, non-executive Chairman of the Board of Directors receives an annual cash retainer of \$150,000, all non-employee directors receive an annual cash fee of \$7,500, \$5,000 and \$3,750 for service on the Audit, Compensation and Nominations Committees, respectively, and the Chairman of the Audit, Compensation and Nominations Committees receive an additional annual cash fee of \$15,000, \$10,000 and \$7,500, respectively. In addition, during 2021 each non-employee member of the Board of Directors was issued an option exercisable for 20,000 shares of Common Stock, for a term of seven years, vesting monthly over one year of the date of grant. In setting 2021 and 2020 compensation for directors, the Compensation Committee relied on a report from Meridian Compensation Partners, LLC. Based on an analysis of director compensation set forth in the report, our financial performance, general market conditions and the interests of stockholders, it was determined that the annual cash retainer for serving on the board and the committee retainers would remain for 2022 the same as they were in 2021 and 2020.

- (3) Mr. Kraws was appointed as our independent, non-executive Chairman of the Board of Directors in May 2012. Mr. Kraws receives an annual retainer of \$150,000 for serving as our Chairman.
- (4) Dr. Monahan was appointed as a director on November 11, 2020.

LIMITS ON LIABILITY AND INDEMNIFICATION

Our Articles of Incorporation and Amended and Restated By-Laws provide that we will indemnify and hold harmless each person who serves at any time as a director or officer from and against any and all claims, judgments and liabilities to which such person shall become subject by reason of the fact that he or she is or was a director or officer 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 believe that this indemnification covers at least negligence and gross negligence on the part of the indemnified parties. Insofar as indemnification for liabilities under the Securities Act of 1933, as amended (the “Securities Act”) may be permitted to directors, officers, and controlling persons of the Company under the foregoing provisions or otherwise, we have been advised that in the opinion of the SEC that indemnification is against public policy as expressed in the Securities Act, and is therefore unenforceable. We entered into an indemnification agreement with our directors and officers. The agreement confirms our obligation to indemnify the directors and officers to the fullest extent authorized by our Articles of Incorporation and Amended and Restated By-Laws and supplements the indemnification otherwise available to the covered person under our Articles of Incorporation and Amended and Restated By-Laws. The form of indemnification agreement was described and filed as an exhibit to the Form 8-K we filed with the SEC on January 6, 2009.

COMPENSATION COMMITTEE INTERLOCKS

During the last fiscal year ended December 31, 2021, none of our executive officers served on the Board of Directors or Compensation Committee of any other entity whose officers served either on our Board of Directors or Compensation Committee.

PROPOSAL 2**RATIFICATION OF APPOINTMENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM**

The Audit Committee of the Board of Directors has appointed BDO USA, LLP as our independent registered public accounting firm for the year ending December 31, 2022.

Ratification of the appointment of BDO USA, LLP by our stockholders is not required by law, our bylaws or other governing documents. As a matter of policy, however, the appointment is being submitted to our stockholders for ratification at the 2022 Annual Meeting of Stockholders. If our stockholders fail to ratify the appointment, the Audit Committee will reconsider whether or not to retain that firm. Even if the appointment is ratified, the Audit Committee in its discretion may direct the appointment of different independent auditors at any time during the year if they determine that such a change would be in the best interests of the Company and its stockholders.

At the 2022 Annual Meeting of Stockholders, the representatives of BDO USA, LLP are expected to be available in person or via teleconference (in light of the global COVID-19 pandemic) to respond to appropriate questions and will be afforded an opportunity to make a statement if they so desire.

REPORT OF THE AUDIT COMMITTEE OF THE BOARD OF DIRECTORS¹

The Audit Committee reviews our financial reporting process on behalf of the Board of Directors. In January 2007, the Board of Directors adopted a written charter for the Audit Committee, which it re-evaluates annually. In fulfilling its responsibilities, the Audit Committee has reviewed and discussed the audited financial statements contained in the Annual Report on Form 10-K for the year ended December 31, 2021 with our management and our independent registered public accounting firm for such year, BDO USA, LLP. Our management is responsible for the financial statements and the reporting process, including the system of internal controls. The independent registered public accounting firm is responsible for expressing an opinion on the conformity of those audited financial statements with accounting principles generally accepted in the United States.

The Audit Committee (1) discussed with BDO USA, LLP the matters required by the applicable requirements of the Public Company Accounting Oversight Board (“PCAOB”) and the SEC; (2) received and reviewed the written disclosures and the letter from BDO USA, LLP required by PCAOB Ethics and Independence Rule 3526, *Communication with Audit Committees Concerning Independence*; and (3) discussed with BDO USA, LLP its independence. The Audit Committee also considered whether, and determined that, the independent registered public accounting firm’s provision of other non-audit services to us was compatible with maintaining BDO USA, LLP’s independence.

During 2021, management evaluated our system of internal control over financial reporting in accordance with the requirements set forth in Section 404 of the Sarbanes-Oxley Act of 2002 and related regulations. The Audit Committee was kept apprised of the progress of the evaluation and provided oversight and advice to management during the process. In connection with this oversight, the Audit Committee received periodic updates provided by management and the independent registered public accounting firm at each regularly scheduled Audit Committee meeting. At the conclusion of the process, management provided the Audit Committee with a report on the effectiveness of our internal control over financial reporting. The Audit Committee also reviewed the report of management contained in our 2021 Annual Report on Form 10-K, as well as the Report of Independent Registered Public Accounting Firm and the Consolidated Financial Statements (included in the 2021 Annual Report on Form 10-K). These reports related to its audit of the consolidated financial statements. The Audit Committee continues to oversee our efforts related to our internal control over financial reporting and management’s preparations for the evaluations in 2022.

¹ The material in this report is not “soliciting material,” is not deemed “filed” with the SEC and is not incorporated by reference in any filing of the Company under the Securities Act of 1933, as amended, or the Exchange Act, whether made before or after the date hereof and irrespective of any general incorporation language in any such filing.

It should be noted that the members of our Audit Committee are not our employees and are not performing the functions of auditors or accountants. Accordingly, it is not the duty or responsibility of the Audit Committee or its members to conduct “field work” or other types of auditing or accounting reviews or procedures or to set auditor independence standards. Members of the Audit Committee necessarily rely on the information provided to them by management and the independent auditors. Accordingly, the Audit Committee’s considerations and discussions referred to above do not constitute assurance that the audit of our financial statements has been carried out in accordance with generally accepted auditing standards or that our auditors are in fact independent.

Based on the review and discussions referred to above, the Audit Committee recommended to the Board of Directors (and the Board of Directors approved) that the audited financial statements be included in our Annual Report on Form 10-K for the year ended December 31, 2021, for filing with the SEC. In addition, the Audit Committee recommended to the Board of Directors and the Board of Directors approved that BDO USA, LLP be appointed as our independent registered public accounting firm for the year ended December 31, 2022 and that this appointment be presented to stockholders for ratification.

Members of the Audit Committee:

Jeffrey Wolf (Chairman)
Jeffrey J. Kraws
John Monahan

AUDIT FEES AND ALL OTHER FEES

Independent Registered Public Accounting Firm Fees and Services

The following table sets forth the aggregate fees including expenses billed to us for the years ended December 31, 2021 and 2020 by BDO USA, LLP.

	December 31,	
	2021	2020
Audit Fees and Expenses ⁽¹⁾	\$344,000	\$282,000
	<u>\$344,000</u>	<u>\$282,000</u>

- (1) Audit fees and expenses were for professional services rendered for the audit and reviews of the consolidated financial statements of the Company, professional services rendered for tax filing, issuance of consents and assistance with review of documents filed with the SEC.

Audit Committee Pre-Approval Policy

The Audit Committee has adopted procedures for pre-approving all audit and non-audit services provided by the independent registered public accounting firm, including the fees and terms of such services. These procedures include reviewing detailed back-up documentation for audit and permitted non-audit services. The documentation includes a description of, and a budgeted amount for, particular categories of non-audit services that are recurring in nature and therefore anticipated at the time that the budget is submitted. Audit Committee approval is required to exceed the pre-approved amount for a particular category of non-audit services and to engage the independent registered public accounting firm for any non-audit services not included in those pre-approved amounts. For both types of pre-approval, the Audit Committee considers whether such services are consistent with the rules on auditor independence promulgated by the SEC and the Public Company Accounting Oversight Board (PCAOB). The Audit Committee also considers whether the independent registered public accounting firm is best positioned to provide the most effective and efficient service, based on such reasons as the auditor’s familiarity with our business, people, culture, accounting systems, risk profile, and whether the services enhance our ability to manage or control risks and improve audit quality. The Audit Committee may form and delegate pre-approval authority to subcommittees consisting of one or more members of the Audit Committee, and such subcommittees

must report any pre-approval decisions to the Audit Committee at its next scheduled meeting. All of the services provided by the independent registered public accounting firm were pre-approved by the Audit Committee.

Vote Required

The proposal to ratify the appointment of BDO USA, LLP as our independent registered public accounting firm for the fiscal year ending December 31, 2022, requires an affirmative vote from the holders of a majority of the votes of shares of Common Stock present in person or represented by proxy and entitled to vote on this matter at the 2022 Annual Meeting of Stockholders.

OUR BOARD OF DIRECTORS UNANIMOUSLY RECOMMENDS THAT YOU VOTE FOR RATIFICATION OF THE SELECTION OF BDO USA, LLP AS OUR INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM FOR THE YEAR ENDING DECEMBER 31, 2022.

PROPOSAL 3

APPROVAL OF AN AMENDMENT TO THE COMPANY'S 2020 STOCK INCENTIVE PLAN TO INCREASE THE NUMBER OF SHARES OF COMMON STOCK THAT WE WILL HAVE AUTHORITY TO GRANT UNDER THE PLAN FROM 400,000 TO 7,000,000 AND TO INCREASE THE ANNUAL NON-EMPLOYEE DIRECTOR GRANT LIMIT TO 1,000,000 SHARES OF COMMON STOCK

On July 30, 2020, the Board of Directors adopted, and our stockholders approved on September 17, 2020, the Synthetic Biologics, Inc. 2020 Stock Incentive Plan (the "2020 Plan"); however, as of August 3, 2022, there were (i) 32,000 shares of Common Stock available for grant under the 2020 Plan and (ii) 368,000 shares of Common Stock subject to awards were outstanding under the 2020 Plan, which numbers have been adjusted for the 1 for 10 reverse stock split effected on July 25, 2022.

In an effort to preserve cash and to attract, retain and motivate persons who make important contributions to our business, we would like to issue securities to our officers, directors and consultants. Management believes that the number of shares of Common Stock currently available for issuance under the 2020 Plan is insufficient to ensure it can meet its needs to provide for awards to the 2020 Plan participants for the next 12 months and that it may be insufficient in order to allow us the ability to compete successfully for talented employees and consultants.

The Board of Directors has approved, subject to stockholder approval, the amendments to the 2020 Plan to increase by 6,600,000 the number of shares that may be granted under the 2020 Plan. The amendment to our 2020 Plan will increase (i) the number of shares of Common Stock with respect to which awards may be granted under the 2020 Plan from 400,000 shares of Common Stock (which number has been adjusted to reflect the reverse stock split effected on July 25, 2022) to 7,000,000 shares of Common Stock and (ii) the number of shares of Common Stock with respect to which awards may be granted under the 2020 Plan to any non-employee director during any calendar year from 100,000 shares of Common Stock (which number has been adjusted to reflect the reverse stock split effected on July 25, 2022) to 1,000,000 shares of Common Stock (which was the pre-stock split limit).

Purpose of the 2020 Stock Incentive Plan

The Board of Directors believes that the proposed amendment to the 2020 Plan is necessary for us to attract, retain and motivate our employees, directors and consultants through the grant of stock options, stock appreciation rights, restricted stock, restricted stock units and other equity-based or equity-related awards. The Company believes the 2020 Plan is best designed to provide the proper incentives for our employees, directors and consultants, ensures our ability to make performance-based awards, and meets the requirements of applicable law. Additional individuals may be awarded awards under the 2020 Plan as consultants.

We manage our long-term stockholder dilution by limiting the number of equity incentive awards granted annually. The Board of Directors monitors our annual stock award Burn Rate, Dilution and Overhang (each as defined below), among other factors, in its efforts to maximize stockholders' value by granting what, in the Board of Directors' judgment, are the appropriate number of equity incentive awards necessary to attract, reward, and retain employees, consultants and directors. The table below illustrates our Burn Rate, Dilution, and Overhang for 2020 (the year in which such plan became effective), and 2021 with details of each calculation noted below the table.

	2021	2020
Burn Rate⁽¹⁾	1.85%	8.10%
Dilution⁽²⁾	3.08%	22.96%
Overhang⁽³⁾	2.93%	16.48%

(1) Burn Rate is (number of shares subject to equity awards granted during a fiscal year)/(weighted average shares outstanding for that fiscal year).

- (2) Dilution is (number of shares subject to equity awards + the number of shares available for future awards at the end of a fiscal year)/(number of shares outstanding at the end of the fiscal year + number of share subject to equity awards + number of shares available for future awards).
- (3) Overhang is (number of shares subject to equity awards at the end of a fiscal year)/(number of shares outstanding at the end of the fiscal year + number of shares subject to equity awards + number of shares available for future awards).

Limitation on Awards and Shares Available

The aggregate number of shares of Common Stock that is available to be issued pursuant to stock awards under the 2020 Stock Incentive Plan is 400,000 shares. To date, we have issued options to purchase an aggregate of 368,000 shares of Common Stock under the 2020 Plan. As of August 3, 2022, there are 32,000 shares of Common Stock available for grants that may be made under the 2020 Plan.

Summary of the 2020 Stock Incentive Plan

The following is a summary of the principal features of the 2020 Plan. This summary does not purport to be a complete description of all of the provisions of the 2020 Plan and it is qualified in its entirety by reference to the full text of the 2020 Plan, a copy of which has been filed as an exhibit to our Annual Report on Form 10-K for the year ended December 31, 2021 and the proposed amendment to the 2020 Plan is attached hereto as Appendix C.

Available Shares. Currently, an aggregate of 400,000 shares of the Company's Common Stock may be issued under the 2020 Plan, subject to equitable adjustment in the event of stock splits and other capital changes, all of which may be issued in respect of Incentive Stock Options (or ISOs) that meet the requirements of Section 422 of the Code.

In applying the aggregate share limitation under the 2020 Plan, shares of Common Stock (i) subject to awards that are forfeited, cancelled, returned to the Company for failure to satisfy vesting requirements or otherwise forfeited, or terminated without payment being made thereunder and (ii) that are surrendered in payment or partial payment of the exercise price of an option or taxes required to be withheld with respect to the exercise of stock options or in payment with respect to any other form of award are not counted and, therefore, may be made subject to new awards under the 2020 Plan.

Non-Employee Director Compensation Limit

Under the 2020 Plan, no more than 100,000 shares of Common Stock may be subject to stock awards granted under the 2020 Plan during any one calendar year to any non-employee director. The Board of Directors has approved, subject to stockholder approval increasing the 100,000 shares of Common Stock limit to 1,000,000 shares of Common Stock.

Administration. The 2020 Plan is administered by the Compensation Committee of our Board of Directors (the "Compensation Committee"). The Compensation Committee has discretion to determine the individuals to whom awards may be granted under the 2020 Plan, the number of shares of Common Stock, units or other rights subject to each award, the type of award, the manner in which such awards will vest, and the other conditions applicable to awards. The Compensation Committee is authorized to interpret the 2020 Plan, to prescribe, amend and rescind any rules and regulations relating to the 2020 Plan and to make any other determinations necessary or desirable for the administration of the 2020 Plan. All interpretations, determinations and actions by the Compensation Committee are final, conclusive and binding on all parties.

Eligibility. Any employee, officer, director, consultant, advisor or other individual service provider of the Company or any of its subsidiaries, or any person who is determined by our Compensation Committee to be a prospective employee, officer, director, consultant, advisor or other individual service provider of the Company or any of its subsidiaries is eligible to participate in the 2020 Plan. As of August 3, 2022, the Company had approximately 19 full-time employees, including 2 executive officers, 3 non-employee directors, and 4 consultants, advisors and/or other individual service providers. As of August 3, 2022, no person is eligible to participate as a result of a determination by the Compensation Committee that that person is a

prospective employee, director or consultant of our Company or any of our subsidiaries. As awards under the 2020 Plan are within the discretion of the Compensation Committee, we cannot determine how many individuals in each of the categories described above will receive awards.

Types of Awards. Under the 2020 Plan, the Compensation Committee may grant nonqualified stock options (or NSOs), incentive stock options (or ISOs), stock appreciation rights (or SARs), restricted stock, stock units, performance shares, performance units, other cash-based awards and other stock-based awards. The terms of each award will be set forth in a written agreement with the recipient.

Stock Options. The Compensation Committee will determine the exercise price and other terms for each option and whether the options will be NSOs or ISOs. The exercise price per share of each option will not be less than 100% of the fair market value of the Company's Common Stock on the date of grant or, if there are no trades on such date, then the closing price of a share of our Common Stock on the most recent date preceding the date of grant on which shares of Common Stock were publicly traded (or 110% of the fair market value per share in the case of ISOs granted to a ten-percent or more shareholder). However, if permissible under law and the rules of the exchange on which the Company is listed, options to participants who are not residents of the U.S. may be granted at a price below fair market value on the date of grant. On August 3, 2022, the closing sale price of a share of our Common Stock on the NYSE American was \$1.48.

ISOs may be granted only to employees and are subject to certain other restrictions. To the extent an option intended to be an ISO does not qualify as an ISO, it will be treated as a nonqualified option.

A participant may exercise an option by written notice and payment of the exercise price in cash, or, as determined by the Compensation Committee, through delivery of previously owned shares, the withholding of shares deliverable upon exercise, a cashless exercise program implemented by the Compensation Committee in connection with the 2020 Plan, and/or such other method as approved by the Compensation Committee and set forth in an award agreement. The maximum term of any option granted under the 2020 Plan is ten years from the date of grant (five years in the case of an ISO granted to a ten-percent or more shareholder). The Compensation Committee may, in its discretion, permit a holder of an NSO to exercise the option before it has otherwise become exercisable, in which case the shares of the Company's Common Stock issued to the recipient will be restricted stock having analogous vesting restrictions to the unvested NSO before exercise.

No option may be exercisable for more than ten years (five years in the case of an ISO granted to a ten-percent or more shareholder) from the date of grant. Options granted under the 2020 Plan will be exercisable at such time or times as the Compensation Committee prescribes at the time of grant. No employee may receive ISOs that first become exercisable in any calendar year in an amount exceeding \$100,000.

Unless an award agreement provides otherwise, if a participant's Service (as defined in the 2020 Plan) terminates (i) by reason of his or her death or Disability (as defined in the 2020 Plan), any option held by such participant may be exercised, to the extent otherwise exercisable, by the participant or his or her estate or personal representative, as applicable, at any time in accordance with its terms for up to one year after the date of such participant's death or termination of Service, as applicable, (ii) for Cause (as defined in the 2020 Plan), any option held by such participant will be forfeited and cancelled as of the date of termination of Service and (iii) for any reason other than death, Disability or Cause, any option held by such participant may be exercised, to the extent otherwise exercisable, up until ninety (90) days following termination of Service.

Stock Appreciation Rights. The Compensation Committee may grant SARs independent of or in connection with an option. The Compensation Committee will determine the other terms applicable to SARs. The base price per share of each SAR will not be less than 100% of the closing price of a share of the Company's Common Stock on the date of grant or, if there are no trades on such date, then the closing price of a share of the Company's Common Stock on the most recent date preceding the date of grant on which shares of Common Stock were publicly traded. The maximum term of any SAR granted under the 2020 Plan will be ten years from the date of grant. Generally, each SAR will entitle a participant upon exercise to an amount equal to the excess of the fair market value on the exercise date of one share of our Common Stock over the base price, multiplied by the number of shares of Common Stock as to which the SAR is

exercised. Payment may be made in shares of Company Common Stock, in cash, or partly in shares of Company Common Stock and partly in cash, all as determined by the Compensation Committee.

Restricted Stock and Stock Units. The Compensation Committee may award restricted common stock and/or stock units under the 2020 Plan. Restricted stock awards consist of shares of stock that are transferred to a participant subject to restrictions that may result in forfeiture if specified conditions are not satisfied. Stock units confer the right to receive shares of the Company's Common Stock, cash, or a combination of shares and cash, at a future date upon or following the attainment of certain conditions specified by the Compensation Committee, subject to applicable tax withholding requirements. The Compensation Committee will determine the restrictions and conditions applicable to each award of restricted stock or stock units, which may include performance-based conditions. Unless the Compensation Committee determines otherwise at the time of grant, holders of restricted stock will have the right to vote the shares and receive all dividends and other distributions.

Performance Shares and Performance Units. The Compensation Committee may award performance shares and/or performance units under the 2020 Plan. Performance shares and performance units are awards, payable in shares of the Company's Common Stock, cash or a combination thereof, which are earned during a specified time period subject to the attainment of performance goals, as established by the Compensation Committee. The Compensation Committee will determine the restrictions and conditions applicable to each award of performance shares and performance units.

Incentive Bonus Awards. The Compensation Committee may award incentive bonus awards payable in cash or shares of common stock, as set forth in an award agreement. Incentive bonus awards may be based upon the attainment of specified levels of Company or subsidiary performance. The amount of an incentive bonus award to be paid upon the attainment of each targeted level of performance will equal a percentage of a participant's base salary for the fiscal year, a fixed dollar amount or such other formula, as determined by the Compensation Committee. The Compensation Committee will determine the terms and conditions applicable to each incentive bonus award.

Other Stock-Based and Cash-Based Awards. The Compensation Committee may award other types of stock-based or cash-based awards under the 2020 Plan, including the grant or offer for sale of unrestricted shares of the Company's Common Stock, in such amounts and subject to such terms and conditions as the Compensation Committee determines.

Transferability. Awards granted under the 2020 Plan will not be transferable other than by will or by the laws of descent and distribution, except that the Compensation Committee may permit NSOs, share-settled SARs, restricted stock, performance share or share-settled other stock-based awards to be transferred to family members and/or for estate planning or charitable purposes.

Change in Control. The Compensation Committee may, at the time of the grant of an award, provide for the effect of a change in control (as defined in the 2020 Plan) on any award, including (i) accelerating or extending the time periods for exercising, vesting in, or realizing gain from any award, (ii) eliminating or modifying the performance or other conditions of an award, (iii) providing for the cash settlement of an award for an equivalent cash value, as determined by the Compensation Committee, or (iv) such other modification or adjustment to an award as the Compensation Committee deems appropriate to maintain and protect the rights and interests of participants upon or following a change in control. Unless otherwise provided by an award agreement, the Compensation Committee may, in its discretion and without the need for the consent of any recipient of an award, also take one or more of the following actions contingent upon the occurrence of a change in control: (a) cause any or all outstanding options and SARs to become immediately exercisable, in whole or in part; (b) cause any other awards to become non-forfeitable, in whole or in part; (c) cancel any option or SAR in exchange for a substitute option and/or SAR; (d) cancel any award of restricted stock, stock units, performance shares or performance units in exchange for a similar award of the capital stock of any successor corporation; (e) redeem any restricted stock for cash and/or other substitute consideration with a value equal to the fair market value of an unrestricted share of the Company's Common Stock on the date of the change in control; or (f) terminate any award in exchange for an amount of cash and/or property equal to the amount, if any, that would have been attained upon the exercise of such award or realization of the participant's rights as of the date of the occurrence of the Change in Control (the "Change in Control Consideration"); provided, however that if the Change in Control

Consideration with respect to any option or SAR does not exceed the exercise price of such option or SAR, the Compensation Committee may cancel the option or SAR without payment of any consideration therefor. Any such Change in Control Consideration may be subject to any escrow, indemnification and similar obligations, contingencies and encumbrances applicable in connection with the change in control to holders of the Company's Common Stock. Without limitation of the foregoing, if as of the date of the occurrence of the change in control the Compensation Committee determines that no amount would have been attained upon the realization of the participant's rights, then such award may be terminated by the Company without payment. The Compensation Committee may cause the Change in Control Consideration to be subject to vesting conditions (whether or not the same as the vesting conditions applicable to the award prior to the change in control) and/or make such other modifications, adjustments or amendments to outstanding Awards or the 2020 Plan as the Compensation Committee deems necessary or appropriate.

Term; Amendment and Termination. No award may be granted under the 2020 Plan on or after September 18, 2030. The Board of Directors may suspend, terminate, or amend the 2020 Plan in any respect at any time, provided, however, that (i) no amendment, suspension or termination may materially impair the rights of a participant under any awards previously granted, without his or her consent, (ii) the Company shall obtain stockholder approval of any 2020 Plan amendment as required to comply with any applicable law, regulation or stock exchange rule and (iii) stockholder approval is required for any amendment to the 2020 Plan that (x) increases the number of shares of common stock available for issuance thereunder or (y) changes the persons or class of persons eligible to receive awards.

New Plan Benefits; Existing Plan Benefits

The grant of options and other awards under the 2020 Plan is discretionary, and we cannot determine now the number or type of options or other awards to be granted in the future to any particular person or group. The awards granted under the 2020 Plan to date are set forth in the table below.

2020 Stock Incentive Plan

Name and position	Number of shares subject to grant
Steven A. Shallcross, Chief Executive Officer, Chief Financial Officer and Director	180,858
Jeffrey J. Kraws, Chairman of the Board of Directors	69,732
Jeffrey Wolf, Director	69,732
John Monahan, Director	37,522
All Current Executive Officers as a Group (two (2) persons)	180,858
All Current Non-Executive Directors as a Group (three (3) persons)	176,986
All Employees, including our current officers who are not Executive Officers as a group	165,235

Material United States Federal Income Tax Consequences

The following is a summary of the principal federal income tax consequences of option grants and other awards under the 2020 Plan. Optionees and recipients of other rights and awards granted under the 2020 Plan are advised to consult their personal tax advisors before exercising an option or stock appreciation right or disposing of any stock received pursuant to the exercise of an option or stock appreciation right or following vesting of a restricted stock award or restricted stock unit or upon grant of an unrestricted stock award. In addition, the following summary is based upon an analysis of the Code as currently in effect, existing laws, judicial decisions, administrative rulings, regulations and proposed regulations, all of which are subject to change and does not address state, local or other tax laws.

Nonqualified Stock Options. There will be no federal income tax consequences to a participant or to the Company upon the grant of a nonqualified stock option. When the participant exercises a nonqualified option, he or she will recognize ordinary income in an amount equal to the excess of the fair market value of the option shares on the date of exercise over the exercise price, and the Company will be allowed a

corresponding tax deduction, subject to any applicable limitations under Code Section 162(m). Any gain that a participant realizes when the participant later sells or disposes of the option shares will be short-term or long-term capital gain, depending on how long the participant held the shares.

Incentive Stock Options. There will be no federal income tax consequences to a participant or to the Company upon the grant of an ISO. If the participant holds the option shares for the required holding period of at least two years after the date the option was granted and one year after exercise of the option, the difference between the exercise price and the amount realized upon sale or disposition of the option shares will be long-term capital gain or loss, and the Company will not be entitled to a federal income tax deduction. If the participant disposes of the option shares in a sale, exchange, or other disqualifying disposition before the required holding period ends, the participant will recognize taxable ordinary income in an amount equal to the difference between the exercise price and the lesser of the fair market value of the shares on the date of exercise or the disposition price, and the Company will be allowed a federal income tax deduction equal to such amount, subject to any applicable limitations under Code Section 162(m). Any amount received by the participant in excess of the fair market value on the exercise date will be taxed to the participant as capital gain, and the Company will receive no corresponding deduction. While the exercise of an ISO does not result in current taxable income, the excess of the fair market value of the option shares at the time of exercise over the exercise price will be a tax preference item that could subject a participant to alternative minimum tax in the year of exercise.

Stock Appreciation Rights. A participant will not recognize income, and the Company will not be allowed a tax deduction, at the time a SAR is granted. When a participant exercises a SAR, the cash or fair market value of any common stock received will be taxable to the participant as ordinary income, and the Company will be allowed a federal income tax deduction equal to such amount, subject to any applicable limitations under Code Section 162(m).

Restricted Stock. Unless a participant makes an election to accelerate recognition of income to the grant date as described below, the participant will not recognize income, and the Company will not be allowed a compensation tax deduction, at the time restricted stock is granted. When the restrictions lapse, the participant will recognize ordinary income equal to the fair market value of the common stock as of that date, less any amount paid for the stock, and the Company will be allowed a corresponding tax deduction, subject to any applicable limitations under Code Section 162(m). If the participant files an election under Code Section 83(b) within 30 days after the grant date, the participant will recognize ordinary income as of the grant date equal to the fair market value of the stock as of that date, less any amount paid for the stock, and the Company will be allowed a corresponding compensation tax deduction at that time, subject to any applicable limitations under Code Section 162(m). Any future appreciation in the stock will be taxable to the participant at capital gains rates. However, if the stock is later forfeited, such participant will not be able to recover the tax previously paid pursuant to the Code Section 83(b) election.

Stock Units, Performance Awards, and Incentive Bonus Awards. A participant will not recognize income, and the Company will not be allowed a compensation tax deduction, at the time a stock unit, performance award or incentive bonus award is granted. When a participant receives payment under a stock unit, performance award or incentive bonus award, the amount of cash received and the fair market value of any shares of stock received will be ordinary income to the participant, and the Company will be allowed a corresponding compensation tax deduction at that time, subject to any applicable limitations under Code Section 162(m).

Section 409A. If an award is subject to Section 409A of the Code, but does not comply with the requirements of Section 409A of the Code, the taxable events as described above could apply earlier than described, and could result in the imposition of additional taxes and penalties. Participants are urged to consult with their tax advisors regarding the applicability of Section 409A of the Code to their awards.

Potential Limitation on Company Deductions. Section 162(m) of the Code generally disallows a tax deduction for compensation in excess of \$1 million paid in a taxable year by a publicly held corporation to its chief executive officer and certain other “covered employees”. The Board of Directors and the Compensation Committee intend to consider the potential impact of Section 162(m) on grants made under the 2020 Plan, but reserve the right to approve grants of options and other awards for an executive officer that exceeds the deduction limit of Section 162(m).

Tax Withholding. As and when appropriate, each optionee purchasing shares of the Company's Common Stock and each grantee receiving an award of shares of the Company's Common Stock under the 2020 Plan will be required to pay any federal, state or local taxes required by law to be withheld.

Interests of Directors and Executive Officers

Our directors and executive officers have substantial interests in the matters set forth in this proposal since equity awards may be granted to them under the 2020 Plan.

EQUITY COMPENSATION PLAN INFORMATION

Equity Compensation Plan Information

The following table sets forth information about the securities authorized for issuance under our equity compensation plans for the fiscal year ended December 31, 2021.

Plan Category	Number of Securities to be Issued Upon Exercise of Outstanding Options	Weighted-Average Exercise Price of Outstanding Options	Number of Securities Remaining Available for Future Issuance Under Equity Compensation Plans
Equity compensation plans approved by stockholders:			
2001 Stock Incentive Plan	—	\$ —	—
2007 Stock Incentive Plan	515	\$ 695,20	—
2010 Stock Incentive Plan	245,013	\$ 33.90	—
2020 Stock Incentive Plan	380,000	3.60	20,000
Equity compensation plans not approved by stockholders	N/A	N/A	N/A
Total	625,528	\$ 1.61	20,000

Vote Required

The affirmative vote of a majority of the shares of Common Stock present in person or represented by proxy and entitled to vote on this matter at the 2022 Annual Meeting of Stockholders will be required to approve the amendment to our 2020 Plan.

THE BOARD OF DIRECTORS UNANIMOUSLY RECOMMENDS THAT YOU VOTE FOR THE AMENDMENT TO THE COMPANY'S 2020 PLAN TO INCREASE THE NUMBER OF SHARES OF COMMON STOCK AVAILABLE THAT WE WILL HAVE AUTHORITY TO GRANT.

PROPOSAL 4**ADVISORY VOTE ON THE APPROVAL OF EXECUTIVE COMPENSATION**

In accordance with the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 (the “Dodd-Frank Act”) we are required to provide our stockholders with the opportunity to cast an advisory vote on the compensation of our named executive officers as disclosed in this Proxy Statement in accordance with SEC rules. The advisory stockholder vote to approve the compensation of our named executive officers is often referred to as the “say-on-pay vote.” This say-on-pay vote will not be binding on us, the Board of Directors, or the Compensation Committee.

Our Compensation Committee continually reviews the compensation programs for our executive officers to ensure they achieve the desired goals of aligning our executive compensation structure with our stockholders’ interests and current market practices.

The Board of Directors is asking our stockholders to indicate their support for our named executive officers’ compensation as disclosed in this Proxy Statement. This proposal gives our stockholders the opportunity to express their views on our executive compensation. This vote is not intended to address any specific item of compensation, but rather the overall compensation of our named executive officers and the philosophy, policies and practices described in this Proxy Statement.

Accordingly, the Board of Directors will ask our stockholders to vote “FOR” the following resolution at the 2022 Annual Meeting of Stockholders:

“RESOLVED, that the Company’s stockholders approve, on an advisory basis, the compensation of the named executive officers as disclosed in the Proxy Statement for the 2022 Annual Meeting of Stockholders pursuant to the compensation disclosure rules of the Securities and Exchange Commission (which disclosure includes the Summary Compensation Table for fiscal year 2021, and the other related tables and disclosures).”

The say-on-pay vote is advisory, and therefore is not binding on us, the Compensation Committee or our Board of Directors. Our Board of Directors and Compensation Committee value the opinions of our stockholders and to the extent there is any significant vote against the named executive officers’ compensation as disclosed in this Proxy Statement, we will consider our stockholders’ concerns and the Compensation Committee will evaluate whether any actions are necessary to address those concerns.

Required Vote

Approval of this proposal requires the affirmative vote of the holders of a majority of shares of Common Stock present in person or represented by proxy and entitled to vote on this matter at the 2022 Annual Meeting of Stockholders.

**THE BOARD OF DIRECTORS AND COMPENSATION COMMITTEE UNANIMOUSLY
RECOMMEND A VOTE FOR THE APPROVAL, ON AN ADVISORY BASIS, OF THE
COMPENSATION OF THE NAMED EXECUTIVE OFFICERS AS DISCLOSED IN THIS PROXY
STATEMENT.**

IMPACT OF PREFERRED STOCK ON CERTAIN PROPOSALS

In order to assist with procuring the vote necessary to effect the Name Change Proposal, the Authorized Common Stock Increase Proposal and the Adjournment Proposal, on July 29, 2022, we closed a private placement offering in which we issued an aggregate of 375,000 shares of Preferred Stock (275,000 shares of Series C Convertible Preferred Stock and 100,000 shares of Series D Convertible Preferred Stock) to one investor. The shares of Preferred Stock have a stated value of \$8.00 per share and are convertible, following the issuance date, at an initial conversion price of \$1.22 per share into an aggregate of 1,803,279 shares of Common Stock upon the conversion of the Series C Convertible Preferred Stock and into an aggregate of 655,738 shares of Common Stock upon the conversion of the Series D Convertible Preferred Stock. The terms of the Series C Convertible Preferred Stock are set forth in a Certificate of Designation of Preferences, Rights and Limitations of Series C Convertible Preferred Stock (the “Series C Certificate of Designation”), and the terms of the Series D Convertible Preferred Stock are set forth in a Certificate of Designation of Preferences, Rights and Limitations of Series D Convertible Preferred Stock (the “Series D Certificate of Designation”, and together with the Series C Certificate of Designation, the “Certificates of Designation”), each filed with the State of Nevada and were made effective on July 28, 2022.

The shares of Preferred Stock do not have any voting rights except with respect to the Name Change Proposal, the Authorized Common Stock Increase Proposal and the Adjournment Proposal presented at this 2022 Annual Meeting of Stockholders and at any adjournments or postponements thereof, or on any proposal to adjourn the 2022 Annual Meeting of Stockholders, or otherwise as required by law or as set forth in the Certificates of Designation.

The Series C Certificate of Designation provides that the holders of record of our Series C Convertible Preferred Stock are entitled to one vote per share on an as-converted basis, or an aggregate of 1,803,279 votes, calculated based on an \$8.00 per share stated value and using a conversion price of \$1.22 per share. The holders of the Series C Convertible Preferred Stock, however, in order to comply with NYSE listing rules, have agreed that they may only submit 1,549,295 of the votes relating to the Series C Convertible Preferred Stock that they would otherwise be entitled to vote. The holders of the Series C Convertible Preferred Stock have also agreed to: (i) not transfer their shares of Series C Convertible Preferred Stock until the earlier of the date that the Authorized Common Stock Increase is effected or October 26, 2022 (which may be extended to December 31, 2022 if certain conditions are met), (ii) attend the 2022 Annual Meeting of Stockholders, (iii) submit the 1,549,295 of the votes relating to the Series C Convertible Preferred Stock that they would otherwise be entitled to vote in favor of the Name Change Proposal, Authorized Common Stock Increase Proposal and Adjournment Proposal, and (iv) upon request by the Company, grant the Company or its designee an irrevocable proxy to vote all shares of Series C Convertible Preferred Stock in favor of the Authorized Common Stock Increase.

Each holder of record of our Series D Convertible Preferred Stock is entitled to 20,000 votes per share of Series D Convertible Preferred Stock, or an aggregate of 2,000,000,000 votes; *provided, that*, such votes must be counted by the Company in the same proportion as the aggregate shares of Common Stock and Series C Convertible Preferred Stock are voted on each of the Name Change Proposal, the Authorized Common Stock Increase Proposal and the Adjournment Proposal at the 2022 Annual Meeting of Stockholders. The holders of the Series D Convertible Preferred Stock have agreed to not transfer their shares of Series D Convertible Preferred Stock until the earlier of the date that the Authorized Common Stock Increase is effected or October 26, 2022 (which may be extended to December 31, 2022 if certain conditions are met), attend the 2022 Annual Meeting of Stockholders, to vote all shares of Series D Convertible Preferred Stock in the same proportion as the aggregate shares of Common Stock and Series C Convertible Preferred Stock are voted on each of the Name Change Proposal, the Authorized Common Stock Increase and the Adjournment Proposal and, upon request by the Company, grant the Company or its designee an irrevocable proxy to vote the shares of Series D Convertible Preferred Stock in accordance with the above. As an example, if 70% of the aggregate votes cast by Common Stock and Series C Convertible Preferred Stock voting on the Name Change Proposal are voted in favor thereof and 30% of the aggregate votes cast by Common Stock and Series C Convertible Preferred Stock voting on the Name Change Proposal are voted against such proposals, then 70% of the votes entitled to be cast by Series D Convertible Preferred Stock will be cast in favor of such proposal and 30% of such votes will be cast against the proposal.

PROPOSAL 5

APPROVAL OF AN AMENDMENT TO ARTICLES OF INCORPORATION OF THE COMPANY TO EFFECT A CHANGE OF ITS CORPORATE NAME

On August 2, 2022, the Board of Directors adopted a resolution approving an amendment to Article I of the Company's Articles of Incorporation to effect a name change and recommended that the name change amendment be submitted to stockholders for approval. The Board believes that it is in the best interest of the Company to change its name from Synthetic Biologics, Inc. to "Theriva Biologics, Inc.", and recommends the approval of the name change amendment to the Company's stockholders.

Reasons for the name change

On March 10, 2022, we consummated the acquisition of all of the outstanding equity of VCN Biosciences, S.L., a company developing a new oncolytic adenovirus platform designed for intravenous (IV), intravitreal and antitumoral delivery to trigger tumor cell death, improve access of co-administered cancer therapies to the tumor, and promote a robust and sustained anti-tumor response by the patient's immune system. Accordingly, the Board of Directors believes that the corporate name, "Theriva Biologics, Inc.," will better portray and convey the Company's shift in focus and new mission.

Effects of the name change

If the name change amendment is approved by stockholders, the name change will be effective when the amendment to the Articles of Incorporation is filed with the Secretary of State of the State of Nevada. The Company has reserved the NYSE American stock symbol "TOVX." If the name change amendment is approved, the Company intends to request that the Common Stock trade under this new stock symbol, rather than under the current "SYN" symbol.

The full text of the proposed amended Article 1 of our Articles of Incorporation is attached to this Proxy Statement as Appendix A. If the name change amendment is approved by stockholders, Article I of the Company's Articles of Incorporation will be amended to read in its entirety as follows:

ARTICLE I

Name

The name of the Corporation is Theriva Biologics, Inc.

If the name change becomes effective, the rights of stockholders holding certificated shares under currently outstanding stock certificates and the number of shares represented by those certificates will remain unchanged. The name change will not affect the validity or transferability of any currently outstanding stock certificates nor will it be necessary for stockholders with certificated shares to surrender or exchange any stock certificates they currently hold as a result of the name change. Uncertificated shares currently held in direct registration accounts and any new stock certificates that are issued after the name change becomes effective will bear the name Theriva Biologics, Inc.

If the name change amendment is not approved by stockholders, the proposed amendment to the Company's Articles of Incorporation will not be made and the Company's name and the ticker symbol for trading of the Common Stock on the NYSE American will remain unchanged.

Unless you specify otherwise in your proxy, your proxy will be voted **FOR** approval of an amendment to Article I of the Articles of Incorporation of Synthetic Biologics, Inc. to change the Company's name to Theriva Biologics, Inc.

Impact of Preferred Stock on Certain Proposals

For additional information concerning the impact of Preferred Stock in connection with the Authorized Common Stock Increase, see "— *Impact of Preferred Stock on Certain Proposal*" for more information.

Interests of Directors and Executive Officers

Our directors and executive officers have no substantial interests, directly or indirectly, in the matters set forth herein regarding the proposed Name Change except to the extent of their ownership of shares of our Common Stock.

Vote Required to Approve the Name Change

Approval of the certificate of amendment to our Articles of Incorporation included as Appendix A, and to authorize our Board of Directors to effect the Name Change requires an affirmative vote of a majority of the voting power of the outstanding Common Stock and Preferred Stock entitled to vote on the proposal, voting together as a single class. See “*Impact of Preferred Stock on Certain Proposal*” for more information regarding the voting of the Preferred Stock.

THE BOARD OF DIRECTORS RECOMMENDS A VOTE “FOR” THE APPROVAL OF THE AMENDMENT TO ARTICLES OF INCORPORATION OF SYNTHETIC BIOLOGICS, INC. TO CHANGE THE COMPANY’S NAME TO THERIVA BIOLOGICS, INC.

PROPOSAL 6**APPROVAL OF AN AMENDMENT TO THE COMPANY'S ARTICLES OF INCORPORATION TO INCREASE THE NUMBER OF AUTHORIZED SHARES OF COMMON STOCK**

Our Board of Directors has unanimously approved an amendment to our Articles of Incorporation to increase the number of shares of authorized Common Stock from 20,000,000 shares to 350,000,000 shares, as further described below. If approved, the Authorized Common Stock Increase would be effected by amending Article 3 of our Articles of Incorporation to reflect the Authorized Common Stock Increase. The full text of the proposed amended Article 3 of our Articles of Incorporation is attached to this Proxy Statement as Appendix B.

The Board of Directors proposes and recommends increasing the number of shares of authorized Common Stock from the 20,000,000 shares that are authorized for issuance pursuant to our Articles of Incorporation to a total of 350,000,000 shares of common stock. The chart below illustrates the number of shares of Common Stock that will be available for issuance if the Authorized Common Stock Increase is effected. The number of shares disclosed in the column "Estimated number of shares of Common Stock after the Increase" gives further effect to the Authorized Common Stock Increase in the number of authorized shares of Common Stock from 20,000,000 to 350,000,000.

	ESTIMATED NUMBER OF SHARES OF COMMON STOCK BEFORE INCREASE⁽¹⁾	ESTIMATED NUMBER OF SHARES OF COMMON STOCK AFTER THE INCREASE⁽⁴⁾
Authorized	20,000,000	350,000,000
Outstanding ⁽¹⁾	18,303,077	18,303,077
Issuable upon exercise of outstanding warrants and options	1,241,832	1,241,832
Reserved for issuance ⁽²⁾	32,000	6,632,000
Authorized but unissued ⁽³⁾	423,091	323,823,091

- (1) Assumes all shares of Preferred Stock have converted into shares of Common Stock.
- (2) Shares reserved for future issuance under our existing equity incentive plans, excluding shares issuable under outstanding stock options.
- (3) Shares authorized but unissued represent Common Stock available for future issuance beyond shares currently outstanding, shares issuable under outstanding warrants and stock options or upon conversion of our outstanding preferred stock, and shares reserved for issuance under equity incentive plans.
- (4) Assumes the Stock Incentive Plan Amendments are approved by stockholders.

The Board of Directors believes that the Authorized Common Stock Increase is advisable and in our stockholders' best interests. The Authorized Common Stock Increase will provide us with flexibility in completing financing and capital raising transactions, which may be necessary for us to execute our future business plans.

We anticipate that we may issue additional shares of Common Stock in the future in connection with one or more of the following:

- financing transactions, such as public or private offerings of Common Stock or convertible securities;
- partnerships, collaborations and other similar transactions;
- our equity incentive plans;
- strategic investments; and
- other corporate purposes that have not yet been identified.

The availability of additional shares of Common Stock for issuance is, in management's view, prudent and will afford us flexibility in acting upon financing transactions to strengthen our financial position and/or

commercial partnership opportunities that may arise and aid in meeting the NYSE American stockholders' equity requirements. Other possible business and financial uses for the additional shares of Common Stock include, without limitation, potential strategic transactions, including, among other things, acquisitions, strategic partnerships, joint ventures, restructurings, business combinations and investment. As of the Record Date, we have approximately 423,091 authorized shares of Common Stock available for future issuance. We do not believe that this is sufficient to meet our future equity financing requirements. We currently have no agreements with any third parties for the sale of our securities. Although at this time, we do not have any plans, commitments, proposals, arrangements, understandings or agreements regarding the issuance of Common Stock other than issuances upon exercise or conversion of currently outstanding securities; we anticipate seeking future equity financing opportunities and will evaluate opportunities that are presented to us. We believe that the Authorized Common Stock Increase will help ensure that we have sufficient authorized shares available for issuance to allow us to pursue equity financings if the Board of Directors determines that it would be in our best interests based on our working capital needs and prevailing market conditions.

We believe that the additional authorized shares would enable us to act quickly in response to opportunities that may arise for these types of transactions, in most cases without the necessity of obtaining further stockholder approval and holding a special stockholders' meeting before such issuance(s) could proceed, except as provided under Nevada law or under applicable NYSE American rules.

Possible Effects of the Authorized Share Increase

The newly authorized shares of Common Stock will have all the powers, preferences, and rights of the shares of Common Stock presently authorized. Therefore, approval of the Authorized Common Stock Increase and any subsequent issuance of additional shares of Common Stock would not affect a current common stockholder's rights as a stockholder, except for any dilutive effects of a potential increase in the number of outstanding shares of Common Stock to, among other things, earnings per share, book value per share, and the voting power of current holders of our Common Stock. The Authorized Common Stock Increase would not have any immediate dilutive effect on the proportionate voting power or other rights of existing stockholders until additional shares are issued.

As is true for shares presently authorized but unissued, the future issuance of Common Stock authorized by the Authorized Common Stock Increase may, among other things, decrease existing stockholders' percentage equity ownership and, depending on the price at which they are issued, could be dilutive to the voting rights of existing stockholders and have a negative effect on the market price of the Common Stock.

Impact of Preferred Stock on Certain Proposals

For additional information concerning the impact of Preferred Stock in connection with the Authorized Common Stock Increase, see "*PROPOSAL 5 — Approval Of An Amendment To Articles Of Incorporation Of the Company to Effect a Change of Its Corporate Name — Impact of Preferred Stock on Certain Proposal*" for more information.

Potential Anti-takeover Effects of the Authorized Share Increase

Release No. 34-15230 of the staff of the SEC requires disclosure and discussion of the effects of any action, including the proposals discussed herein, that may be used as an anti-takeover mechanism. Since the Authorized Common Stock Increase will provide that the number of authorized shares of Common Stock will be 350,000,000, the Authorized Common Stock Increase, if effected, will result in a relative increase in the number of authorized but unissued shares of our Common Stock vis-à-vis the outstanding shares of our Common Stock and, could, under certain circumstances, have an anti-takeover effect, although this is not the purpose or intent of our Board of Directors. A relative increase in the number of authorized shares of Common Stock could have other effects on our stockholders, depending upon the exact nature and circumstances of any actual issuances of authorized but unissued shares. A relative increase in our authorized shares could potentially deter takeovers, including takeovers that our Board of Directors has determined are not in the best interest of our stockholders, in that additional shares could be issued (within the limits imposed by applicable law and the NYSE American) in one or more transactions that could make a change in control or takeover more difficult. For example, we could issue additional shares without further

stockholder approval so as to dilute the stock ownership or voting rights of persons seeking to obtain control without our agreement. Similarly, the issuance of additional shares to certain persons allied with our management could have the effect of making it more difficult to remove our current management by diluting the stock ownership or voting rights of persons seeking to cause such removal. The Authorized Common Stock Increase therefore may have the effect of discouraging unsolicited takeover attempts. By potentially discouraging initiation of any such unsolicited takeover attempts, the Authorized Share Increase may limit the opportunity for our stockholders to dispose of their shares at the higher price generally available in takeover attempts or that may be available under a merger proposal.

We have not proposed the increase in the number of authorized shares of Common Stock with the intention of using the additional authorized shares for anti-takeover purposes, but we would be able to use the additional shares to oppose a hostile takeover attempt or delay or prevent changes in our control or our management. Although the Authorized Common Stock Increase has been prompted by business and financial considerations and not by the threat of any known or threatened hostile takeover attempt, stockholders should be aware that the effect of the Authorized Common Stock Increase could facilitate future attempts by us to oppose changes in our control and perpetuate our management, including transactions in which the stockholders might otherwise receive a premium for their shares over then current market prices. We cannot provide assurances that any such transactions will be consummated on favorable terms or at all, that they will enhance stockholder value, or that they will not adversely affect our business or the trading price of the Common Stock.

Consequences if Stockholder Approval for Proposal Is Not Obtained

If stockholder approval for this Proposal No. 6 is not obtained, we will not be able to file a certificate of amendment to our Articles of Incorporation to effect the Authorized Common Stock Increase, and our limited number of authorized shares of the Common Stock that are neither outstanding nor reserved for issuance could adversely affect our ability to raise capital through equity financings or engage in acquisitions or other transactions.

Interests of Directors and Executive Officers

Our directors and executive officers have no substantial interests, directly or indirectly, in the matters set forth herein regarding the proposed Authorized Common Stock Increase except to the extent of their ownership of shares of our Common Stock and any additional shares of Common Stock that will be available for grant under the 2020 Plan.

Vote Required to Approve the Authorized Common Stock Increase

Approval of the certificate of amendment to our Articles of Incorporation included as Appendix B, and to authorize our Board of Directors to effect the Authorized Common Stock Increase requires an affirmative vote of a majority of the voting power of the outstanding Common Stock and Preferred Stock entitled to vote on the proposal, voting together as a single class. See *"Impact of Preferred Stock on Certain Proposal"* for more information regarding the voting of the Preferred Stock.

Recommendation

OUR BOARD OF DIRECTORS UNANIMOUSLY RECOMMENDS THAT YOU VOTE FOR APPROVAL OF THE AMENDMENT TO THE COMPANY'S ARTICLES OF INCORPORATION TO INCREASE THE NUMBER OF AUTHORIZED SHARES OF COMMON STOCK.

PROPOSAL 7**THE ADJOURNMENT OF THE ANNUAL MEETING**

Our stockholders are being asked to consider and vote upon an adjournment of the 2022 Annual Meeting of Stockholders, if necessary, if a quorum is present, to solicit additional proxies if there are not sufficient votes in favor of approval of a proposed amendment to our Articles of Incorporation, as amended, to effectuate the Authorized Common Stock Increase Proposal. If we fail to receive a sufficient number of votes to approve the Authorized Common Stock Increase Proposal, we may propose to adjourn the 2022 Annual Meeting of Stockholders for a period of not more than thirty (30) days, for the purpose of soliciting additional proxies to approve the Authorized Common Stock Increase Proposal. We currently do not intend to propose adjournment of the 2022 Annual Meeting of Stockholders if there are sufficient votes in favor of the Authorized Common Stock Increase Proposal. If our stockholders approve this proposal, we could adjourn the 2022 Annual Meeting and use the additional time to solicit additional proxies, including the solicitation of proxies from our stockholders that have previously voted. Among other things, approval of this proposal could mean that, even if we had received proxies representing a sufficient number of votes to defeat the Authorized Common Stock Increase Proposal, we could adjourn the 2022 Annual Meeting without a vote on such proposals and seek to convince our stockholders to change their votes in favor of such proposal.

Vote Required

Approval of the adjournment of the 2022 Annual Meeting of Stockholders requires an affirmative vote of a majority of the voting power of Common Stock and Preferred Stock present in person or represented by proxy and entitled to vote at the 2022 Annual Meeting of Stockholders. See *"Impact of Preferred Stock on Certain Proposal"* for more information regarding the voting of the Preferred Stock.

THE BOARD OF DIRECTORS RECOMMENDS A VOTE TO APPROVE THE ADJOURNMENT OF THE ANNUAL MEETING, IF A QUORUM IS PRESENT, TO SOLICIT ADDITIONAL PROXIES IF THERE ARE NOT SUFFICIENT VOTES TO APPROVE PROPOSAL 6, AND PROXIES SOLICITED BY THE BOARD WILL BE VOTED IN FAVOR OF THE ADJOURNMENT UNLESS A STOCKHOLDER HAS INDICATED OTHERWISE ON THE PROXY.

EXECUTIVE COMPENSATION

We are a “smaller reporting company” and the following compensation disclosure is intended to comply with the requirements applicable to smaller reporting companies. Although the rules allow us to provide less detail about our executive compensation program, the Compensation Committee is committed to providing the information necessary to help stockholders understand its executive compensation-related decisions. Accordingly, this section includes supplemental narratives that describe the 2021 executive compensation program for our Named Executive Officer.

The following table summarizes all compensation awarded to, earned by or paid to Steven A. Shallcross, our Named Executive Officer, during the fiscal years presented below.

Name and Principal Position	Year	Salary (\$) ⁽¹⁾	Bonus (\$)	Options Awards (\$) ⁽²⁾	All Other Compensation(\$) ⁽³⁾	Total (\$)
Steven A. Shallcross	2021	\$ 584,775	\$365,625 ⁽⁴⁾	\$ 144,216	\$ 26,508	\$1,121,124
Chief Executive Officer and Chief Financial Officer	2020	\$ 565,000	\$350,000	\$ 120,257	\$ 26,992	\$1,062,249

- (1) Mr. Shallcross was appointed as our Chief Executive Officer on December 6, 2018. Mr. Shallcross’ annual salary was \$550,000 commencing December 6, 2018 and increased to \$565,000 and \$584,775 on December 5, 2019 and December 30, 2020, respectively.
- (2) Amount reflects the grant date fair value of the Named Executive Officer’s stock options, calculated in accordance with FASB ASC Topic 718. For a discussion of the assumptions used in calculating these values, see Note 5 to our consolidated financial statements. In December 2020 and December 2021, Mr. Shallcross was issued an option to purchase 450,000 and 650,000 shares of common stock, respectively; the awards vest monthly over 36 months.
- (3) The all other compensation column is comprised of vacation accrual paid, and the portion of medical, dental and vision premiums paid by us on behalf of our Named Executive Officers. These benefits are offered to all Synthetic Biologics’ employees who work at least 17.5 hours per week.
- (4) This bonus was earned in 2021 and paid in 2022.

Narrative Disclosure to Summary Compensation Table

Overview of Our Compensation Program

A. Philosophy and Objectives

The Compensation Committee seeks to attract and retain executive talent by offering competitive base salaries, bonuses and long-term incentives. The Compensation Committee’s philosophy is to provide a compensation package that attracts and retains superior executive talent and delivers higher rewards for superior performance and consequences for underperformance. It is also the Compensation Committee’s practice to provide a balanced mix of cash and equity-based compensation that aligns both the short and long-term interests of our executives with that of our stockholders. Our executive compensation program is based on the following philosophies and objectives:

- *Compensation Should Align with Stockholders’ Interests*— The Compensation Committee believes that executives’ interests should be aligned with those of the stockholders. Executives are granted stock options so that their total compensation is tied directly to the same value realized by our stockholders. Executive bonuses are tied directly to the value that we gain from an executive’s contribution to our success as a whole.
- *Compensation is Competitive* — The Compensation Committee seeks to provide a total compensation package that attracts, motivates and retains the executive talent that we need in order to maximize its return to stockholders. To accomplish this objective, executive compensation is reviewed annually to ensure that compensation levels are competitive and reasonable given our level of performance and other comparable companies with which we compete for talent.

- *Compensation Motivates and Rewards the Achievement of Goals*— Our executive compensation program is designed to appropriately reward both individual and collective performance that meets and exceeds our annual, long-term and strategic goals. To accomplish this objective, a substantial percentage of total compensation is variable, “at risk”, both through annual incentive compensation and the granting of long-term incentive awards.

B. Oversight of Executive Compensation

Role of the Compensation Committee

Pursuant to the terms of its charter, the Compensation Committee is responsible for the review of all aspects of our executive compensation program and makes decisions regarding the compensation of the Named Executive Officers. Our sole Named Executive Officer for the year ended December 31, 2021 was Steven Shallcross, our Chief Executive Officer who also serves as our Chief Financial Officer.

The Compensation Committee’s responsibilities include but are not limited to the following:

- Establishing on an annual basis the performance goals and objectives for purposes of determining the compensation of our Chief Executive Officer and other senior executive officers.
- Evaluating the Chief Executive Officer’s performance at least annually in light of those goals and objectives, and based upon these evaluations setting the compensation level for those officers.
- Reviewing the competitive position of, and making recommendations to, the Board of Directors with respect to the cash-based and equity-based compensation plans and our programs relating to compensation and benefits.
- Overseeing administration of our stock option plan and incentive compensation plans, making recommendations to the Board of Directors regarding the granting of options and incentives and otherwise assisting the Board of Directors in administering awards under these plans.
- Reviewing the financial performance and operations of our major benefit plans.

Additional information regarding the Compensation Committee’s responsibilities is set forth in its charter, which is posted on our website at www.syntheticbiologics.com.

Role of the Chief Executive Officer

Our Chief Executive Officer makes recommendations to the Compensation Committee regarding the compensation of our other Named Executive Officers, if any. The Chief Executive Officer does not participate in any discussions or processes concerning his own compensation and participates in a non-voting capacity in discussions or processes concerning the compensation of our other members of management. In addition to our Chief Executive Officer, as well as members of our management and consultants also attend Compensation Committee meetings from time to time and may take part in discussions of executive compensation.

C. Program Design

The Compensation Committee uses a simple and straightforward approach in compensating our Named Executive Officers in which base salary, annual incentives and stock options are the principal components. In addition, executive officers generally participate in the same benefit programs as other full-time employees.

Our executive compensation program is designed to provide executives with a reasonable level of fixed compensation through base salary and benefits, and an opportunity to earn incentive compensation through the annual and long-term incentive programs based on a mix of individual and corporate performance, individual performance and the value of our stock. We do not currently have formal policies for allocating compensation among base salary, performance-based bonus and equity awards. Instead, our Compensation Committee uses its judgment to establish a total direct compensation opportunity for each Named Executive Officer that is a mix of current, short-term and long-term incentive compensation and cash and

non-cash compensation that it believes appropriate to achieve the goals of our executive compensation program and corporate objectives. Our target pay mix places a significant emphasis on performance based variable compensation. The incentive plans are designed to pay well when performance meets or exceeds expectations and pay little or no incentive if performance is below expectations.

In designing and implementing our executive compensation program, our Compensation Committee considers our company's operating and financial objectives, including our risk profile, and the effect that its executive compensation decisions will have on encouraging our executive officers to take an appropriate level of business risk consistent with our overall goal of enhancing long-term stockholder value. In particular, the Compensation Committee considers those business risks identified in our risk factors and the known trends and uncertainties identified in our management discussion and analysis and considers how our executive compensation program serves to achieve our operating and financial objectives while at the same time mitigating any incentives for our executive officers to engage in excessive risk-taking to achieve short-term results that may not be sustainable in the long-term.

Target compensation comprises base salary and performance based variable compensation, including targeted cash bonus amounts and equity-based compensation. As an executive's level of responsibility increases, the Compensation Committee generally targets a greater portion of the executive's compensation to be contingent upon performance in the form of variable compensation. For example, historically our Named Executive Officers have a higher percentage of compensation at risk (and thus greater upside and downside potential) relative to our other employees. The Compensation Committee believes this is appropriate because our Named Executive Officers have the greatest influence on our performance.

During 2021, the salary for our Chief Executive Officer who also serves as our Chief Financial Officer was 52% of his target compensation package and performance based variable compensation comprised 45% of his target compensation. Of the performance based variable compensation 28% was equity-based compensation and 72% was his target cash bonus.

D. Compensation Review Process

The Compensation Committee annually reviews compensation for our Named Executive Officers. The Compensation Committee considers the executive's role and responsibilities, corporate and individual performance, and industry-wide compensation practices and trends for other companies of similar size. This approach is used to set base salaries, bonuses, stock option award levels and the mix of compensation elements.

The Compensation Committee strives to attract and retain the most highly qualified executive officers in an extremely competitive market. Our Compensation Committee believes that it is important when making its compensation decisions to be informed as to the competitive market for executive talent, including the current practices of comparable public companies with which we compete for such talent. Consequently, our Compensation Committee primarily reviewed a report from Meridian Compensation Partners, LLC that had been provided to the Compensation Committee. With respect to its analysis of the compensation of the Chief Executive Officer, the Compensation Committee took into account that our Chief Executive Officer also serves as our Chief Financial Officer, which is not typical for most companies.

While the Compensation Committee does take into consideration the data it reviewed, the Committee does not attempt to benchmark our executive compensation against any specific level, range, or percentile of compensation paid at any other companies, does not apply any specific measures of internal or external pay equity in reaching its conclusions, and does not employ tally sheets, wealth accumulation, or similar tools in its analysis. Rather, the Compensation Committee reviews compensation data from the survey and report mentioned above, as reference points in making executive compensation decisions especially in light of the fact that our Chief Executive Officer is also performing the role of Chief Financial Officer. The Compensation Committee's general aim is for our compensation to remain competitive with the market, falling above or below the median of the market data as appropriate based on corporate and individual executive performance, and other factors deemed to be appropriate. Competitive market positioning is only one of several factors, as described below, that the Compensation Committee considers in making compensation decisions, and therefore individual Named Executive Officer compensation may fall at varying levels as compared to the market data.

Our Compensation Committee values the opinion of our stockholders. At our 2019 Annual Meeting of Stockholders approximately 59% of the votes that were cast (excluding broker non-votes) were cast in favor of our say-on-pay proposal adopting a resolution approving the compensation paid to our Named Executive Officers as disclosed in our proxy statement for our 2019 Annual Meeting of Stockholders. In addition, at our 2019 Annual Meeting of Stockholders approximately the greatest number of votes were cast in favor of a three (3) year frequency for holding an advisory vote on executive compensation. Our Compensation Committee decided not to make any significant changes to the executive compensation policies; however, our Compensation Committee continues to monitor and evaluate our compensation program in light of our stockholders' views and our transforming business needs.

E. Components of Compensation

We provide four compensation components to Named Executive Officers:

- base salary;
- bonuses based on the achievement of specified goals and objectives;
- long-term incentives; and
- benefits

1. Base Salaries

We provide our Named Executive Officers a base salary commensurate with their position, responsibilities and experience. In setting the base salary, the Compensation Committee considers the scope and accountability associated with each Named Executive Officer's position and such factors as performance and experience of each Named Executive Officer. We design base pay to provide the essential reward for an employee's work that is required to be competitive in attracting talent. Once base pay levels are initially determined, increases in base pay may be provided to recognize an employee's specific performance achievements or expansion of responsibilities. The base salaries are targeted to be competitive with other similar biotechnology companies. Base salaries for the Named Executive Officers are set by their respective employment contracts and are reviewed annually by the Compensation Committee. Based on the analysis of the peer group and other comparative research performed by the Committee, the Committee was able to compare the base salary for the Chief Executive Officer who also serves as our Chief Financial Officer, including base salary, long-term incentives and bonuses. Upon the appointment of Mr. Shallcross to serve as our Chief Executive Officer in December 2018 and in light of the fact that he also serves as our Chief Financial Officer, it was determined that his overall compensation levels were not competitive with the peer group and therefore his annual base salary was increased to \$550,000, which was the same annual base salary as that of our prior Chief Executive Officer. Mr. Shallcross' employment agreement, dated December 6, 2018, was amended on December 5, 2019 to reflect a 3% merit adjustment to Mr. Shallcross' base salary, increasing his annual base salary to \$565,000 and further amended on December 31, 2020 to reflect a 3.5% merit adjustment to Mr. Shallcross' base salary, increasing his annual base salary to \$584,775. Pursuant to his current employment agreement, which was entered into on January 3, 2022, after expiration of the prior agreement, Mr. Shallcross' base salary is \$585,000.

The 2020 and current base salary for our Chief Executive Officer who also serves as our Chief Financial Officer is:

Named Executive Officer	2020 Base Salary	2021 Base Salary
Steven A. Shallcross, Chief Executive Officer and Chief Financial Officer	\$ 565,000	\$ 584,775

2. Bonuses

The Compensation Committee also makes recommendations to the full Board of Directors for determining bonuses. The Compensation Committee also used information from the report and analysis discussed above in determining bonus as well as its own research of peer company compensation. For the year ended December 31, 2021, the Compensation Committee approved a \$365,000 cash bonus and an option grant to purchase 65,000 shares of Common Stock for Mr. Shallcross.

The employment agreement with Mr. Shallcross that was in effect during 2021 provided that he was eligible for a bonus of up to seventy five percent (75%) of his base salary (a "Target Bonus") in cash or equity and Mr. Shallcross received a cash bonus with a value equal to approximately eighty-three (83%) of his Target Bonus. The bonuses are to be rewarded in the discretion of the Compensation Committee and the Board of Directors, based on a review of achievements for the year. The Compensation Committee believes that the granting of a bonus is appropriate to motivate the Named Executive Officers. The Compensation Committee focuses on individual performance, which enables the Compensation Committee to differentiate among executives and emphasize the link between personal performance and compensation. Although the Compensation Committee does not use any fixed formula in determining bonuses, it does link bonuses to objectives the Compensation Committee deems important such as financings, reduction in burn rate and achievement of clinical milestones.

3. Long-Term Incentives

The Compensation Committee believes that a substantial portion of the Named Executive Officer's compensation should be awarded in equity-based compensation since equity-based compensation is directly linked to the interests of stockholders. The Compensation Committee has elected to grant stock options to the Named Executive Officers and other key employees as the primary long-term incentive vehicle. In making this determination, the Compensation Committee considered a number of factors including: the accounting impact, potential value of stock option grants versus other equity instruments and cash incentives, and the alignment of equity participants with stockholders. The Compensation Committee determined to grant stock options to:

- enhance the link between the creation of stockholder value and executive compensation;
- provide an opportunity for equity ownership;
- act as a retention tool; and
- provide competitive levels of total compensation.

Mr. Shallcross' 2020 and 2021 bonuses included a grant of options exercisable for 45,000 and 65,000 shares of Common Stock, respectively. The stock options granted vest in equal monthly installments over a three-year term and are subject to the recipient's continued employment, therefore acting as a significant retention incentive.

The Compensation Committee reviews the performance, potential burn rates and dilution levels to create an option pool that may be awarded to employee participants. Grants to the Named Executive Officers are determined by the Compensation Committee after reviewing market data, including the reports and analysis discussed above and after considering each executive's performance, role and responsibilities.

The Compensation Committee does not seek to time equity grants to take advantage of information, either positive or negative, about our company that has not been publicly disclosed. Option grants are effective on the date the award determination is made by the Compensation Committee and the exercise price of options is the closing market price of the Common Stock on the business day of the grant or, if the grant is made on a weekend or holiday, on the prior business day.

4. Benefits

Named Executive Officers are eligible to participate in our standard medical, dental, vision, disability insurance, life insurance plans and other health and welfare plans provided to other full-time employees.

Each of our Named Executive Officers are entitled to participate in our 401(k) contributory defined contribution plan.

Pension Benefits

We do not currently provide pension arrangements or post-retirement health coverage for our employees, although we may consider such benefits in the future.

Each of our Named Executive Officers are eligible to participate in our 401(k) contributory defined contribution plan. Pursuant to our 401(k) plan, all eligible employees, including our Named Executive Officers, are provided with a means of saving for their retirement. We currently match all participating employee contributions up to maximum of 4 percent of compensation which vest immediately.

Nonqualified Deferred Compensation

We do not provide any nonqualified deferred compensation plans to our employees, although we may consider such benefits in the future.

Conclusion

Attracting and retaining talented and motivated management and key employees is essential to creating long-term stockholder value. Offering a competitive, performance-based compensation program with a substantial equity component helps to achieve this objective by aligning the interests of the executive officers and other key employees with those of stockholders. We believe that our compensation program met these objectives and that our 2021 compensation program was appropriate in light of the challenges we and our employees face.

Risk Analysis of Our Compensation Program

Our Compensation Committee has reviewed our compensation policies as generally applicable to our employees and believes that our policies do not encourage excessive or inappropriate risk taking and that the level of risk that they do encourage is not reasonably likely to have a material adverse effect on us. As part of its assessment, the Compensation Committee considered, among other factors, the allocation of compensation among base salary and short- and long-term compensation, and our approach to establishing company-wide and individual financial, operational and other performance goals.

Outstanding Equity Awards at Fiscal Year End

The table below reflects all outstanding equity awards made to each of the Named Executive Officers that are outstanding at December 31, 2021. We currently grant stock-based awards pursuant to our 2020 Stock Incentive Plan (the “2020 Stock Plan”) and have outstanding awards under our 2001 Stock Incentive Plan (the “2001 Stock Plan”), 2007 Stock Incentive Plan (the “2007 Stock Plan”) and 2010 Stock Incentive Plan (the “2010 Stock Plan”).

Name	Grant Date ⁽¹⁾	Number of Securities Underlying Unexercised Options Exercisable	Number of Securities Underlying Unexercised Options Unexercisable	Option Exercise Price (\$)	Option Expiration Date
Steven Shallcross	12/23/21	—	65,000	\$ 3.30	12/23/28
	12/30/20	15,000	30,000	\$ 4.20	12/30/27
	12/06/19	30,000	15,000	\$ 4.20	12/04/26
	12/20/18	20,000	—	\$ 6.90	12/06/25
	12/20/17	1,572	—	\$182.00	12/20/24
	11/30/16	1,429	—	\$280.00	11/30/23
	12/04/15	286	—	\$966.00	12/04/22
	06/01/15	2,572	—	\$756.00	06/01/25

(1) Shallcross Options will vest pro rata, on a monthly basis, over 36 months.

Employment Agreements

Steven A. Shallcross, Chief Executive Officer and Chief Financial Officer

On January 3, 2022, we entered into a three-year employment agreement with Steven A. Shallcross (the “2022 Employment Agreement”). The 2022 Employment Agreement replaced the prior employment

agreement with the us that Mr. Shallcross entered into on December 6, 2018, as amended December 5, 2019 (the "Amended Employment Agreement"). The material terms of the Employment Agreement are set forth below.

Pursuant to the 2022 Employment Agreement, Mr. Shallcross is entitled to an annual base salary of \$585,000 and an annual cash performance bonus of up to fifty percent (50%) of his annual base salary as well as discretionary annual equity awards pursuant to the Company's incentive plans. The annual bonus will be based upon the assessment of the Board of Directors of Mr. Shallcross's performance. The 2022 Employment Agreement also includes confidentiality obligations and inventions assignments by Mr. Shallcross and non-solicitation and non-competition provisions.

The 2022 Employment Agreement has a stated term of three years but may be terminated earlier pursuant to its terms. If Mr. Shallcross's employment is terminated for any reason, he or his estate as the case may be, will be entitled to receive the unpaid base salary through the date of termination and accrued vacation, any unpaid annual bonus earned with respect to any calendar year ending on or preceding the date of termination, expense reimbursement and any other entitlements accrued by him to the extent not previously paid (the "Accrued Obligations"); provided, however, that if his employment is terminated (i) by the us without Cause or by Mr. Shallcross for Good Reason (as each is defined in the Employment Agreement) then, subject to him executing a general release in form acceptable to the us that becomes effective, in addition to paying the Accrued Obligations, (a) we will continue to pay his then current base salary and if the Executive timely elects continued coverage under COBRA, the Company will continue to provide benefits at least equal to those that were provided at the time of termination for a period of twelve (12) months and (b) all unvested equity awards will vest and he shall have the right to exercise any such vested equity awards until the earlier of eighteen (18) months after termination or the remaining term of the awards; or (ii) by reason of his death or Disability (as defined in the Employment Agreement), then in addition to paying the Accrued Obligations, Mr. Shallcross or his estate would have the right to exercise any vested options until the earlier of six (6) months after termination or the remaining term of the awards. In such event, if Mr. Shallcross commenced employment with another employer and becomes eligible to receive medical or other welfare benefits under another employer-provided plan, the medical and other welfare benefits to be provided by the Company as described herein would terminate.

The 2022 Employment Agreement provides that upon the closing of a "Change in Control" (as defined in the 2022 Employment Agreement), all unvested options shall immediately vest and the time period that Mr. Shallcross will have to exercise all vested stock options and other awards that Mr. Shallcross may have will be equal to the shorter of: (i) eighteen (18) months after termination, or (ii) the remaining term of the award(s). If within one (1) year after the occurrence of a Change in Control, Mr. Shallcross terminates his employment for "Good Reason" or the Company terminates Mr. Shallcross's employment for any reason other than death, disability or Cause, Mr. Shallcross will be entitled to receive: (i) the portion of his base salary for periods prior to the effective date of termination accrued but unpaid (if any); (ii) all unreimbursed expenses (if any); (iii) an aggregate amount (the "Change in Control Severance Amount") equal to two (2) times the sum of his base salary plus an amount equal to the bonus that would be payable if the "target" level performance were achieved under the Company's annual bonus plan (if any) in respect of the fiscal year during which the termination occurs (or the prior fiscal year if bonus levels have not yet been established for the year of termination) subject to him executing a general release in form acceptable to the Company that becomes effective. If within two (2) years after the occurrence of a Change in Control, Mr. Shallcross terminates his employment for "Good Reason" or the Company terminates Mr. Shallcross's employment for any reason other than death, disability or Cause, Mr. Shallcross will be entitled to also receive for the period of two (2) consecutive years commencing on the date of such termination of his employment, medical, dental, life and disability insurance coverage for him and the members of his family that are not less favorable to him than the group medical, dental, life and disability insurance coverage carried by the Company for him subject to him executing a general release in form acceptable to the Company that becomes effective. The Change in Control Severance Amount is to be paid in a lump sum if the Change in Control event constitutes a "change in the ownership" or a "change in the effective control" of the Company or a "change in the ownership of a substantial portion of a corporation's assets" (each within the meaning of Section 409A of the Internal Revenue Code ("Rule 409A")), or in 48 substantially equal payments, if the Change in Control event does not so comply with Section 409A.

Executive Officer Who is Not A Director

On March 22, 2022, we entered into an employment agreement with Frank Tufaro (the “Tufaro Employment Agreement”) to serve as our Chief Operating Officer of the Company. The material terms of the Employment Agreement are set forth below.

Prior to joining the Company, Mr. Tufaro, age 67, served as President of Opa Therapeutics Inc. from May 2020 until March 2022. Opa Therapeutics is a privately held biologics company. From January 2010 through December 2019, Mr. Tufaro served as Chief Executive Officer of DNatrix. DNatrix is a privately held biotech company developing virus-driven immunotherapies to treat cancer. Mr. Tufaro received a Ph.D. in Molecular Biology and a Bachelor of Science in Biology from McGill University.

Pursuant to the Tufaro Employment Agreement, Mr. Tufaro receives an annual base salary of \$375,000 and is eligible to earn an annual performance bonus of up to forty percent (40%) of his annual base salary. The annual bonus will be based upon the assessment of the Board of Directors of Mr. Tufaro’s performance and our attainment of targeted goals set by the Board of Directors. In addition, Mr. Tufaro is also be eligible to receive annual equity awards pursuant to our incentive equity plans, such awards (including the number and type of awards), if any, will be in the sole discretion of the Board. The Tufaro Employment Agreement also includes confidentiality obligations and inventions assignments by Mr. Tufaro and non-solicitation and non-competition provisions.

The Tufaro Employment Agreement has a stated term of three (3) years but may be terminated earlier pursuant to its terms. If Mr. Tufaro’s employment is terminated for any reason, he or his estate as the case may be, will be entitled to receive the accrued base salary, any unpaid annual bonus earned with respect to any calendar year ending on or preceding the date of termination, vacation pay, expense reimbursement and any other entitlements accrued by him to the extent not previously paid (the “Accrued Obligations”); provided, however, that if his employment is terminated (i) by us without Cause or by Mr. Tufaro for Good Reason (as each is defined in the Employment Agreement) then in addition to paying the Accrued Obligations, (a) we will continue to pay his then current base salary and continue to provide benefits at least equal to those that were provided at the time of termination for a period of six (6) months and (b) all unvested stock options and other equity awards will immediately vest and he will be entitled to exercise any vested equity awards until the earlier of six (6) months after termination or the remaining term of the awards; or (ii) by reason of his death or Disability (as defined in the Employment Agreement), then in addition to paying the Accrued Obligations, Mr. Tufaro, or his estate as the case may be, would have the right to exercise any vested options until the earlier of six (6) months after termination or the remaining term of the awards. If Mr. Tufaro commenced employment with another employer and becomes eligible to receive medical or other welfare benefits under another employer-provided plan, the medical and other welfare benefits to be provided by the Company as described herein would terminate.

The Tufaro Employment Agreement provides that upon the closing of a “Change in Control” (as defined in the Employment Agreement), all unvested stock options and other equity awards will immediately vest and the time period that Mr. Tufaro will have to exercise all vested stock options and other awards that Mr. Tufaro may have will be equal to the shorter of: (i) eighteen (18) months after termination, or (ii) the remaining term of the award(s). If within one (1) year after the occurrence of a Change in Control, Mr. Tufaro terminates his employment for “Good Reason” or the Company terminates Mr. Tufaro’s employment for any reason other than death, Disability or Cause, Mr. Tufaro will be entitled to receive: (a) the portion of his base salary for periods prior to the effective date of termination accrued but unpaid (if any); (b) all unreimbursed expenses (if any); and (c) an aggregate amount (the “Change in Control Severance Amount”) equal to two (2) times the sum of his base salary plus an amount equal to the bonus that would be payable if the “target” level performance were achieved under our annual bonus plan (if any) in respect of the fiscal year during which the termination occurs (or the prior fiscal year if bonus levels have not yet been established for the year of termination). If within two (2) years after the occurrence of a Change in Control, Mr. Tufaro terminates his employment for “Good Reason” or we terminate Mr. Tufaro’s employment for any reason other than death, Disability or Cause, Mr. Tufaro will be entitled to also receive for the period of two (2) consecutive years commencing on the date of such termination of his employment, medical, dental, life and disability insurance coverage for him and the members of his family that are not less favorable to him than the group medical, dental, life and disability insurance coverage carried by the Company for him. The Change in Control Severance Amount is to be paid in a lump sum if the Change in

Control event constitutes a “change in the ownership” or a “change in the effective control” of the Company or a “change in the ownership of a substantial portion of a corporation’s assets” (each within the meaning of Section 409A of the Internal Revenue Code (“Rule 409A”)), or in 48 substantially equal payments, if the Change in Control event does not so comply with Section 409A.

SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

The following table sets forth information, as of August 3, 2022, or as otherwise set forth below, with respect to the beneficial ownership of our Common Stock (i) all persons known to us to be the beneficial owners of more than 5% of the outstanding shares of our Common Stock; (ii) each of our directors and our named executive officers named in the Summary Compensation Table; and (iii) all of our directors and our executive officer as a group.

Name and Address of Beneficial Ownership ⁽²⁾	Shares Owned ⁽¹⁾	
	Number of Shares Owned	Percentages of Shares ⁽³⁾
Jeffrey J. Kraws ⁽⁴⁾	57,053	*
Steven Shallcross ⁽⁵⁾	120,025	*
Jeffrey Wolf ⁽⁶⁾	56,399	*
John Monahan ⁽⁷⁾	32,313	*
All current officers and directors as a group (5 persons) ⁽⁸⁾	346,435	2.15%

* represents less than 1% of our Common Stock

(1) The address for each officer and directors is 9605 Medical Center, Suite 270, Rockville, Maryland 20850.

(2) Beneficial ownership is determined in accordance with SEC rules and generally includes voting or investment power with respect to securities. Except as indicated in the footnotes to the table, to the knowledge of the Company, the persons named in the table have sole voting and investment power with respect to all shares of Common Stock, options and/or warrants shown as beneficially owned by them, subject to community property laws, where applicable. Pursuant to the rules of the SEC, the number of shares of our Common Stock deemed outstanding includes shares issuable pursuant to options held by the respective person or group that are currently exercisable or may be exercised within 60 days of August 3, 2022.

(3) As of August 3, 2022, the Company had 15,844,123 shares of Common Stock outstanding.

(4) Includes 56,399 shares issuable upon exercise of options held by Mr. Kraws that are exercisable within the 60-day period following August 3, 2022. Does not include an additional 13,333 shares issuable upon exercise of options held by Mr. Kraws that are not exercisable within the 60-day period following August 3, 2022.

(5) Includes 109,608 shares issuable upon exercise of options held by Mr. Shallcross and 417 shares of Common Stock issuable upon exercise of options held by Mrs. Shallcross (Mr. Shallcross's wife) that are exercisable within the 60-day period following August 3, 2022. Does not include an additional 71,250 shares issuable upon exercise of options held by Mr. Shallcross and 2,583 issuable upon exercise of options held by Mrs. Shallcross that are not exercisable within the 60-day period following August 3, 2022.

(6) Includes 56,399 shares issuable upon exercise of options held by Mr. Wolf that are exercisable within the 60-day period following August 3, 2022. Does not include an additional 13,333 shares issuable upon exercise of options held by Mr. Wolf that are not exercisable within the 60-day period following August 3, 2022.

(7) Includes 32,313 shares issuable upon exercise of options held by Dr. Monahan that are exercisable within the 60-day period following August 3, 2022. Does not include an additional 5,208 shares issuable upon exercise of options held by Dr. Monahan that are not exercisable within the 60-day period following August 3, 2022.

(8) Includes 80,645 shares of Common Stock issued to Mr. Tufaro in connection with the acquisition of VCN Biosciences, L.S.

Security Ownership of Certain Beneficial Owners

As of August 3, 2022, no person or entity reported being the beneficial owner of more than 5% of the outstanding shares of our Common Stock on such date.

The holder of the Series C Convertible Preferred Stock and Series D Convertible Preferred Stock is only entitled to vote on the Name Change Proposal, the Authorized Common Stock Increase Proposal and the Adjournment Proposal. The holder of the Series C Convertible Preferred Stock outstanding on the Record Date is entitled to a number of votes equal to the number of shares of Common Stock issuable upon conversion of such shares (whether or not such shares are then convertible) or an aggregate of 1,803,279 votes but has agreed to only submit 1,549,295 of the votes relating to the Series C Convertible Preferred Stock that they would otherwise be entitled to vote. The holder of record of our Series D Convertible Preferred Stock is entitled to 20,000 votes per share of Series D Convertible Preferred Stock or an aggregate of 2,000,000,000 votes; provided that the shares voted by holders of our Series D Convertible Preferred Stock shall be counted by us in the same proportion as the aggregate shares of Common Stock and Series C Convertible Preferred Stock are voted (excluding any shares of Common Stock that are noted voted). The Series C Convertible Preferred Stock and the Series D Convertible Preferred Stock are not entitled to convert such shares of Series C Convertible Preferred Stock and Series D Convertible Preferred Stock if it would exceed a beneficial ownership limitation of 4.99% of our outstanding shares of common stock.

CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS

Pursuant to our charter, our Audit Committee shall review on an on-going basis for potential conflicts of interest, and approve if appropriate, all our “Related Party Transactions” as required by Section 120 of the NYSE American Company Guide. For purposes of the Audit Committee Charter, “Related Party Transactions” shall mean those transactions required to be disclosed pursuant to SEC Regulation S-K, Item 404.

The Board of Directors undertook a review of the independence of the members of the Board of Directors and considered whether any director has a material relationship with our company that could compromise his or her ability to exercise independent judgment in carrying out his or her responsibilities. Based upon information requested from and provided by each director concerning their background, employment and affiliations, including family relationships, the Board of Directors has determined that Mr. Kraws, Dr. Monahan and Mr. Wolf are independent directors.

Except as disclosed under “Executive Compensation,” there were no related party transactions during the two year’s ended December 31, 2021 or the current year.

AVAILABILITY OF REPORT ON FORM 10-K

Our audited consolidated financial statements are included in our Annual Report on Form 10-K for the year ended December 31, 2021 filed with the SEC on March 16, 2022. Upon your written request, we will provide to you a complimentary copy of our 2021 Annual Report on Form 10-K as filed with the SEC. Your request should be mailed to the Corporate Secretary, Synthetic Biologics, Inc., 9605 Medical Center Drive, Suite 270, Rockville, Maryland 20850. A complimentary copy may also be obtained at the internet website maintained by the SEC at www.sec.gov, and by visiting our website at www.syntheticbiologics.com and clicking on “Investors,” then on “Annual Meeting Materials.”

NOTICE REGARDING DELIVERY OF STOCKHOLDER DOCUMENTS (“HOUSEHOLDING” INFORMATION)

The SEC has adopted rules that permit companies and intermediaries (e.g., brokers) to satisfy the delivery requirements for proxy statements or other annual meeting materials with respect to two or more stockholders sharing the same address by delivering a single proxy statement or other annual meeting materials addressed to those stockholders. This process, which is commonly referred to as “householding,” potentially means extra convenience for stockholders and cost savings for companies and intermediaries. A number of brokers and other intermediaries with account holders who are our stockholders may be householding our proxy materials, including this Proxy Statement. In that event, a single proxy statement will be delivered to multiple stockholders sharing an address unless contrary instructions have been received from the affected stockholders. Once you have received notice from your broker or other intermediary that it will be householding communications to your address, householding will continue until you are notified otherwise or until you revoke your consent, which is deemed to be given unless you inform the broker or other intermediary otherwise when you receive or received the original notice of householding. If, at any time, you no longer wish to participate in householding and would prefer to receive a separate proxy statement and other annual meeting materials, please notify your broker or other intermediary to discontinue householding and direct your written request to receive a separate proxy statement and other annual meeting materials to the Corporate Secretary, Synthetic Biologics, Inc., 9605 Medical Center Drive, Suite 270, Rockville, Maryland 20850 or by calling us at (301) 417-4364. Stockholders who currently receive multiple copies of the Proxy Statement at their addresses and would like to request householding of their communications should contact their broker or other intermediary.

APPRAISAL RIGHTS

Under the Nevada Revised Statutes, our stockholders are not entitled to appraisal or dissenter’s rights with respect to any of the proposals, and we will not independently provide our stockholders with any such rights.

STOCKHOLDER PROPOSALS FOR THE 2023 ANNUAL MEETING

Stockholder proposals which are intended to be presented at the 2023 Annual Meeting of Stockholders pursuant to SEC Rule 14a-8 must be received by the Company by April 18, 2023.

A stockholder who intends to present business, including the nomination of a director, at the 2023 Annual Meeting of Stockholders other than pursuant to Rule 14a-8, must currently comply with the requirements set forth in our Nominations Committee's charter, which requires notice of not less than 120 days prior to the anniversary of the preceding year's annual meeting, which in this case means June 2, 2023, and contains additional requirements about advance notice required of stockholder proposals and director nominations. Stockholders should consult our Nominations Committee's charter to ensure that all of the specific requirements of such notice are met.

AVAILABLE INFORMATION ON CORPORATE GOVERNANCE AND SEC FILINGS

Through our website (www.syntheticbiologics.com), we make available, free of charge, our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, all amendments to those reports, and other filings with the SEC, as soon as reasonably practicable after they are electronically filed with, or furnished to, the SEC. We also make the following documents available on our website: the Audit Committee Charter; the Compensation Committee Charter; the Nominations Committee Charter; our Code of Conduct; and our Code of Ethics for Financial Management. You may also obtain a copy of any of the foregoing documents, free of charge, if you submit a written request to the Corporate Secretary, Synthetic Biologics, Inc., 9605 Medical Center Drive, Suite 270, Rockville, Maryland 20850.

No person is authorized to give any information or make any representation other than that contained in this Proxy Statement, and if given or made, such information may not be relied upon as having been authorized.

MISCELLANEOUS

The Board of Directors knows of no other business to be presented at the 2022 Annual Meeting. If, however, other matters properly do come before the 2022 Annual Meeting, it is intended that the proxies in the accompanying form will be voted thereon in accordance with the judgment of the person or persons holding such proxies.

**YOU ARE URGED TO CAST YOUR VOTE AS INDICATED IN THE PROXY MATERIALS.
PROMPT RESPONSE WILL GREATLY FACILITATE ARRANGEMENTS FOR THE 2022
ANNUAL
MEETING, AND YOUR COOPERATION WILL BE APPRECIATED.**

/s/ Steven A. Shallcross

Chief Executive Officer, Chief
Financial Officer and Director
August 16, 2022

APPENDIX A



BARBARA K. CEGAVSKE
Secretary of State
202 North Carson Street
Carson City, Nevada 89701-4201
(775) 684-5708
Website: www.nvsos.gov

Profit Corporation: Certificate of Amendment (PURSUANT TO NRS 78.380 & 78.385/78.390) Certificate to Accompany Restated Articles or Amended and Restated Articles (PURSUANT TO NRS 78.403) Officer's Statement (PURSUANT TO NRS 80.030)
--

TYPE OR PRINT - USE DARK INK ONLY - DO NOT HIGHLIGHT

1. Entity information:	Name of entity as on file with the Nevada Secretary of State: <input style="width: 90%;" type="text" value="Synthetic Biologics, Inc."/>
	Entity or Nevada Business Identification Number (NVID): <input style="width: 150px;" type="text" value="E0776232008-6"/>
2. Restated or Amended and Restated Articles: (Select one) (If <u>amending and restating only</u> , complete section 1, 2 3, 5 and 6)	<input type="checkbox"/> Certificate to Accompany Restated Articles or Amended and Restated Articles <input type="checkbox"/> Restated Articles - No amendments; articles are restated only and are signed by an officer of the corporation who has been authorized to execute the certificate by resolution of the board of directors adopted on: <input style="width: 100px;" type="text"/> The certificate correctly sets forth the text of the articles or certificate as amended to the date of the certificate. <input type="checkbox"/> Amended and Restated Articles <small>* Restated or Amended and Restated Articles must be included with this filing type.</small>
3. Type of Amendment Filing Being Completed: (Select only one box) (If amending, complete section 1, 3, 5 and 6.)	<input type="checkbox"/> Certificate of Amendment to Articles of Incorporation (Pursuant to NRS 78.380 - Before Issuance of Stock) The undersigned declare that they constitute at least two-thirds of the following: (Check only one box) <input type="checkbox"/> incorporators <input type="checkbox"/> board of directors The undersigned affirmatively declare that to the date of this certificate, no stock of the corporation has been issued <input checked="" type="checkbox"/> Certificate of Amendment to Articles of Incorporation (Pursuant to NRS 78.385 and 78.390 - After Issuance of Stock) The vote by which the stockholders holding shares in the corporation entitling them to exercise at least a majority of the voting power, or such greater proportion of the voting power as may be required in the case of a vote by classes or series, or as may be required by the provisions of the articles of incorporation* have voted in favor of the amendment is: <input style="width: 100px;" type="text" value="Over 50%"/> <input type="checkbox"/> Officer's Statement (foreign qualified entities only) - Name in home state, if using a modified name in Nevada: <input style="width: 250px;" type="text"/> Jurisdiction of formation: <input style="width: 150px;" type="text"/> Changes to takes the following effect: <input type="checkbox"/> The entity name has been amended. <input type="checkbox"/> Dissolution <input type="checkbox"/> The purpose of the entity has been amended. <input type="checkbox"/> Merger <input type="checkbox"/> The authorized shares have been amended. <input type="checkbox"/> Conversion <input type="checkbox"/> Other: (specify changes) <input style="width: 250px;" type="text"/> <small>* Officer's Statement must be submitted with either a certified copy of or a certificate evidencing the filing of any document, amendatory or otherwise, relating to the original articles in the place of the corporations creation.</small>

This form must be accompanied by appropriate fees.

 Page 1 of 2
 Revised: 1/1/2019



BARBARA K. CEGAVSKE
Secretary of State
202 North Carson Street
Carson City, Nevada 89701-4201
(775) 684-5708
Website: www.nvsos.gov

Profit Corporation:
Certificate of Amendment (PURSUANT TO NRS 78.380 & 78.385/78.390)
Certificate to Accompany Restated Articles or Amended and
Restated Articles (PURSUANT TO NRS 78.403)
Officer's Statement (PURSUANT TO NRS 80.030)

4. Effective Date and Time: (Optional)	Date: <input type="text"/> Time: <input type="text"/> (must not be later than 90 days after the certificate is filed)				
5. Information Being Changed: (Domestic corporations only)	Changes to takes the following effect: <input checked="" type="checkbox"/> The entity name has been amended. <input type="checkbox"/> The registered agent has been changed. (attach Certificate of Acceptance from new registered agent) <input type="checkbox"/> The purpose of the entity has been amended. <input type="checkbox"/> The authorized shares have been amended. <input type="checkbox"/> The directors, managers or general partners have been amended. <input type="checkbox"/> IRS tax language has been added. <input type="checkbox"/> Articles have been added. <input type="checkbox"/> Articles have been deleted. <input type="checkbox"/> Other. The articles have been amended as follows: (provide article numbers, if available) Article 1. Entity Information: Theriva Biologics, Inc. (attach additional page(s) if necessary)				
6. Signature: (Required)	<table border="0"> <tr> <td>X _____ Signature of Officer or Authorized Signer</td> <td>Steven A. Shallcross, CEO and CFO Title</td> </tr> <tr> <td>X _____ Signature of Officer or Authorized Signer</td> <td>_____ Title</td> </tr> </table> <p><small>*If any proposed amendment would alter or change any preference or any relative or other right given to any class or series of outstanding shares, then the amendment must be approved by the vote, in addition to the affirmative vote otherwise required, of the holders of shares representing a majority of the voting power of each class or series affected by the amendment regardless to limitations or restrictions on the voting power thereof.</small></p>	X _____ Signature of Officer or Authorized Signer	Steven A. Shallcross, CEO and CFO Title	X _____ Signature of Officer or Authorized Signer	_____ Title
X _____ Signature of Officer or Authorized Signer	Steven A. Shallcross, CEO and CFO Title				
X _____ Signature of Officer or Authorized Signer	_____ Title				
Please include any required or optional information in space below: (attach additional page(s) if necessary)					

This form must be accompanied by appropriate fees.

APPENDIX B



BARBARA K. CEGAVSKE
 Secretary of State
 202 North Carson Street
 Carson City, Nevada 89701-4201
 (775) 684-5708
 Website: www.nvsos.gov

Certificate of Change Pursuant to NRS 78.209

TYPE OR PRINT - USE DARK INK ONLY - DO NOT HIGHLIGHT

INSTRUCTIONS:

1. Enter the current name as on file with the Nevada Secretary of State and enter the Entity or Nevada Business Identification Number (NVID).
2. Indicate the current number of authorized shares and par value, if any, and each class or series before the change.
3. Indicate the number of authorized shares and par value, if any of each class or series after the change.
4. Indicate the change of the affected class or series of issued, if any, shares after the change in exchange for each issued share of the same class or series.
5. Indicate provisions, if any, regarding fractional shares that are affected by the change.
6. NRS required statement.
7. This section is optional. If an effective date and time is indicated the date must not be more than 90 days after the date on which the certificate is filed.
8. Must be signed by an Officer. Form will be returned if unsigned.

1. Entity Information:	Name of entity as on file with the Nevada Secretary of State: <input type="text" value="Synthetic Bioiogcs, Inc."/> Entity or Nevada Business Identification Number (NVID): <input type="text" value="E0776232008-6"/>	
2. Current Authorized Shares:	The current number of authorized shares and the par value, if any, of each class or series, if any, of shares before the change: 20,000,000 shares of common stock, par value \$0.001 per share 10,000,000 shares of preferred stock, par value \$0.001 per share	
3. Authorized Shares After Change:	The number of authorized shares and the par value, if any, of each class or series, if any, of shares after the change: 350,000,000 shares of common stock, par value \$0.001 per share 10,000,000 shares of preferred stock, par value \$0.001 per share	
4. Issuance:	The number of shares of each affected class or series, if any, to be issued after the change in exchange for each issued share of the same class or series: N/A	
5. Provisions:	The provisions, if any, for the issuance of fractional shares, or for the payment of money or the issuance of scrip to stockholders otherwise entitled to a fraction of a share and the percentage of outstanding shares affected thereby: Fractional shares of common stock will be rounded up to the next whole share	
6. Provisions:	The required approval of the stockholders has been obtained.	
7. Effective date and time: (Optional)	Date: <input type="text"/>	Time: <input type="text"/> (must not be later than 90 days after the certificate is filed)
8. Signature: (Required)	<div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> X _____ Signature of Officer </div> <div style="margin-right: 20px;"> <input type="text" value="CEO and CFO"/> Title </div> <div> <input type="text"/> Date </div> </div>	

This form must be accompanied by appropriate fees.
 If necessary, additional pages may be attached to this form.

APPENDIX C

**AMENDMENT NO 1.
TO THE SYNTHETIC BIOLOGIC, INC. 2020 STOCK INCENTIVE PLAN**

Dated: September 30, 2022

WHEREAS, the Board of Directors (the “Board”) of Synthetic Biologics, Inc. (the “Company”) heretofore established the Synthetic Biologics, Inc. 2020 Stock Incentive Plan (the “Plan”); and

WHEREAS, the Board desires to amend the Plan to increase the maximum number of shares of common stock of the Company available for grants of Awards thereunder (as of the date of this amendment, previously adopted the Plan) by an additional 6,600,000 shares of common stock to 7,000,000 shares of common stock; and

WHEREAS, the Board desires to further amend the Plan to amend Section 4.2 of the Plan to increase the non-employee director grant limit from 100,000 shares of common stock to 1,000,000 shares of common stock; and

WHEREAS, pursuant to Section 17.2 of the Plan, the Board has the right to amend the Plan with respect to certain matters; and

WHEREAS, the Board has approved and authorized this Amendment No. 1 to the Plan and has recommended that the stockholders of the Company approve this Amendment No. 1;

NOW, THEREFORE, BE IT RESOLVED, that the Plan is hereby amended, subject to and effective as of the date of stockholder approval hereof, in the following particulars:

1. Subject to approval of the Company’s stockholders, Section 4(a) of the Plan is hereby amended by increasing the share references in such section by an additional 6,600,000 shares of common stock to 7,000,000 shares of common stock, so that Section 4(a) reads in its entirety as follows:

“(a) Subject to adjustment pursuant to Section 4.3 hereof, the maximum aggregate number of shares of Common Stock which may be issued under all Awards granted to Participants under the Plan shall be 7,000,000 shares (the “Initial Limit”), all of which may, but need not, be issued in respect of Incentive Stock Options.

2. Subject to approval of the Company’s stockholders, Section 4.2 of the Plan is hereby amended by increasing the share references in such section by an additional 900,000 shares of common stock to 1,000,000 shares of common stock, so that Section 4.2 reads in its entirety as follows:

“(a) Subject to adjustment pursuant to Section 4.3 hereof, the number of shares of Common Stock with respect to which Awards may be granted during any calendar year to any one Eligible Person who is a non-employee director of the Board shall not exceed 1,000,000.

3. Except as specifically set forth herein, the terms of the Plan shall be and remain unchanged, and the Plan as amended shall remain in full force and effect.

[Signature Page Follows]

IN WITNESS WHEREOF, the undersigned has executed this Amendment No. 1 as evidence of its adoption by the Board on the date set forth above.

SYNTHETIC BIOLOGICS, INC.

By: /s/ Steven A. Shallcross

Name: Steven A. Shallcross
Title: Chief Executive Officer and
Chief Financial Officer
Dated:

Synthetic Biologics, Inc.
9605 Medical Center, Suite 270
Rockville, Maryland 20850

SUBMIT A PROXY TO VOTE BY INTERNET — www.voteproxy.com

Use the Internet to transmit your voting instructions and for electronic delivery of information up until 11:59 P.M. Eastern Time on August 29, 2022. Have your proxy card in hand when you access the web site and follow the instructions to obtain your records and to create an electronic voting instruction form.

ELECTRONIC DELIVERY OF FUTURE PROXY MATERIALS —

If you would like to reduce the costs incurred by our company in mailing proxy materials, you can consent to receiving all future proxy statements, proxy cards and annual reports electronically via e-mail or the Internet. To sign up for electronic delivery, please follow the instructions above to vote using the Internet and, when prompted, indicate that you agree to receive or access proxy materials electronically in future years.

SUBMIT A PROXY TO VOTE BY MAIL —

Mark, sign and date your proxy card and return it in the postage-paid envelope we have provided.

The Board of Directors recommends you vote FOR the election of each of the following:				To withhold authority to vote for any individual nominee(s), mark "For All Except" and write the number(s) of the nominee(s) on the line below.		
	For All	Withhold All	For All Except			
1. Election of Directors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
Nominees:						
01 Jeffrey Kraws				02 John Monahan		
03 Steven Shallcross				04 Jeffrey Wolf		
The Board of Directors recommends you vote FOR the proposals 2, 3, 4, 5, 6 and 7				For	Against	Abstain
2. To ratify the appointment of BDO USA, LLP as our independent registered public accounting firm for our fiscal year ending on December 31, 2022;	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
3. to approve an amendments to the Company's 2020 Stock Incentive Plan to increase the number of shares of common stock that we will have authority to grant under the plan from 400,000 to 7,000,000 an to increase the annual non-employee director grant limit to 1,000,000 shares of common stock;	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
4. to approve, on an advisory basis, the compensation of our named executive officers, as disclosed in this proxy statement;	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
5. to approve an amendment to the Company's Articles of Incorporation to change the name of the Company to "Theriva Biologics, Inc.";	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
6. to approve an amendment to the Company's Articles of Incorporation, to effect an increase the number of authorized shares of common stock from 20,000,000 to 350,000,000, such amendment to be effected after stockholder approval thereof only in the event the Board of Directors still deems it advisable;	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			

The Board of Directors recommends you vote FOR the election of each of the following:	For All	Withhold All	For All Except	To withhold authority to vote for any individual nominee(s), mark "For All Except" and write the number(s) of the nominee(s) on the line below.				
7. to approve the adjournment the Annual Meeting to a later date, if necessary or appropriate, to permit further solicitation and vote of proxies in the event that there are insufficient votes for, or otherwise in connection with, the approval of Proposal 6.				<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>				
<p>NOTE: To transact such other business as may properly come before the meeting or any adjournments or postponements of the meeting.</p> <p>Please sign exactly as your name(s) appear(s) hereon. When signing as attorney, executor, administrator, 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.</p>								
<table><tbody><tr><td>Signature [PLEASE SIGN WITHIN BOX]</td><td>Date</td><td>Signature (Joint Owners)</td><td>Date</td></tr></tbody></table>					Signature [PLEASE SIGN WITHIN BOX]	Date	Signature (Joint Owners)	Date
Signature [PLEASE SIGN WITHIN BOX]	Date	Signature (Joint Owners)	Date					

SYNTHETIC BIOLOGICS, INC.

**2022 Annual Meeting of Stockholders
September 30, 2022 9:30 A.M. Eastern Time
This proxy is solicited by the Board of Directors**

The undersigned stockholder hereby appoints Steven A. Shallcross, as proxy, with the power to appoint his or her substitute, and hereby authorizes him to represent and to vote, as designated on the reverse side of this ballot, all of the shares of common stock and/or preferred stock of SYNTHETIC BIOLOGICS, INC. that the undersigned is entitled to vote at the Annual Meeting of Stockholders to be held at 9:30 A.M., Eastern Time, on September 30, 2022 at the Maryland offices of the Company, located at 9605 Medical Center, Rockville, Maryland 20850. The purpose of the 2022 Annual Meeting and the matters to be acted on are stated in the accompanying Notice of Annual Meeting of Stockholders. The Board of Directors knows of no other business that will come before the 2022 Annual Meeting.

This proxy, when properly executed, will be voted in the manner directed herein. If no such direction is made, this proxy will be voted in accordance with the Board of Directors' recommendations.

Continued and to be signed on reverse side
