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

SCHEDULE 14A

**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 Materials Pursuant to Rule 14a-12

MATINAS BIOPHARMA HOLDINGS, 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 computed on table below per Exchange Act Rules 14a-6(i)(1) and 0-11.
- (1) Title of each class of securities to which transaction applies:
- (2) Aggregate number of securities to which transaction applies:
- (3) Per unit price or other underlying value of transaction computed pursuant to Exchange Act Rule 0-11 (set forth the amount on which the filing fee is calculated and state how it was determined):
- (4) Proposed maximum aggregate value of transaction:
- (5) Total fee paid:
- ☐ Fee paid previously with preliminary materials:
- ☐ Check box if any part of the fee is offset as provided by Exchange Act Rule 0-11(a)(2) and identify the filing for which the offsetting fee was paid previously. Identify the previous filing by registration statement number, or the Form or Schedule and the date of its filing.
- (1) Amount previously paid:
- (2) Form, Schedule or Registration Statement No.:
- (3) Filing Party:
- (4) Date Filed:
-
-

MATINAS BIOPHARMA HOLDINGS, INC.

**1545 ROUTE 206 SOUTH
SUITE 302
BEDMINSTER, NJ 07921**

NOTICE OF ANNUAL MEETING OF STOCKHOLDERS

To be held on June 23, 2025

To the Stockholders of
Matinas BioPharma Holdings, Inc.

NOTICE IS HEREBY GIVEN that the Annual Meeting of Stockholders of Matinas BioPharma Holdings, Inc. (the “Company”) will be held via the internet on June 23, 2025, beginning at 9 a.m. local time. Stockholders will be able to listen, vote and ask questions regardless of location via the internet at www.virtualshareholdermeeting.com/MTNB2025 by using the control number included on your notice regarding the availability of proxy materials, proxy card (printed in the

box and marked by the arrow) and the instructions that accompanied your proxy materials. **You will not be able to attend the Annual Meeting in person.** At the Annual Meeting, stockholders will act on the following matters:

- To elect five directors to serve until the next Annual Meeting of Stockholders and until their respective successors shall have been duly elected and qualified;
- To approve, on an advisory basis, the compensation of the Company’s named executive officers;
- To approve an amendment to our Certificate of Incorporation, as amended, to effect up to two reverse stock splits of our common stock having an aggregate ratio in the range of 1-for-2 to 1-for-199 over a period of two years, with such reverse stock splits to be effected at such ratios, times and dates, if at all, as determined by our Board of Directors in its sole discretion;
- To approve an amendment to our Certificate of Incorporation, as amended, to increase the number of our authorized shares of common Stock from 250,000,000 shares to 500,000,000 and to make a corresponding change to the number of authorized shares of capital stock;
- To approve the Company’s 2025 Equity Incentive Plan; and
- To consider any other matters that may properly come before the Annual Meeting.

Only stockholders of record of our common stock and Series C Convertible Preferred Stock (the “Preferred Stock”) at the close of business on May 1, 2025, are entitled to receive notice of and to vote at the Annual Meeting or any postponement or adjournment thereof.

Your vote is important. Whether you plan to attend the meeting virtually or not, you may vote your shares online or by marking, signing, dating and mailing the enclosed proxy card in the envelope provided. If you attend the meeting virtually and prefer to vote during the meeting, you may do so even if you have already voted your shares. You may revoke your proxy in the manner described in the proxy statement at any time before it has been voted at the meeting.

Regardless of the number of shares you own, please be sure you are represented at the Annual Meeting either by attending virtually or by returning your proxy or voting on the internet as soon as possible.

This Notice of Special Meeting of Stockholders, Proxy Statement and the proxy card are available online at: www.proxyvote.com.

By Order of the Board of Directors

/s/ Jerome D. Jabbour
Jerome D. Jabbour
Chief Executive Officer

May 12, 2025
Bedminster, New Jersey

TABLE OF CONTENTS

PROXY STATEMENT	1
ABOUT THE MEETING	1
PROPOSAL NO. 1: ELECTION OF DIRECTORS	4
PROPOSAL NO. 2: ADVISORY VOTE TO APPROVE NAMED EXECUTIVE OFFICER COMPENSATION	10
EXECUTIVE COMPENSATION	11
SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT	14
PAY VERSUS PERFORMANCE DISCLOSURE	15
PROPOSAL 3: REVERSE STOCK SPLIT PROPOSAL	19
PROPOSAL 4: PROPOSAL TO INCREASE THE NUMBER OF AUTHORIZED SHARES OF COMMON STOCK FROM 250,000,000 TO 500,000,000	26
PROPOSAL 5: APPROVAL OF THE 2025 EQUITY INCENTIVE PLAN	28
STOCKHOLDER PROPOSALS	34
ANNUAL REPORT	34
HOUSEHOLDING OF ANNUAL MEETING MATERIALS	34
OTHER MATTERS	34
ANNEX A	REVERSE STOCK SPLIT AMENDMENT
ANNEX B	CERTIFICATE OF AMENDMENT TO THE THIRD AMENDED AND RESTATED CERTIFICATE OF INCORPORATION
ANNEX C	MATINAS BIOPHARMA HOLDINGS 2025 EQUITY INCENTIVE PLAN

MATINAS BIOPHARMA HOLDINGS, INC.
1545 ROUTE 206 SOUTH
SUITE 302
BEDMINSTER NJ 07921

PROXY STATEMENT

This proxy statement contains information related to the Annual Meeting of Stockholders to be held on June 23, 2025 at 9 a.m. local time via the internet at www.virtualshareholdermeeting.com/MTNB2025, or at such other time and place to which the Annual Meeting may be adjourned or postponed. The enclosed proxy is solicited by the Board of Directors of Matinas BioPharma Holdings, Inc. (the “Board”). The proxy materials relating to the Annual Meeting are being mailed to stockholders entitled to vote at the meeting on or about May 12, 2025.

Important Notice of Availability of Proxy Materials for the Annual Meeting of Stockholders to be held on June 23, 2025.

Our proxy materials, including our Proxy Statement for the 2025 Annual Meeting, our Annual Report for the fiscal year ended December 31, 2024, and

ABOUT THE MEETING

Why are we calling this Annual Meeting?

We are calling the Annual Meeting to seek the approval of our stockholders:

- To elect five directors to serve until the next Annual Meeting of Stockholders and until their respective successors shall have been duly elected and qualified;
- To approve, on an advisory basis, the compensation of the Company's named executive officers;
- To approve an amendment to our Certificate of Incorporation to effect up to two reverse stock splits of our common stock having an aggregate ratio in the range of 1-for-2 to 1-for-199 over a period of two years, with such reverse stock splits to be effected at such ratios, times and dates, if at all, as determined by our Board of Directors in its sole discretion (the "Reverse Stock Split Proposal");
- To approve an amendment to our Certificate of Incorporation, as amended, to increase the number of our authorized shares of common stock from 250,000,000 shares to 500,000,000 and to make a corresponding change to the number of authorized shares of capital stock (the "Increase to Authorized Proposal");
- To approve the Company's 2025 Equity Incentive Plan; and
- To consider any other matters that may properly come before the Annual Meeting.

What are the Board's recommendations?

Our Board believes that the election of the director nominees identified herein, the approval, on an advisory basis, of the executive compensation of the Company's named executive officers, the Reverse Stock Split Proposal, the Increase to Authorized Proposal and the proposal to approve the Matinas BioPharma Holdings 2025 Equity Incentive Plan are advisable and in the best interests of the Company and its stockholders and recommends that you vote FOR each of these proposals.

Who is entitled to vote at the meeting?

Only stockholders of record of our common stock and Series C Convertible Preferred Stock (the "Preferred Stock") at the close of business on the record date, May 1, 2025, are entitled to receive notice of the Annual Meeting and to vote the shares of stock that they held on that date at the meeting, or any postponement or adjournment of the meeting. Holders of our common stock are entitled to one vote per share on each matter to be voted upon. Holders of our Preferred Stock are entitled to vote on an as-converted basis with our common stock on all matters presented to stockholders. Holders of Preferred Stock outstanding on the Record Date have a number of votes equal to the number of shares of common stock issuable upon conversion of each such share held by the holder. Accordingly, as of the Record Date, each share of Preferred Stock has 1,564.2 votes, which is determined by dividing \$1,000.00, the stated value of one share of Preferred Stock, by \$0.6393, the conversion price, having an aggregate voting power of 5,161,896 votes.

As of the Record Date, we had 5,086,985 shares of common stock outstanding and 3,300 shares of Preferred Stock outstanding, which constitutes all the outstanding capital stock of the Company.

Who can attend the meeting?

This year's Annual Meeting will take place virtually through the Internet. There will not be a physical meeting location, and you will not be able to attend the Annual Meeting in person. We have designed the format of the Annual Meeting to ensure that our stockholders have the same rights and opportunities to participate as they would at an in-person meeting. You will be able to attend the Annual Meeting online, vote your shares online during the Annual Meeting and submit questions online during the Annual Meeting by visiting www.virtualshareholdermeeting.com/MTNB2025. You are entitled to attend and participate in the Annual Meeting only if you were a stockholder of record as of the close of business on May 1, 2025. To be admitted to the Annual Meeting at www.virtualshareholdermeeting.com/MTNB2025, you must enter the 16-digit control number found on your proxy card, notice of internet availability or other proxy materials. If you do not have a control number, please contact the brokerage firm, bank, dealer, or other similar organization that holds your account as soon as possible so that you can be provided with a control number. The Annual Meeting will begin promptly at 9:00 a.m. local time. We encourage you to access the Annual Meeting before it begins. Online check-in will start 15 minutes before the meeting on June 23, 2025. If you encounter any difficulties accessing the virtual meeting during the check-in or meeting time, please call the technical support number that will be posted on the virtual Annual Meeting log-in page.

What constitutes a quorum?

The presence at the Annual Meeting, virtually or by proxy, of the holders of one-third of the voting power of our common stock and Preferred Stock outstanding, or 3,416,293 votes, on the record date will constitute a quorum for our meeting. Signed proxies received but not voted and broker non-votes will be included in the calculation of the number of shares considered to be present at the meeting.

How do I vote?

You can vote on matters that come before the Annual Meeting via the Internet, by following the instructions in the Notice at www.virtualshareholdermeeting.com/MTNB2025, or by submitting your proxy card by mail.

Your shares will be voted as you indicate on your proxy card. If you vote the proxy but do not indicate your voting preferences, and with respect to any other matter that properly comes before the meeting, the individuals named on the proxy card will vote your shares FOR the matters submitted at the meeting, or if no recommendation is given, in their own discretion.

If you are a stockholder of record, to submit your proxy by telephone or via the Internet, follow the instructions on the proxy card. If you hold your shares in street name, you may vote by telephone or via the Internet as instructed by your broker, bank or other nominee.

If you are a stockholder of record, virtually attend the Annual Meeting and prefer to vote online at the Annual Meeting, you may do so even if you have already voted your shares by proxy. If you hold shares in "street name," however, you must provide a legal proxy executed by your broker or other nominee in order to vote your shares at the Annual Meeting.

What if I vote and then change my mind?

You may revoke your proxy at any time before it is exercised by:

- filing with the Secretary of the Company a notice of revocation;
- sending in another duly executed proxy by telephone, internet or mail bearing a later date; or
- attending the meeting virtually and casting your vote online.

Your latest vote will be the vote that is counted.

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

Many of our stockholders hold their shares through a stockbroker, bank 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.

Stockholder of Record

If your shares are registered directly in your name with our transfer agent, VStock Transfer, LLC, you are considered, with respect to those shares, the stockholder of record. As the stockholder of record, you have the right to grant your voting proxy directly to us or to vote virtually at the Annual Meeting.

Beneficial Owner

If your shares are held in a stock brokerage account or by a bank or other 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, bank or nominee which is considered, with respect to those shares, the stockholder of record. As the beneficial owner, you have the right to direct your broker as to how to vote and are also invited to attend the Annual Meeting. However, because you are not the stockholder of record, you may not vote these shares online at the Annual Meeting unless you obtain a signed proxy from the record holder giving you the right to vote the shares. If you do not vote your shares or otherwise provide the stockholder of record with voting instructions, your shares may constitute broker non-votes. The effect of broker non-votes is more specifically described in “*What vote is required to approve each proposal?*” below.

What vote is required to approve each proposal?

The holders of one-third of our shares of common stock and Preferred Stock, on an as-converted basis, outstanding on the record date must be present, virtually or by proxy, at the Annual Meeting in order to have the required quorum for the transaction of business. Pursuant to Delaware corporate law, abstentions and broker non-votes will be counted for the purpose of determining whether a quorum is present.

Assuming that a quorum is present, the following votes will be required:

- With respect to the election of directors (Proposal No. 1), the five nominees receiving the highest number of FOR votes (from the holders of shares present virtually or represented by proxy) will be elected as directors.
- With respect to the approval, on an advisory basis, of the compensation of the Company’s named executive officers (Proposal No. 2), the Reverse Stock Split Proposal (Proposal No. 3), the Increase to Authorized Proposal (Proposal No. 4) and the approval of the Company’s 2025 Equity Compensation Plan (Proposal No. 5) will require the affirmative vote of a majority of the votes cast virtually or represented by proxy at the Annual Meeting.
- With respect to the approval of any other matter that may properly come before the Annual Meeting, approval will require the affirmative vote of a majority of the votes cast virtually or represented by proxy at the Annual Meeting.

Holders of common stock and Preferred Stock will not have any dissenters’ rights of appraisal in connection with any of the matters to be voted on at the meeting.

What are “broker non-votes”?

Broker non-votes occur when nominees, such as banks and brokers holding shares on behalf of beneficial owners, do not receive voting instructions from the beneficial holders at least ten days before the meeting. If that happens, the nominees may vote those shares only on matters deemed “routine”. Nominees cannot vote on non-routine matters unless they receive voting instructions from beneficial holders, resulting in so-called “broker non-votes.” The determination of which proposals are deemed “routine” versus “non-routine” may not be made by the New York Stock Exchange until after the date on which this proxy statement has been mailed to you. As such, it is important that you provide voting instructions to your bank, broker or other nominee, if you wish to determine the voting of your shares.

Only the Reverse Stock Split Proposal and the Proposal to Increase Authorized are routine matters that brokers are entitled to vote shares on without receiving instructions.

How are we soliciting this proxy?

We are soliciting this proxy on behalf of our Board and will pay all expenses associated therewith. Some of our officers, directors and other employees also may, but without compensation other than their regular compensation, solicit proxies by further mailing or personal conversations, or by telephone, facsimile or other electronic means.

We will also, upon request, reimburse brokers and other persons holding stock in their names, or in the names of nominees, for their reasonable out-of-pocket expenses for forwarding proxy materials to the beneficial owners of the capital stock and to obtain proxies.

PROPOSAL NO. 1: ELECTION OF DIRECTORS

At the Annual Meeting, five directors are to be elected. All directors of the Company will hold office until the next Annual Meeting of Stockholders or until their respective successors are duly elected and qualified or their earlier resignation or removal. The Board has nominated the following individuals for election as directors to serve until the next annual meeting of stockholders and until their successors have been duly elected and qualified: Jerome D. Jabbour, Evelyn D’An, Keith Murphy, Edward Neugeboren and Robin L. Smith. Each of these five director nominees named in the proxy statement is a current member of the Board.

It is the intention of the persons named in the proxies for the holders of common stock to vote the proxies for the election of the nominees named below, unless otherwise specified in any particular proxy. Our management does not contemplate that the nominees will become unavailable for any reason, but if that should occur before the meeting, proxies will be voted for another nominee, or other nominees, to be selected by our Board. In accordance with our by-laws and Delaware law, a stockholder entitled to vote for the election of directors may withhold authority to vote for certain nominees for directors or may withhold authority to vote for all nominees for directors. The director

nominees receiving a plurality of the votes present virtually or by proxy at the meeting and entitled to vote on the election of directors will be elected directors. Broker non-votes will not be treated as a vote for or against any particular director nominee and will not affect the outcome of the election. Stockholders may not vote, or submit a proxy, for a greater number of nominees than the seven nominees named below.

Director Nominees

The following table sets forth the name, age, position and tenure of each of the director nominees up for election at the 2025 Annual Meeting:

Name	Age	Position(s)	Served as an Officer or Director Since
Jerome D. Jabbour	51	Chairman, Chief Executive Officer and President	2013
Evelyn D'An	63	Director	2025
Keith Murphy	54	Director	2025
Edward Neugeboren	57	Director	2025
Robin L. Smith	64	Director	2025

The following biographical descriptions set forth certain information with respect to the director nominees based on information furnished to the Company by each such individual.

Jerome D. Jabbour See description under “Management.”

Evelyn D'An has served on the Board since February 2025. She is an experienced board director and financial leader with extensive corporate governance, financial oversight, and accounting experience with a range of companies. She is President of D'An Financial Services, a strategic consulting firm she established in 2004 and has been serving on corporate boards since 2006. From 1998 through 2004, Ms. D'An served as partner of Ernst & Young, an accounting and professional services firm, where she spent 18 years serving clients in retail, consumer products, technology, financial services, media and other sectors. Ms. D'An serves on the board of directors of Zoomcar Holdings, Inc., a publicly-traded car sharing platform company (NASDAQ: ZCAR), where she has served since April 2023, GHD Group Pty Ltd., a privately-held technical professional services firm, where she has served since March 2020, and Backblaze, Inc., a publicly-traded open cloud storage platform (NASDAQ: BLZE), where she has served since August 2021. Ms. D'An is the chair of the audit committee of all three companies, a member of the compensation committee of Backblaze, Inc. and Zoomcar Holdings, Inc. and a member of the nominating committee of GHD Group Pty Ltd. Ms. D'An served on the board of directors of Renovaro Inc. (NASDAQ: REND) (formerly Enochian BioSciences Inc.) from April 2018 through June 2021, where she was a member of the audit committee and the nominating committee. Ms. D'An graduated with a B.S. in Accounting from the State University at Albany. We believe Ms. D'An is qualified to serve on our board of directors due to her extensive expertise and experience in a variety of public companies and because of her demonstrated financial expertise and experience serving on boards of directors and as Chair of audit committees.

4

Keith Murphy has served on the Board since March 2025 and is currently a Director and Executive Chairman of Organovo Holdings, Inc. (Nasdaq: ONVO). Mr. Murphy re-joined the Organovo board of directors in July 2020 and has served as its Executive Chairman since September 2020. Mr. Murphy is also the Chief Executive Officer and Chairman of Viscient Bio (“Viscient”), a private company that he founded in 2017 that is focused on drug discovery and development utilizing 3D tissue technology and multi-omics (genomics, transcriptomics, metabolomics). Mr. Murphy previously served as the President and Chief Executive Officer of Organovo from February 2012 through April 2017, and as Chairman from February 2012 through August 2017. Mr. Murphy also previously served as President, Chief Executive Officer, and Chairman of Organovo, Inc., Organovo’s primary operating company prior to its going-public transaction, from August 2007 to February 2012. Prior to founding Organovo, Mr. Murphy served in various roles at Amgen, Inc. from August 1997 to July 2007 including as Global Operations Leader for the osteoporosis/bone cancer drug Prolia/Xgeva (denosumab). Prior to joining Amgen, Mr. Murphy served at Alkermes, Inc., a biotechnology company, from July 1993 to July 1997, where he played a role on the development team for their first approved product, Nutropin (hGH) Depot. Mr. Murphy served as a member of the board of directors of Kintara Therapeutics, Inc. from August 2020 to February 2022, and served on its compensation committee and nominating and corporate governance committee. He holds a B.S. in Chemical Engineering from the Massachusetts Institute of Technology (MIT) and is an alumnus of the UCLA Anderson School of Management. We believe Mr. Murphy’s previous experience in the biotechnology field, especially in developing novel products, his experience and expertise in product development opportunities and strategy, and his educational experience qualify him to be a member of our board of directors.

Edward Neugeboren has served on the Board since March 2025. Since January of 2016, Mr. Neugeboren has served as the Chief Strategy Officer of Cronus Pharma, LLC, a fully integrated R&D, manufacturing and sales & marketing animal health pharmaceutical company. Mr. Neugeboren leads Cronus Pharma’s commercial operations, strategic planning and acquisitions and is also responsible for developing and executing overall corporate strategy as well as corporate and portfolio acquisitions and licensing. Mr. Neugeboren currently serves on the Board of Directors of Grace Therapeutics (Nasdaq: GRCE), a late-stage biopharmaceutical company addressing rare and orphan diseases where he is a member of the Audit, Compensation and Nominating & Governance Committees. Previously, Mr. Neugeboren was the Chief Strategy Officer for the parent pharmaceutical group comprised of Rising Pharma Holdings, Inc., a generic pharmaceutical company and Casper Pharma, LLC, a specialty pharmaceutical company. Mr. Neugeboren is Founder and Managing Partner of QuadView Healthcare Advisors, a healthcare investment banking and business development firm. Mr. Neugeboren was previously a Managing Director of Ledgemont Capital Group, LLC, an investment banking firm providing strategic and financial advisory services to emerging healthcare and technology companies and was a managing member when it filed for voluntary bankruptcy in May 2013. Mr. Neugeboren has graduated with a BA in Economics from Union College. We believe Mr. Neugeboren is qualified to serve as a director due to his extensive experience in development, general management and knowledge of the pharmaceutical and health care industries.

Robin L. Smith, MD, MBA has served on the Board since February 2025. Dr. Smith has been a Managing Partner of BRM Holdings, a privately-held strategic and investment advisory firm, since 2015. From 2006 until 2015, Dr. Smith was chairman and chief executive officer of Lisata Therapeutics, Inc., a publicly-traded stem-cell bank (NASDAQ: LSTA) (formerly Neostem, Inc.). From October 2019 to December 2023, Dr. Smith served on the board of directors of Celularity Inc, a publicly-traded cellular and regenerative medicine company (NASDAQ: CELU). From February 2020 to May 2022, Dr. Smith served on the board of directors of ServiceSource International, Inc., a publicly-traded customer journey experience company (NASDAQ: SREV) that was acquired in 2022 by Concentrix Corporation, and served on its nominating and governance committee. From December 2019 to November 2021, Dr. Smith served on the board of directors of Sorrento Therapeutics, a former publicly-traded clinical and commercial stage biopharmaceutical company (NASDAQ: SRNE). From February 2019 to May 2020, Dr. Smith served on the board of directors of Seelos Therapeutics, a publicly-traded clinical-stage biopharmaceutical company (NASDAQ: SEEL), and served on its audit and compensation committees. Prior to 2019, Dr. Smith served on the boards of multiple publicly-traded biopharmaceutical companies. Dr. Smith received her B.A. from Yale University and her M.D. from the Yale School of Medicine. She holds an M.B.A. from the Wharton School of Business, completed the Stanford University Directors Program, and received an honorary Doctor of Science degree from Thomas Jefferson Medical College. We believe Dr. Smith is qualified to serve on our board of directors because of her extensive management experience in the pharmaceutical industry and her clinical, drug development and regulatory experience.

There are no family relationships among any of our directors or executive officers.

Vote Required

Directors will be elected by a plurality of the votes cast virtually or by proxy at the annual meeting. Abstentions and broker non-votes will each be counted as present for purposes of determining the presence of a quorum but will have no effect on the vote for election of directors.

THE BOARD OF DIRECTORS UNANIMOUSLY RECOMMENDS THAT THE STOCKHOLDERS VOTE FOR THE ELECTION OF THE DIRECTOR NOMINEES.

Corporate Governance Matters

Board of Director Composition

Our Board currently consists of five members. We have no formal policy regarding board diversity. Our priority in selection of board members is identification of members who will further the interests of our stockholders through his or her established record of professional accomplishment, the ability to contribute positively to the collaborative culture among board members, knowledge of our business and understanding of the competitive landscape.

Board of Director Meetings

Our Board met eight times in 2024. Each of our former directors who served on the Board during 2024 attended at least 75% of the aggregate of (i) the total number of meetings of our Board (held during the period for which such directors served on the Board) and (ii) the total number of meetings of all committees of our Board on which the director served (during the periods for which the director served on such committee or committees). The Company does not have a formal policy requiring members of the Board to attend our annual meetings.

Director Independence

Our common stock is listed on the NYSE American. Our Board undertook a review of its composition, the composition of its committees and the independence of each director. Based on information requested from and provided by each of our current and past directors, our Board has determined that Messrs. Keith Murphy, Edward Neugeboren, Herbert Conrad, Eric Ende, James Scibetta, and Matthew Wikler and Ms. Evelyn D'An, Robin L. Smith, Kathryn Corzo and Natasha Giordano are "independent directors" as such term is defined in the rules of the NYSE's corporate governance requirements and Rule 10A-3 promulgated under the Securities Exchange Act of 1934, as amended.

There are no family relationships among any of our directors or executive officers.

Board Committees

Our Board has three standing committees — an Audit Committee, a Compensation Committee, and a Nominating and Corporate Governance Committee.

Audit Committee. The Audit Committee oversees and monitors our financial reporting process and internal control system, reviews and evaluates the audit performed by our registered independent public accountants and reports to the Board any substantive issues found during the audit. The Audit Committee is directly responsible for the appointment, compensation and oversight of the work of our registered independent public accountants. The Audit Committee reviews and approves all transactions with affiliated parties. Mr. Edward Neugeboren and Ms. Evelyn D'An and Robin L. Smith currently serve as members of the Audit Committee, with Ms. D'An serving as its chair. Prior to March 2025, the Audit Committee was comprised of James Scibetta, Herbert Conrad and Natasha Giordano, with Mr. Scibetta serving as Chair, all of whom have since retired from the Board. All current and past members of the Audit Committee have been determined to be financially literate and are considered independent directors as defined under the NYSE MKT's listing standards and applicable SEC rules and regulations. Ms. D'An qualifies as an audit committee "financial expert" as that term is defined by SEC regulations. The Audit Committee met four times during 2024. Our Board has adopted an Audit Committee Charter, which is available for viewing at www.matinasbiopharma.com.

Compensation Committee. The Compensation Committee provides advice and makes recommendations to the Board in the areas of employee salaries, benefit programs and director compensation. The Compensation Committee also reviews the compensation of our executive officers, including our chief executive officer, and makes recommendations in that regard to the Board as a whole. Edward Neugeboren and Keith Murphy currently serve as members of the Compensation Committee, with Mr. Neugeboren serving as its chair. Prior to March 2025, the Compensation Committee was comprised of Kathryn Corzo, James Scibetta and Matthew Wikler, with Mr. Wikler most recently serving as Chair, all of whom have since retired from the Board. All current and past members of the Compensation Committee are considered independent directors as defined under the NYSE MKT's listing standards. The Compensation Committee met four times during 2024. Our Board has adopted a Compensation Committee Charter, which is available for viewing at www.matinasbiopharma.com.

Nominating and Corporate Governance Committee. The Nominating and Corporate Governance Committee nominates individuals to be elected to the full Board by our stockholders. The Nominating and Corporate Governance Committee considers recommendations from stockholders if submitted in a timely manner in accordance with the procedures set forth in our Bylaws and applies the same criteria to all persons being considered. Keith Murphy, Evelyn D'An and Robin L. Smith currently serve as members of the Nominating and Corporate Governance Committee, with Mr. Murphy serving as its chair. Prior to March 2025, the Nominating and Corporate Governance Committee was comprised of Herbert Conrad, Kathryn Corzo, Eric Ende, and Natasha Giordano, with Ms. Giordano serving as Chair, all of whom have since retired from the Board. All current and past members of the Nominating and Corporate Governance Committee are considered independent directors as defined under the NYSE MKT's listing standards. The Nominating and Corporate Governance Committee met four times during 2024. Our Board has adopted a Nominating and Corporate Governance Charter, which is available for viewing at www.matinasbiopharma.com.

Stockholder nominations for directorships

Stockholders may recommend individuals to the Nominating and Corporate Governance Committee for consideration as potential director candidates by submitting their names and backgrounds to the Secretary of the Company at the address set forth below under "Stockholder Communications." All such recommendations will be forwarded to the Nominating and Corporate Governance Committee, which will review and only consider such recommendations if appropriate biographical and other information is provided, as described below, on a timely basis. All security holder recommendations for director candidates must be received by the Company in the timeframe(s) set forth under the heading "Stockholder Proposals" below.

- the name and address of record of the security holder;
- a representation that the security holder is a record holder of the Company's securities, or if the security holder is not a record holder, evidence of ownership in accordance with Rule 14a-8(b)(2) of the Securities Exchange Act of 1934;
- the name, age, business and residential address, educational background, current principal occupation or employment, and principal occupation or employment for the preceding five (5) full fiscal years of the proposed director candidate;
- a description of the qualifications and background of the proposed director candidate and a representation that the proposed director candidate meets applicable independence requirements;
- a description of any arrangements or understandings between the security holder and the proposed director candidate; and

- the consent of the proposed director candidate to be named in the proxy statement relating to the Company's annual meeting of stockholders and to serve as a director if elected at such annual meeting.

Assuming that appropriate information is provided for candidates recommended by stockholders, the Nominating and Corporate Governance Committee will evaluate those candidates by following substantially the same process, and applying substantially the same criteria, as for candidates submitted by members of the Board or other persons, as described above and as set forth in its written charter.

Board Leadership Structure and Role in Risk Oversight

The Board does not have a formal policy on whether or not the roles of Chairman of the Board and CEO should be separate or combined and, if they are to be separate, whether the Chairman of the Board should be selected from the non-employee directors or be an employee. The directors serving on our Board possess considerable professional and industry experience, significant and diverse experience as directors of both public and private companies and a unique knowledge of the challenges and opportunities that Matinas faces. As such, the Board believes that it is in the best position to evaluate the Company's needs and to determine how best to organize its leadership structure to meet those needs.

The Board believes that the most effective leadership structure for Matinas at the present time is for Jerome Jabbour to serve as both Chairman of the Board and CEO. The Board believes this model makes clear that the Chairman of the Board and CEO is responsible for managing our business, under the oversight and review of our Board. This structure also enables our CEO to act as a bridge between management and the Board, helping both to act with a common purpose.

While the Board retains the authority to separate the positions of Chairman and CEO if it deems appropriate in the future, and has done so throughout most of the Company's operating history, the Board believes the combined role of Chairman and CEO is currently effective. Combining these roles places one person in a position to guide the Board in setting priorities for Matinas and in addressing the risks and challenges we face. The Board believes that, while each of its directors brings a diversity of skills and perspectives to the Board, Jerome Jabbour, by virtue of his day-to-day involvement in managing the Company since 2013, is best suited to perform this unified role.

The Board believes there is no single organizational model that is the best and most effective in all circumstances. As a result, the Board periodically considers whether the offices of Chairman and CEO should continue to be combined and who should serve in such capacities. The Board will continue to reexamine its corporate governance policies and leadership structures on an ongoing basis to ensure that they continue to meet our needs.

Risk is inherent with every business, and how well a business manages risk can ultimately determine its success. Our board of directors is actively involved in oversight of risks that could affect us. This oversight is conducted primarily by our full board of directors, which has responsibility for general oversight of risks, and our standing board committees.

Our board of directors satisfies this responsibility through full reports by each committee chair regarding the committee's considerations and actions, as well as through regular reports directly from officers responsible for oversight of particular risks within our company. Our board of directors believes that full and open communication between management and the board of directors is essential for effective risk management and oversight.

Stockholder Communications

The Board will give appropriate attention to written communications that are submitted by stockholders and other interested parties and will respond if and as appropriate. Absent unusual circumstances or as contemplated by committee charters, and subject to advice from legal counsel, the Secretary of the Company is primarily responsible for monitoring communications from stockholders and for providing copies or summaries of such communications to the Board as he considers appropriate.

Communications from stockholders and other interested parties will be forwarded to all directors if they relate to important substantive matters or if they include suggestions or comments that the Secretary considers to be important for the Board to know. Communications relating to corporate governance and corporate strategy are more likely to be forwarded to the Board than communications regarding personal grievances, ordinary business matters, and matters as to which the Company tends to receive repetitive or duplicative communications.

Stockholders and other interested parties who wish to send communications to the Board should address such communications to: The Board of Directors, Matinas BioPharma Holdings, Inc., 1545 Route 206 South, Suite 302, Bedminster, NJ 07921, Attn.: Secretary.

Code of Business Conduct and Ethics

We have adopted a written code of business conduct and ethics that applies to our directors, officers and employees, including our principal executive officer, principal financial and accounting officer, or persons performing similar functions. A copy of the code is posted on the corporate governance section of our website, which is located at www.matinasbiopharma.com. If we make any substantive amendments to, or grant waivers from, the code of business conduct and ethics for any officer or director, we will disclose the nature of such amendment or waiver on our website.

Insider Trading Policy

We have adopted an insider trading policy (the "Trading Policy") that is designed to promote compliance with federal securities laws, rules and regulations, as well as the rules and regulations of the New York Stock Exchange. The Trading Policy provides Matinas's standards on trading and causing the trading of our securities or securities of other publicly traded companies while in possession of confidential information. It prohibits trading in certain circumstances and applies to all of our directors, officers and employees as well as independent contractors or consultants who have access to material nonpublic information of Matinas. Additionally, our Trading Policy imposes special additional trading restrictions applicable to all of our directors and executive officers. A copy of the Insider Trading Policy is filed as Exhibit 19.1 to our Annual Report on Form 10-K for the year ended December 31, 2024, as filed with Securities Exchange Commission on April 15, 2025.

Certain Relationships and Related Party Transactions

Other than compensation arrangements for our named executive officers and directors, and as described below, there has been no transaction or series of similar transactions, since January 1, 2024, to which we were a party or will be a party, in which:

- the amounts involved exceeded or will exceed the lesser of (i) \$120,000 and (ii) one percent of the average of our total assets at year-end for the last two completed fiscal years; and
- any of our directors, executive officers or holders of more than 5% of our capital stock, or any member of the immediate family of the foregoing persons, had or will have a direct or indirect material interest.

On February 13, 2025, the Company entered into a Securities Purchase Agreement (the “Purchase Agreement”) with certain investors (the “Purchasers”), pursuant to which the Company issued and sold, in a private placement (the “Offering”), an aggregate of 3,300 shares of the Company’s Series C Convertible Preferred Stock, par value \$0.0001 per share (the “Preferred Stock”), initially convertible into up to 5,631,404 shares of the Company’s common stock, and warrants (the “Warrants”, and together with the Preferred Stock, the “Securities”) to purchase up to an aggregate of 200% of the shares of common stock into which the shares of Preferred Stock are initially convertible, or 11,262,808 shares of common stock, for an offering price of \$1,000 per share of Preferred Stock and accompanying Warrants, in two equal tranches, the second of which closed on April 8, 2025. A holder of Preferred Stock or Warrants may not convert any portion of its Securities if the holder, together with its affiliates, would beneficially own in excess of 4.99% (or, at the election of the holder, 9.99%) of the number of shares of common stock outstanding immediately after giving effect to such exercise (the “Blocker”).

Pursuant to the Purchase Agreement, until such time as the Purchasers no longer own at least 10% of the outstanding shares of common stock on a fully diluted, as-converted basis, the Purchasers will be entitled to nominate one director to serve on the Board, who is initially Dr. Smith. Until such time as the Purchasers no longer own at least 30% of the outstanding shares of Common stock on a fully diluted, as-converted basis, the Purchasers are entitled to nominate one additional director to serve on the Board.

Sanitam Partners LLC, and its affiliates, Adam K Stern, HEZBAY Holdings LLC, Ari Kluger, Platinum Point Capital, LLC, Brian Freifeld, Pembroke & Partners LLC and Robert J. Eide purchased Preferred Stock convertible into an aggregate of 5,631,404 shares of common stock, and Warrants convertible into an aggregate of 11,262,808 shares of common stock, for an aggregate of 16,894,212 shares of common stock, on fully-diluted basis, subject to the Blocker, in the Offering for an aggregate of \$3.3 million. In addition, Mr. Stern holds 210,687 shares of common stock.

April 2024 Offering

On April 2, 2024, the Company entered into a securities purchase agreement (the “April 2024 Purchase Agreement”) with certain institutional investors, pursuant to which the Company issued and sold an aggregate of (i) 666,667 shares of common stock and (ii) warrants to purchase up to 666,667 shares of common stock. The offering price per share and accompanying warrant was \$15.00. Pursuant to the April 2024 Purchase Agreement, affiliates of Highbridge Capital Management, LLC, a holder of more than 5% of our common stock, purchased 466,666 shares of common stock and warrants to purchase 466,666 shares of common stock, for \$7.0 million.

Policies and Procedures for Related Party Transactions

We have adopted a policy that our executive officers, directors, nominees for election as a director, beneficial owners of more than 5% of any class of our common stock, any members of the immediate family of any of the foregoing persons and any firms, corporations or other entities in which any of the foregoing persons is employed or is a partner or principal or in a similar position or in which such person has a 5% or greater beneficial ownership interest, which we refer to collectively as related parties, are not permitted to enter into a transaction with us without the prior consent of our board of directors acting through the audit committee or, in certain circumstances, the chairman of the audit committee. Any request for us to enter into a transaction with a related party, in which the amount involved exceeds \$100,000 and such related party would have a direct or indirect interest must first be presented to our audit committee, or in certain circumstances the chairman of our audit committee, for review, consideration and approval. In approving or rejecting any such proposal, our audit committee, or the chairman of our audit committee, is to consider the material facts of the transaction, including, but not limited to, whether the transaction is on terms no less favorable than terms generally available to an unaffiliated third party under the same or similar circumstances, the extent of the benefits to us, the availability of other sources of comparable products or services and the extent of the related party’s interest in the transaction.

PROPOSAL NO. 2: ADVISORY VOTE TO APPROVE NAMED EXECUTIVE OFFICER COMPENSATION

We are asking our stockholders to provide an advisory vote to approve the compensation of our named executive officers, including compensation tables and narrative disclosures as described in this Proxy Statement. This proposal, commonly known as a “say-on-pay” proposal, gives our stockholders the opportunity to express their views on the compensation of our named executive officers.

Please see the compensation tables and the narrative disclosures that accompany the compensation tables for greater detail about our executive compensation programs, including information about the fiscal year 2024 and 2023 compensation of our named executive officers.

We believe that our overall compensation program and philosophy support and help drive the Company’s long-term value creation, business strategy and operating performance objectives. We are asking our stockholders to indicate their support for our named executive officer compensation as described in this proxy statement by voting “FOR” the following resolution at the Annual Meeting:

“RESOLVED, that the compensation paid to the Company’s named executive officers, as disclosed pursuant to Item 402 of Regulation S-K, including the Compensation Discussion and Analysis, compensation tables and narrative discussion is hereby APPROVED.”

While this say-on-pay vote is advisory and does not bind the Company to any particular action, the Board and the Compensation Committee value your opinion. Accordingly, the Board and the Compensation Committee will consider the outcome of this vote when making future compensation decisions for the Company’s named executive officers.

Vote Required

The affirmative vote of a majority of the total votes cast virtually or by proxy is required to approve this proposal.

THE BOARD OF DIRECTORS UNANIMOUSLY RECOMMENDS THAT THE STOCKHOLDERS VOTE FOR THE APPROVAL OF THE COMPENSATION OF OUR NAMED EXECUTIVE OFFICERS, AS DISCLOSED IN THIS PROXY STATEMENT.

Executive Officers

The following table sets forth certain information regarding our current executive officers:

Name	Age	Position(s)	Served as an Officer Since
Jerome D. Jabbour	51	Chairman, Chief Executive Officer and President	2013
Keith A. Kucinski	55	Chief Financial Officer	2019

Our executive officers are elected by, and serve at the discretion of, our board of directors. The business experience for the past five years, and in some instances, for

prior years, of each of our executive officers is as follows:

Management

Jerome D. Jabbour, JD was appointed Chief Executive Officer in March 2018 and was named Chairman in March 2025. He has served as our President since March 2016. Prior to that he served as our Executive Vice President, Chief Business Officer, General Counsel and Secretary since October 2013 and as one of our directors from April 2012 until November 2013. Mr. Jabbour is also a Co-founder of Matinas BioPharma. Prior to joining our management team, he was the Executive Vice President and General Counsel of MediMedia USA, or MediMedia, from 2012 to October 2013, a privately held diversified healthcare services company. Prior to MediMedia, he was the Senior Vice President, Head of Global Legal Affairs of Wockhardt Limited (2008-2012), a global pharmaceutical and biotechnology company, and Senior Counsel and Assistant Secretary at Reliant (2004-2008). Earlier in his career, he held positions as Commercial Counsel at Alpharma, Inc. (2003-2004) and as a Corporate Associate at Lowenstein Sandler LLP (1999-2003). Mr. Jabbour earned his J.D. from Seton Hall University School of Law in New Jersey and a B.A. in Psychology from Loyola University in Baltimore.

Keith A. Kucinski, MBA, CPA was appointed Chief Financial Officer in January 2019. He most recently served as Chief Financial Officer at RemedyOne, a privately held healthcare consulting organization, during 2018. Prior to that, he served as Vice President & Treasurer at Par Pharmaceutical Companies, Inc., an operating company of Endo International plc, a leading generics and specialty-branded pharmaceutical company, from 2009 to 2015. In addition, Mr. Kucinski held various roles at Barr Pharmaceuticals, Inc., including Senior Director, Finance & Corporate Development and Assistant Treasurer & Senior Director, Finance. Mr. Kucinski is a Certified Public Accountant. He received his Bachelor of Business Administration in Accounting from the University of Notre Dame and an M.B.A. in Finance & Management from the Leonard N. Stern School of Business at New York University.

EXECUTIVE COMPENSATION

Summary Compensation Table – 2024

The following table presents information regarding the total compensation awarded to, earned by, or paid to our chief executive officer and the two most highly-compensated executive officers who were serving as executive officers as of December 31, 2024 for services rendered in all capacities to us for the years ended December 31, 2024 and December 31, 2023. These individuals are our named executive officers for 2025.

Name and Principal Position	Year	Salary (\$)	Bonus (\$)	Option Awards (\$) (1)	All Other Compensation (\$)	Total (\$)
Jerome D. Jabbour	2024	598,000	—	—	—	598,000
Chief Executive Officer	2023	598,000	244,375	757,176	—	1,599,551
James J. Ferguson	2024	468,000	121,680	—	—	589,680
Former Chief Medical Officer	2023	468,000	153,000	259,603	—	880,603
Keith Kucinski	2024	416,000	168,160	—	—	584,160
Chief Financial Officer	2023	416,000	176,000	216,347	—	808,347

(1) Amounts reflect the grant date fair value of option awards granted in 2024 and 2023 in accordance with Accounting Standards Codification Topic 718. These amounts do not correspond to the actual value that will be recognized by the named executive officers.

Narrative Disclosure to Summary Compensation Table

Employment Agreements with Our Named Executive Officers

Jerome Jabbour

On March 22, 2018, we entered into an employment agreement with Mr. Jabbour, as subsequently amended on March 3, 2023, and April 30, 2025. Under the terms of Mr. Jabbour's employment agreement, Mr. Jabbour received a signing bonus of \$84,000 and a base salary of \$350,000 per year. Mr. Jabbour's current salary is \$598,000. In addition, Mr. Jabbour is eligible to receive an annual bonus, which is targeted at 50% of his base salary but which may be adjusted by our Compensation Committee based on his individual performance and our performance as a whole. Mr. Jabbour is also eligible to receive option grants at the discretion of our Compensation Committee. If we terminate Mr. Jabbour's employment without cause or Mr. Jabbour resigns with good reason (absent a change of control), we are required to pay him severance of up to twelve months of his base salary plus COBRA benefits for twelve months, and his target annual bonus for the year pro rated to the date of termination. In addition, the vesting of 50% of his outstanding options issued prior to December 31, 2021, will be accelerated in full upon such termination and Mr. Jabbour will be provided with an extension through two years after the separation date of the exercise period for his vested stock options. If we terminate Mr. Jabbour's employment without cause during the 24-month period immediately following a change of control or Mr. Jabbour resigns with good reason during the 24-month period immediately following a change of control, we are required to pay him severance of 18 months of his base salary and 1.5 times his target annual bonus plus 18 months of COBRA benefits. In addition, his outstanding options will be vested in full and Mr. Jabbour will be provided with an extension through two years after the separation date of the exercise period for his vested stock options. In the event of a change of control on or before March 31, 2026, Mr. Jabbour will receive a cash retention bonus equal to the greater of (i) his target annual bonus for the fiscal year in which the change in control occurs, or (ii) \$299,000 if he remains employed with the Company through the date of such change in control. Mr. Jabbour is also subject to a customary non-disclosure agreement, pursuant to which Mr. Jabbour has agreed to be subject to a non-compete during the term of his employment and for a period of eighteen months following termination of his employment.

Keith Kucinski

On December 31, 2018, we entered into an employment agreement with Mr. Kucinski which was effective as of January 2, 2019, as subsequently amended on March 3, 2023, and April 30, 2025. Under the terms of Mr. Kucinski's employment agreement, Mr. Kucinski's base salary was \$250,000 per year, and is currently \$416,000. In addition, Mr. Kucinski is eligible to receive an annual bonus, which is targeted at 40% of his base salary but which may be adjusted by our Compensation Committee based on his individual performance and our performance as a whole. Mr. Kucinski is also eligible to receive option grants at the discretion of our Compensation Committee. If we terminate Mr. Kucinski's employment without cause or Mr. Kucinski resigns with good reason, we are required to pay him severance of up to twelve months of his base salary plus benefits. In addition, the vesting of 50% of his outstanding options issued prior to December 31, 2021, will be accelerated in full upon such termination. If we terminate Mr. Kucinski's employment without cause during the 12-month period immediately following a change of control or Kucinski resigns with good reason during the 12-month period immediately following a change of control, we are required to pay him severance of 12 months of his base salary and his target annual bonus plus 12 months of COBRA benefits. In addition, his outstanding options will be vested in full. In the event of a change of control on or before March 31, 2026, Mr. Kucinski will receive a cash retention bonus equal to the greater of (i) his target annual bonus for the fiscal year in which the change in control occurs, or (ii) \$166,400 if he remains employed with the Company through the date of such change in control. Mr. Kucinski is also subject to a customary non-disclosure agreement, pursuant to which Mr. Kucinski has agreed to be subject to a non-compete during the term of his employment and for a period of eighteen months following termination of his employment.

Outstanding Equity Awards at Fiscal Year-End Table – 2024

The following table summarizes, for each of the named executive officers, the number of shares of common stock underlying outstanding stock options held as of December 31, 2024.

Name	Option Awards			
	Number of securities underlying unexercised options (#) exercisable	Number of securities underlying unexercised options (#) unexercisable	Option exercise price (\$)	Option expiration date
Jerome D. Jabbour	18,956	51,045	\$ 12.35	Dec 14, 2033
	20,711	19,056	\$ 26.50	Dec 19, 2032
	25,563	7,600	\$ 46.00	Dec 13, 2031
	31,335	666	\$ 68.00	Dec 31, 2030
	20,001	-	\$ 113.50	Dec 31, 2029
	15,001	-	\$ 54.00	Feb 10, 2029
	20,000	-	\$ 49.02	Mar 21, 2028
	8,001	-	\$ 166.00	Feb 20, 2027
	7,001	-	\$ 21.50	Feb 4, 2026
	3,501	-	\$ 20.50	Jan 27, 2025
James J. Ferguson	5,990	-	\$ 26.50	Jan 29, 2025
	8,570	-	\$ 46.00	Jan 29, 2025
	10,782	-	\$ 68.00	Jan 29, 2025
	10,001	-	\$ 113.50	Jan 29, 2025
	7,001	-	\$ 54.50	Jan 29, 2025
Keith Kucinski	5,416	14,585	\$ 12.35	Dec 14, 2033
	6,511	5,990	\$ 26.50	Dec 19, 2032
	7,709	2,292	\$ 46.00	Dec 13, 2031
	9,793	208	\$ 68.00	Dec 31, 2030
	7,001	-	\$ 113.50	Dec 31, 2029
	5,501	-	\$ 54.00	Feb 10, 2029
	5,000	-	\$ 30.50	Jan 1, 2029

2013 Equity Compensation Plan

General

On August 2, 2013, our Board of Directors adopted the 2013 Equity Compensation Plan (the “2013 Plan”) pursuant to the terms described herein. The Plan was approved by the stockholders on August 7, 2013. Effective May 8, 2014, upon the approval of our Board of Directors and our stockholders, the Company amended and restated the 2013 Plan, primarily to include “evergreen” provisions, which provided that the number of shares of common stock available for issuance under the Plan is subject to an automatic annual increase on January 1 of each year beginning in 2015; to amend the definition of “fair market value”; and to increase the limits on awards under the 2013 Plan.

The general purpose of the 2013 Plan was to provide an incentive to our employees, directors, consultants and advisors by enabling them to share in the future growth of our business. The term of the 2013 Plan was for 10 years and expired on May 7, 2024. The Company intends to adopt the 2025 Equity Compensation Plan at its Annual Meeting on June 23, 2025, pending stockholder approval (Proposal No. 5).

As of December 31, 2024, there were 737,569 awards, including both restricted stock grants and option grants, issued and unexercised under the Plan and no remaining shares available for grant under the 2013 Plan.

Director Compensation Table – 2024

The following table summarizes the annual compensation for our non-employee directors during 2024, each of whom retired from the Board during 2025.

Name	Cash Compensation (\$)
Herbert Conrad	61,500
Kathryn Corzo	53,641
Eric Ende	79,000
Natasha Giordano	65,500
James S. Scibetta	75,000
Matthew Wikler	56,000

Compensation Committee Interlocks and Insider Participation

The Compensation Committee of the Board of Directors is currently composed of the following two non-employee directors: Edward Neugeboren, Chair, and Keith Murphy. No member of the Compensation Committee is or was formerly an officer or an employee of the Company during the last fiscal year. In addition, no executive officer of the Company serves on the compensation committee or board of directors of a company for which any of the Company’s directors serve as an executive officer.

Security Ownership of Certain Beneficial Owners and Management

The following table sets forth the number of shares of common stock beneficially owned as of May 9, 2025 by:

- each of our stockholders who is known by us to beneficially own 5% or more of our common stock;

- each of our named executive officers;
- each of our directors; and
- all of our directors and current executive officers as a group.

Beneficial ownership is determined based on the rules and regulations of the SEC. A person has beneficial ownership of shares if such individual has the power to vote and/or dispose of shares. This power may be sole or shared and direct or indirect. Applicable percentage ownership in the following table is based on 5,086,985 shares outstanding as of May 9, 2025. In computing the number of shares beneficially owned by a person and the percentage ownership of that person, shares of common stock that are subject to options or warrants held by that person and exercisable as of, or within 60 days of, May 9, 2025, are counted as outstanding. These shares, however, are not counted as outstanding for the purposes of computing the percentage ownership of any other person(s). Except as may be indicated in the footnotes to this table and pursuant to applicable community property laws, each person named in the table has sole voting and dispositive power with respect to the shares of common stock set forth opposite that person's name. Unless indicated below, the address of each individual listed below is c/o Matinas BioPharma Holdings, Inc., 1545 Route 206 South, Suite 302, Bedminster, NJ 07921.

Name of Beneficial Owner	Number of Shares Beneficially Owned	Percentage of Shares Beneficially Owned
<i>5% Stockholders</i>		
Highbridge Capital Management, LLC (1)	466,666(2)	8.4%
Sanitam Partners LLC (3)	17,104,899(4)(5)	9.99%
<i>Directors and Executive Officers</i>		
Jerome D. Jabbour (6)	190,810	3.6%
Evelyn D'An	-	*%
Keith Murphy	-	*%
Edward Neugeboren	-	*%
Robin Smith	-	*%
Keith A. Kucinski (7)	54,343	1.1%
Directors and Executive Officers as a group (2 persons) (8)	245,153	4.6%

* Less than 1%

(1) Based on information contained in a Schedule 13G filed on October 25, 2024 and other information known to the Company. The address for the reporting person is 277 Park Avenue, 23rd Floor, New York, New York, 10172.

(2) Includes 466,666 shares of Common Stock issuable upon the exercise of warrants that cannot be exercised to the extent the holder would beneficially own, after such exercise, more than 9.99% of the outstanding common stock of the Company.

(3) Based solely on information contained in a Schedule 13D/A filed on April 10, 2025. The address of the reporting person is 420 Lexington Avenue, Suite 2446, New York, New York 10170.

(4) Includes 16,894,212 shares of common stock issuable upon the conversion of preferred stock and exercise of warrants that cannot be exercised to the extent the holder would beneficially own, after such exercise, more than 9.99% of the outstanding common stock of the Company. The reporting person and its affiliates, Adam K Stern, HEZBAY Holdings LLC, Ari Kluger, Platinum Point Capital, LLC, Brian Freifeld, Pembroke & Partners LLC and Robert J. Eide, have shared voting and dispositive power over of such 16,894,212 shares of common stock.

(5) Includes 210,687 shares of common stock held by Mr. Stern.

(6) Includes 181,603 shares of common stock issuable upon exercise of options.

(7) Includes 52,453 shares of common stock issuable upon exercise of options.

(8) See notes (6) and (7).

Pay Versus Performance Disclosure

In accordance with rules adopted by the Securities and Exchange Commission pursuant to the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, we provide the following disclosure regarding executive compensation for our principal executive officer ("PEO") and Non-PEO NEOs and Company performance for the fiscal years listed below. The Compensation Committee did not consider the pay versus performance disclosure below in making its pay decisions for any of the years shown.

Year	Summary Compensation Table Total for Jerome Jabbour¹ (\$)	Compensation Actually Paid to Jerome Jabbour^{1, 2, 3} (\$)	Average Summary Compensation Table Total for Non-PEO NEOs¹ (\$)	Average Compensation Actually Paid to Non-PEO NEOs^{1, 2, 3} (\$)	Value of Initial Fixed \$100 Investment based on:⁴ TSR (\$)	Net Income (\$ Millions)
2024	598,000	627,231	586,920	590,057	1.01	(24)
2023	1,599,551	843,210	865,960	596,208	21.41	(23)
2022	1,674,207	325,448	859,639	392,816	49.50	(21)

1. Jerome Jabbour was our PEO for each year presented. The individuals comprising the Non-PEO NEOs for 2022 and 2023 were James Ferguson and Theresa Matkovits. For 2024, the Non-PEO NEOs were James Ferguson and Keith Kucinski.

2. The amounts shown for Compensation Actually Paid have been calculated in accordance with Item 402(v) of Regulation S-K and do not reflect compensation actually earned, realized, or received by the Company's NEOs. These amounts reflect the Summary Compensation Table Total with certain adjustments as described in footnote 3 below.

3. Compensation Actually Paid reflects the exclusions and inclusions of certain amounts for the PEO and the Non-PEO NEOs as set forth below. Equity values are calculated in accordance with FASB ASC Topic 718. Amounts in the Exclusion of Option Awards column are the totals from the Option Awards column set forth in the Summary Compensation Table.

Year	Summary Compensation Table Total for Jerome Jabbour (\$)	Exclusion of Option Awards for Jerome Jabbour (\$)	Inclusion of Equity Values for Jerome Jabbour (\$)	Compensation Actually Paid to Jerome Jabbour (\$)
2024	598,000	—	29,231	627,231
Year	Average Summary Compensation Table Total for Non-PEO NEOs (\$)	Average Exclusion of Stock Awards for Non-PEO NEOs (\$)	Average Inclusion of Equity Values for Non-PEO NEOs (\$)	Average Compensation Actually Paid to Non-PEO NEOs (\$)
2024	586,920	—	3,137	590,057

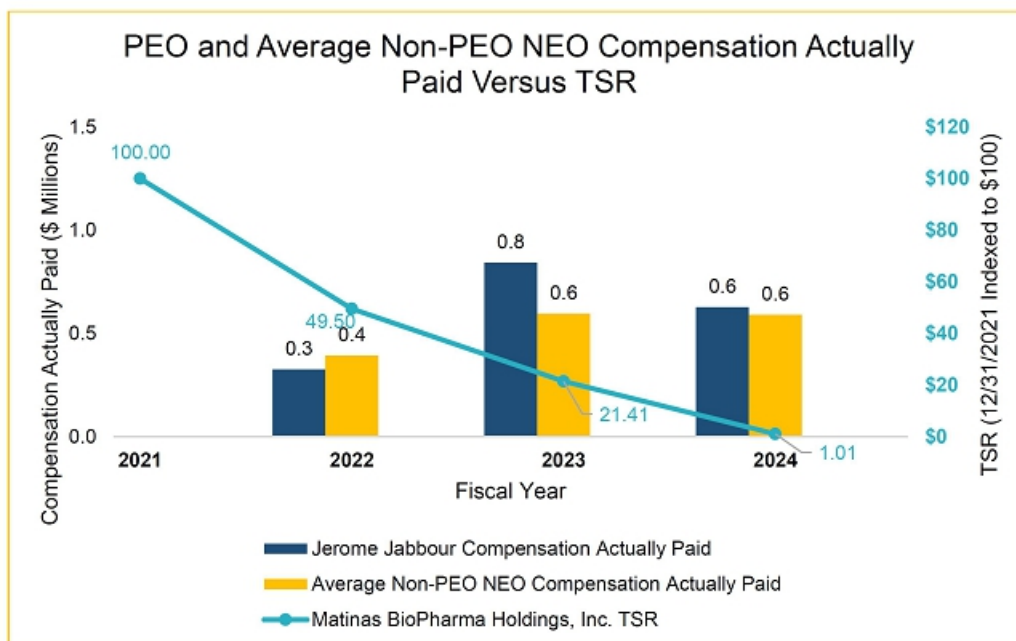
The amounts in the Inclusion of Equity Values in the tables above are derived from the amounts set forth in the following tables:

Year	Year-End Fair Value of Equity Awards Granted During Year That Remained Unvested as of Last Day of Year for Jerome Jabbour (\$)	Change in Fair Value from Last Day of Prior Year to Last Day of Year of Unvested Equity Awards for Jerome Jabbour (\$)	Vesting-Date Fair Value of Equity Awards Granted During Year that Vested During Year for Jerome Jabbour (\$)	Change in Fair Value from Last Day of Prior Year to Vesting Date of Unvested Equity Awards that Vested During Year for Jerome Jabbour (\$)	Fair Value at Last Day of Prior Year of Equity Awards Forfeited During Year for Jerome Jabbour (\$)	Total - Inclusion of Equity Values for Jerome Jabbour (\$)
2024	—	17,651	—	11,580	—	29,231
Year	Average Year-End Fair Value of Equity Awards Granted During Year That Remained Unvested as of Last Day of Year for Non-PEO NEOs (\$)	Average Change in Fair Value from Last Day of Prior Year to Last Day of Year of Unvested Equity Awards for Non-PEO NEOs (\$)	Average Vesting-Date Fair Value of Equity Awards Granted During Year that Vested During Year for Non-PEO NEOs (\$)	Average Change in Fair Value from Last Day of Prior Year to Vesting Date of Unvested Equity Awards that Vested During Year for Non-PEO NEOs (\$)	Average Fair Value at Last Day of Prior Year of Equity Awards Forfeited During Year for Non-PEO NEOs (\$)	Total - Average Inclusion of Equity Values for Non-PEO NEOs (\$)
2024	—	2,521	—	2,931	(2,315)	3,137

4. Assumes \$100 was invested in the Company for the period starting December 31, 2021, through the end of the listed year. Historical stock performance is not necessarily indicative of future stock performance.

Relationship Between PEO and Non-PEO NEO Compensation Actually Paid and Total Shareholder Return ("TSR")

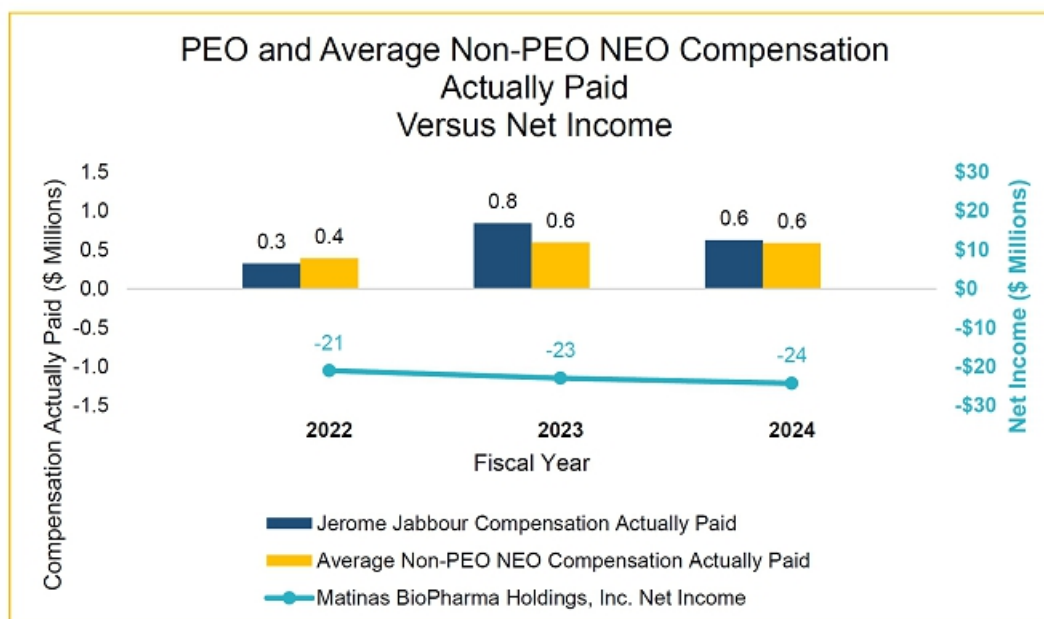
The following chart sets forth the relationship between Compensation Actually Paid to our PEO, the average of Compensation Actually Paid to our Non-PEO NEOs, and the cumulative TSR over the three most recently completed fiscal years for the Company.



17

Relationship Between PEO and Non-PEO NEO Compensation Actually Paid and Net Income

The following chart sets forth the relationship between Compensation Actually Paid to our PEO, the average of Compensation Actually Paid to our Non-PEO NEOs, and our net income during the three most recently completed fiscal years.



18

PROPOSAL 3: REVERSE STOCK SPLIT PROPOSAL

General

The Board has unanimously approved, and recommended that our stockholders approve, up to two amendments to our Certificate of Incorporation, as previously amended (the “Certificate of Incorporation”) in substantially the form attached hereto as Annex A (each, a “Reverse Stock Split Amendment”), to effect up to two reverse stock splits at an aggregate ratio in the range of 1-for-2 to 1-for-199 (each, a “Reverse Stock Split”), to be determined at the discretion of the Board, whereby each outstanding 2 to 199 shares of our common stock would be combined, converted and changed into 1 share of our common stock. This proposal is referred to in this Proxy Statement as the “Reverse Stock Split Proposal.” If the stockholders approve the Reverse Stock Split Proposal, the Board will have discretion to determine, as it deems to be in the best interest of our stockholders, the specific ratio to be used within the range described above and the timing and number of reverse stock splits, if any, within the range described above, which must occur any time prior to the second anniversary of its approval by the stockholders. The Board will not approve any Reverse Stock Split that violates any of the rules or regulations of the New York Stock Exchange.

A Reverse Stock Split will be realized simultaneously for all outstanding shares of common stock and the ratio will be the same for all outstanding shares of common stock. A Reverse Stock Split will affect all holders of our common stock uniformly and each stockholder will hold the same percentage of common stock outstanding immediately following a Reverse Stock Split as that stockholder held immediately prior to the Reverse Stock Split, except for adjustments that may result from the treatment of

fractional shares as described below. The Reverse Stock Split Amendment will not change the total number of authorized shares of preferred stock, and the par value of the common stock will remain at \$0.0001 per share.

The Board unanimously approved and recommended seeking stockholder approval of this Reverse Stock Split Proposal on April 30, 2025. The Board may determine in its discretion not to affect any Reverse Stock Split and not to file the Reverse Stock Split Amendment. Subject to approval of the Reverse Stock Split Amendment through the approval of this Reverse Stock Split Proposal, no further action on the part of our stockholders will be required to either implement or abandon any Reverse Stock Split. As detailed below, if the Board does not affect any Reverse Stock Split by filing a Reverse Stock Split Amendment before the close of business on June 23, 2027, the Board will no longer be permitted to effect any Reverse Stock Split pursuant to this proposal as the authority of the Board to effect any Reverse Stock Splits will expire as of the close of business on June 23, 2027.

The Board's determination as to whether and when to effect up to two Reverse Stock Splits and the specific ratio to be used in each case will be based on a number of factors, including the closing bid price for our common stock, prevailing market conditions, existing and expected trading prices for our common stock, actual or forecasted results of operations, and the likely effect of such results on the market price of our common stock.

The Reverse Stock Split Proposal is not being proposed in response to any effort of which we are aware to accumulate shares of our common stock or obtain control of us, nor is it a plan by management to recommend a series of similar actions to our Board or our stockholders.

There are certain risks associated with one or more Reverse Stock Splits, and we cannot accurately predict whether, or assure that, a Reverse Stock Split will produce or maintain the desired results (for more information on the risks, see the section below entitled "Certain Risks Associated with the Reverse Stock Split Proposal"). However, our Board believes that the benefits to us and our stockholders outweigh the risks and recommends that you vote in favor of the Reverse Stock Split Proposal.

Purposes of the Proposed Reverse Stock Split

We believe that a Reverse Stock Split could enhance the appeal of our common stock to the financial community, including institutional investors, and the general investing public. We believe that a number of institutional investors and investment funds are reluctant to invest in lower-priced securities and that brokerage firms may be reluctant to recommend lower-priced securities to their clients, which may be due in part to a perception that lower-priced securities are less promising as investments, are less liquid in the event that an investor wishes to sell its shares, or are less likely to be followed by institutional securities research firms and therefore more likely to have less third-party analysis of the company available to investors. We believe that the reduction in the number of issued and outstanding shares of our common stock caused by a Reverse Stock Split, together with the anticipated increased stock price immediately following and resulting from the Reverse Stock Split, may encourage broader interest and trading in our common stock and thus possibly promote greater liquidity for our stockholders, thereby resulting in a broader market for our common stock than that which currently exists.

19

Moreover, we may in the future determine that submission of an application to the New York Stock Exchange or The NASDAQ Stock Market for "uplisting" of our common stock is in the best interest of our stockholders. The New York Stock Exchange and each tier of the Nasdaq has its own listing criteria. We may in the future consider targeting the New York Stock Exchange or NASDAQ Global Market, both of which require, among other criteria, an initial bid price of at least \$4.00 per share and, following initial listing, maintenance of a continued price of at least \$1.00 per share. On the record date, the closing price of our common stock on the NYSE MKT was \$0.62 per share. A decrease in the number of issued and outstanding shares of our common stock resulting from a Reverse Stock Split should, absent other factors, assist in ensuring that our per share market price of our common stock remains above the required price, and will increase our ability to meet the continued listing standards of the NYSE MKT. However, we cannot provide any assurance that (i) we will pursue a listing on the New York Stock Exchange, the Nasdaq Global Market, or any other tier of The NASDAQ Stock Market or (ii) even if we do, our minimum bid price would remain over the minimum bid price requirement of the New York Stock Exchange or tier of the Nasdaq Stock Market on which we may list.

Lastly, even if this proposal is approved, the Board will have complete discretion as to whether or not to consummate a or any Reverse Stock Splits and the specific ratio to be used in each case, not exceed two Reverse Stock Splits at the aggregate split ratio described above. We cannot assure you that all or any of the anticipated beneficial effects on the trading market for our common stock will occur. The Board cannot predict with certainty what effect one or more Reverse Stock Split will have on the market price of our common stock, particularly over the longer term. Some investors may view a Reverse Stock Split negatively, which could result in a decrease in our market capitalization. Additionally, any improvement in liquidity due to increased institutional or brokerage interest or lower trading commissions may be offset by the lower number of outstanding shares. In addition, investors might consider the increased proportion of unissued authorized shares to issued shares to have an anti-takeover effect under certain circumstances because the proportion allows for dilutive issuances.

Determination of Ratio

In determining a Reverse Stock Split ratio, the Board will consider numerous factors, including:

- the historical and projected performance of our common stock;
- prevailing market conditions;
- general economic and other related conditions prevailing in our industry and in the marketplace;
- the projected impact of the Reverse Stock Split ratio on trading liquidity in our common stock;
- our capitalization (including the number of shares of our common stock issued and outstanding);
- the prevailing trading price for our common stock and the volume level thereof; and
- potential devaluation of our market capitalization as a result of a Reverse Stock Split.

Principal Effects of a Reverse Stock Split

A Reverse Stock Split refers to a reduction in the number of outstanding shares of a class of a corporation's capital stock, which may be accomplished, as in this case, by reclassifying and combining all of our outstanding shares of common stock into a proportionately smaller number of shares. After the effective date of a Reverse Stock Split, each stockholder will own a reduced number of shares of common stock. For example, if the Board decides to implement the 1-for-2 reverse stock split, then a stockholder holding 10,000 shares of our common stock before the reverse stock split would instead hold 5,000 shares of our common stock immediately after the Reverse Stock Split. However, except for adjustments that may result from the treatment of fractional shares as described below, the proposed Reverse Stock Split will affect all stockholders uniformly and will not affect any stockholder's percentage ownership interest in our company or proportionate voting power as described below. All shares of common stock will also remain validly issued, fully paid and non-assessable.

We are currently authorized to issue up to 250,000,000 shares of common stock, par value \$0.0001 per share, of which 5,086,985 shares were issued and outstanding as of May 1, 2025, and 10,000,000 shares of preferred stock, par value \$0.0001 per share, 3,300 of which were issued and outstanding as of May 1, 2025. If the Increase to Authorized Proposal is approved and the Board increases the number of shares of common stock authorized to 500,000,000, if we effect a Reverse Stock Split and file a Reverse Stock Split Amendment, the number of shares of our authorized common stock will stay at 500,000,000, regardless of the Reverse Stock Split ratio, and the number of shares of our authorized preferred stock will remain unchanged. The Reverse Stock Split Amendment will also not affect the par value of our common stock, which, will remain at \$0.0001 per share, or our preferred stock, which will remain at \$0.0001 per share.

The following table contains approximate information relating to our common stock immediately following a Reverse Stock Split under certain possible exchange ratios, based on share information as of May 1, 2025 without giving effect to any adjustments for fractional shares of common stock or the issuance of any derivative securities. All share numbers are rounded down to the nearest whole share but otherwise do not reflect the potential effect of rounding up for fractional shares that may result from the reverse stock split.

	Pre-Reverse Stock Split	Assuming approval of the Increase to Authorized Proposal	1-for-10	1-for-50	1-for-100	1-for-199
Number of authorized shares of Common Stock	250,000,000	500,000,000	500,000,000	500,000,000	500,000,000	500,000,000
Number of outstanding shares of common stock	5,086,985	5,086,985	508,699	101,740	50,870	25,563
Number of shares of common stock issuable upon exercise of outstanding stock options	451,187	451,187	45,119	9,024	4,512	2,267
Number of shares of common stock issuable upon exercise of outstanding warrants	11,929,475	11,929,475	1,192,948	238,590	119,295	59,948
Number of shares of common stock issuable upon conversion of outstanding preferred stock	5,631,404	5,631,404	563,140	112,628	56,314	28,299
Number of shares of Common Stock authorized, but unissued and unreserved	226,900,949	476,900,949	497,690,094	499,538,018	499,769,009	499,883,924

In addition, a Reverse Stock Split may increase the number of stockholders who own odd lots (less than 100 shares). Any stockholder who owns fewer than 200 to 1,500 shares of common stock, depending on the final ratio, prior to a Reverse Stock Split will own fewer than 100 shares of common stock following the reverse stock split. Stockholders who hold odd lots typically experience an increase in the cost of selling their shares and may have greater difficulty in effecting sales. Any stockholder who otherwise would be entitled to receive a fractional share because they hold a number of shares not evenly divisible by the Reverse Stock Split ratio will automatically be entitled to receive an additional fraction of a share of common stock to round up to the next whole share, as further described below under “Treatment of Fractional Shares”. Although the number of our outstanding shares of common stock would decrease as a result of the Reverse Stock Split, the Board does not intend to use the Reverse Stock Split as a part of, or a first step in, a “going private” transaction within the meaning of Rule 13e-3 of the Securities Exchange Act of 1934, as amended (the “Exchange Act”). There is no plan or contemplated plan by our Company to take itself private as of the date of this Proxy Statement.

Our common stock is currently registered under Section 12(b) of the Exchange Act, and we are subject to the periodic reporting and other requirements of the Exchange Act. The proposed Reverse Stock Split will not affect the registration of our common stock under the Exchange Act. If a proposed Reverse Stock Split is implemented, our common stock will continue to be reported on the NYSE American under the symbol “MTNB”.

Certain Risks Associated with a Reverse Stock Split

Before voting on the Reverse Stock Split Proposal, you should consider the following risks associated with the implementation of a Reverse Stock Split:

- Although we expect that a Reverse Stock Split will result in an increase in the market price of our common stock, we cannot assure you that a Reverse Stock Split, if implemented, will increase the market price of our common stock in proportion to the reduction in the number of shares of our common stock outstanding or result in a permanent increase in the market price. Accordingly, the total market capitalization of our common stock after a proposed Reverse Stock Split may be lower than the total market capitalization before the proposed Reverse Stock Split and, in the future, the market price of our common stock following a Reverse Stock Split may not exceed or remain higher than the market price prior to the proposed reverse stock split.
- The effect a Reverse Stock Split may have upon the market price of our common stock cannot be predicted with any certainty, and the history of similar reverse stock splits for companies in similar circumstances to ours is varied. The market price of our common stock is dependent on many factors, including our business and financial performance, general market conditions, prospects for future success and other factors detailed from time to time in the reports we file with the SEC. If a Reverse Stock Split is implemented and the market price of our common stock declines, the percentage decline as an absolute number and as a percentage of our overall market capitalization may be greater than would occur in the absence of a Reverse Stock Split. Moreover, this effect will be compounded if we implement two Reverse Stock Splits.
- A Reverse Stock Split may result in some stockholders owning “odd lots” of less than 100 shares of our common stock on a post-split basis. These odd lots may be more difficult to sell, or require greater transaction costs per share to sell, than shares in “round lots” of even multiples of 100 shares.
- While the Board believes that a higher stock price may help generate investor interest, there can be no assurance that one or more Reverse Stock Splits will result in a per share price that will attract institutional investors or investment funds or that such share price will satisfy the investing guidelines of institutional investors or investment funds. As a result, the trading liquidity of our common stock may not necessarily improve.
- Although the Board believes that the decrease in the number of shares of our common stock outstanding as a consequence of one or more Reverse Stock Splits and the anticipated increase in the market price of our common stock could encourage interest in our common stock and possibly promote greater liquidity for our stockholders, such liquidity could also be adversely affected by the reduced number of shares outstanding after a Reverse Stock Split.
- Furthermore, because approval of a Reverse Stock Split Amendment will not result in a decrease to the number of shares of common stock authorized, the number of shares of our common stock available for issuance following the implementation of a Reverse Stock Split would increase to the extent the Reverse Stock Split reduces the number of outstanding shares of our common stock relative to the number of authorized shares. Such available shares may be used for future corporate purposes, including future acquisitions, investment opportunities, the establishment of collaboration or other strategic agreements, capital raising transactions involving equity or convertible debt securities, future at the market offerings of common stock, or issuance under current or future employee equity plans, and the issuance of equity securities in connection with such transactions may result in potentially significant dilution of our current stockholders’ ownership interests in us.

Treatment of Fractional Shares

Stockholders will not receive fractional post-Reverse Stock Split shares in connection with a Reverse Stock Split. Instead, record holders of our common stock who otherwise would be entitled to receive a fractional share because they hold a number of shares not evenly divisible by the Reverse Stock Split ratio will automatically be entitled to receive an additional fraction of a share of common stock to round up to the next whole share. In any event, cash will not be paid for fractional shares.

Effect on Beneficial Stockholders

Stockholders holding our common stock through a bank, broker or other nominee should note that such banks, brokers or other nominees may have different procedures for processing a Reverse Stock Split than those that would be put in place by us for registered stockholders that hold such shares directly. If you hold your shares with such a bank, broker or other nominee and if you have questions in this regard, you are encouraged to contact your bank, broker or nominee.

Effect on Registered Certificated Shares

Some registered stockholders may hold their shares of common stock in certificate form or a combination of certificate and book-entry form. If any of your shares of our common stock are held in certificate form, you will receive a letter of transmittal from our transfer agent as soon as practicable after the effective date of the reverse stock split. The letter of transmittal will contain instructions on how to surrender your certificate(s) representing your presplit shares to the transfer agent. Upon receipt of your properly completed and executed letter of transmittal and your stock certificate(s), you will be issued the appropriate number of shares either in certificate form or electronically in book-entry form under the direct registration system. No new stock certificates will be issued to a stockholder until such stockholder has surrendered such stockholder's outstanding certificate(s) together with the properly completed and executed letter of transmittal to the transfer agent.

Beginning on the effective date of a Reverse Stock Split, each certificate representing pre-reverse stock split shares will be deemed for all corporate purposes to evidence ownership of post-Reverse Stock Split shares.

STOCKHOLDERS SHOULD NOT DESTROY ANY PRE-SPLIT STOCK CERTIFICATES AND SHOULD NOT SUBMIT ANY CERTIFICATES UNTIL THEY ARE REQUESTED TO DO SO.

Effect on Registered Book-Entry Holders

Our registered stockholders may hold some or all of their shares electronically in book-entry form under the direct registration system for securities. These stockholders will not have stock certificates evidencing their ownership of our common stock. They are, however, provided with a statement reflecting the number of shares registered in their accounts. If you hold shares in book-entry form, you do not need to take any action to receive your post-split shares. If you are entitled to post-split shares, a transaction statement will automatically be sent to your address of record indicating the number of shares you hold.

Procedure for Effecting a Reverse Stock Split

If our stockholders approve this proposal, and the Board elects to effect one or more Reverse Stock Splits, we will affect a Reverse Stock Split by filing the Reverse Stock Split Amendment with the Secretary of State of the State of Delaware. A Reverse Stock Split will become effective and occur automatically, at the effective time set forth in the Reverse Stock Split Amendment, without any action on the part of our stockholders and without regard to the date that stock certificates representing any certificated shares prior to the Reverse Stock Split are physically surrendered for new stock certificates. Beginning at the effective time of a Reverse Stock Split, each certificate representing pre-Reverse Stock Split shares will be deemed for all corporate purposes to evidence ownership of post-Reverse Stock Split shares. The text of the Reverse Stock Split Amendment is subject to modification to include such changes as may be required by the office of the Secretary of State of the State of Delaware and as the Board deems necessary and advisable to affect the Reverse Stock Split.

The Board reserves the right, notwithstanding stockholder approval and without further action by the stockholders, to elect not to proceed with any Reverse Stock Split if, at any time prior to filing a Reverse Stock Split Amendment, the Board, in its sole discretion, determines that it is no longer in the best interests of us and our stockholders to proceed with a Reverse Stock Split. By voting in favor of the Reverse Stock Split Proposal, you are expressly also authorizing the Board to delay (until June 23, 2027) or abandon the Reverse Stock Split. If the Reverse Stock Split Amendment has not been filed with the Secretary of State of the State of Delaware by the close of business on June 23, 2027, the Board will abandon the Reverse Stock Split.

Material U.S. Federal Income Tax Consequences of the Reverse Stock Split

The following is a summary of material U.S. federal income tax consequences of a Reverse Stock Split to our U.S. Holders (as defined below). The summary is based on the Internal Revenue Code of 1986, as amended (the "Code"), applicable Treasury Regulations promulgated thereunder, judicial authority and current administrative rulings and practices as in effect on the date of this Proxy Statement. Changes to the laws could alter the tax consequences described below, possibly with retroactive effect. We have not sought and will not seek an opinion of counsel or a ruling from the Internal Revenue Service regarding the federal income tax consequences of a Reverse Stock Split. This discussion only addresses U.S. Holders who hold common stock as capital assets. It does not purport to be complete and does not address U.S. Holders subject to special tax treatment under the Code, including, without limitation, financial institutions, tax-exempt organizations, insurance companies, dealers in securities, foreign stockholders, stockholders who hold their pre-reverse stock split shares as part of a straddle, hedge or conversion transaction, and stockholders who acquired their pre-reverse stock split shares pursuant to the exercise of employee stock options or otherwise as compensation. If a partnership (or other entity treated as a partnership for U.S. federal income tax purposes) is the beneficial owner of our common stock, the U.S. federal income tax treatment of a partner in the partnership will generally depend on the status of the partner and the activities of the partnership. Accordingly, partnerships (and other entities treated as partnerships for U.S. federal income tax purpose) holding our common stock and the partners in such entities should consult their own tax advisors regarding the U.S. federal income tax consequences of the proposed Reverse Stock Split to them. In addition, the following discussion does not address the tax consequences of the Reverse Stock Split under state, local and foreign tax laws. Furthermore, the following discussion does not address any tax consequences of transactions effectuated before, after or at the same time as the Reverse Stock Split, whether or not they are in connection with the Reverse Stock Split.

For purposes of the discussion below, a "U.S. Holder" is a beneficial owner of shares of the Company's common stock that for U.S. federal income tax purposes is: (i) an individual citizen or resident of the United States; (ii) a corporation (or other entity taxable as a corporation for U.S. federal income tax purposes) created or organized in or under the laws of the United States, any state therein or the District of Columbia; (iii) an estate, the income of which is subject to U.S. federal income taxation regardless of its source; or (iv) a trust with respect to which a U.S. court is able to exercise primary supervision over its administration and one or more U.S. persons have the authority to control all of its substantial decisions of the trust, or that has a valid election in effect to be treated as a U.S. person under applicable U.S. Treasury Regulations.

A Reverse Stock Split is expected to constitute a "recapitalization" for U.S. federal income tax purposes pursuant to Section 368(a)(1)(E) of the Code. A U.S. Holder generally will not recognize gain or loss on the deemed exchange of shares pursuant to the Reverse Stock Split, except potentially with respect to any additional fractions of a share of our common stock received as a result of the rounding up of any fractional shares that otherwise would be issued, as discussed below. Subject to the following discussion regarding a U.S. Holder's receipt of a whole share of the Company's common stock in lieu of a fractional share, a U.S. Holder's aggregate tax basis in the shares of common stock received in the Reverse Stock Split will equal the U.S. Holder's basis in its old shares of common stock and such U.S. Holder's holding period in the shares received will include the holding period in its old shares exchanged. The Treasury Regulations provide detailed rules for allocating the tax basis and holding period of shares of common stock surrendered in a recapitalization to shares received in the recapitalization. U.S. Holders of our common stock acquired on different dates and at different prices should consult their tax advisors regarding the allocation of the tax basis and holding period of such shares.

As described above under “Treatment of Fractional Shares,” no fractional shares of the Company’s common stock will be issued as a result of a Reverse Stock Split. Instead, record holders of our common stock who otherwise would be entitled to receive a fractional share because they hold a number of shares not evenly divisible by the Approved Split Ratio will automatically be entitled to receive an additional fraction of a share of common stock to round up to the next whole share. A U.S. Holder who receives one whole share of the Company’s common stock in lieu of a fractional share may recognize income or gain in an amount not to exceed the excess of the fair market value of such share over the fair market value of the fractional share to which such U.S. Holder was otherwise entitled. The Company is not making any representation as to whether the receipt of one whole share in lieu of a fractional share will result in income or gain to any stockholder, and stockholders are urged to consult their own tax advisors as to the possible tax consequences of receiving a whole share in lieu of a fractional share in a Reverse Stock Split.

We will not recognize any gain or loss as a result of the proposed Reverse Stock Split.

THE PRECEDING DISCUSSION IS INTENDED ONLY AS A SUMMARY OF CERTAIN FEDERAL U.S. INCOME TAX CONSEQUENCES OF THE REVERSE STOCK SPLIT AND DOES NOT PURPORT TO BE A COMPLETE ANALYSIS OR DISCUSSION OF ALL POTENTIAL TAX EFFECTS RELEVANT THERETO. YOU SHOULD CONSULT YOUR OWN TAX ADVISORS AS TO THE PARTICULAR FEDERAL, STATE, LOCAL, FOREIGN AND OTHER TAX CONSEQUENCES OF THE REVERSE STOCK SPLIT IN LIGHT OF YOUR SPECIFIC CIRCUMSTANCES.

Accounting Matters

The par value per share of our common stock will remain unchanged at \$0.0001 per share after the reverse stock split. As a result, our stated capital, which consists of the par value per share of our common stock multiplied by the aggregate number of shares of our common stock issued and outstanding, will be reduced proportionately at the effective time of the reverse stock split. Correspondingly, our additional paid-in capital, which consists of the difference between our stated capital and the aggregate amount paid to us upon the issuance of all currently outstanding shares of our common stock, will be increased by a number equal to the decrease in stated capital. Further, net loss per share, book value per share and other per share amounts will be increased as a result of the reverse stock split because there will be fewer shares of our common stock outstanding.

No Appraisal Rights

Our stockholders are not entitled to appraisal rights under Delaware law or our Certificate of Incorporation with respect to the Reverse Stock Split Amendment, and we will not independently provide our stockholders with any such right.

Required Vote

Approval of the Reverse Stock Split Proposal requires the affirmative vote of a majority of the total votes cast virtually or by proxy. There will be no broker non-votes with respect to this proposal. Abstentions will have the effect of a vote “AGAINST” this proposal.

Recommendation of the Board

THE BOARD OF DIRECTORS UNANIMOUSLY RECOMMENDS THAT THE STOCKHOLDERS VOTE FOR THE REVERSE STOCK SPLIT PROPOSAL.

PROPOSAL 4: PROPOSAL TO INCREASE THE NUMBER OF AUTHORIZED SHARES OF COMMON STOCK FROM 250,000,000 TO 500,000,000

Introduction

Our Certificate of Incorporation, as amended and restated, currently authorizes the issuance of up to 250,000,000,000 shares of common stock and 10,000,000 shares of preferred stock. The Board has approved an amendment to increase the number of authorized shares of common stock from 250,000,000 to 500,000,000 shares.

The proposed form of Certificate of Amendment to the Third Amended and Restated Certificate of Incorporation to effect the increase in our authorized common stock is attached as Annex B to this Proxy Statement.

Following the increase in authorized shares as contemplated in the Certificate of Amendment to the Third Amended and Restated Certificate of Incorporation (the “Certificate of Amendment”), 500,000,000 shares of common stock and 10,000,000 shares of preferred stock will be authorized. There will be no changes to the issued and outstanding shares of common stock or preferred stock as a result of the amendment.

Reasons for the Increase Certificate of Amendment

The Board has determined that the increase in our authorized shares of common stock is in the best interests of the Company and unanimously recommends approval by the stockholders. The Board believes that the availability of additional authorized shares of common stock is required for several reasons including, but not limited to, the additional flexibility to issue common stock for a variety of general corporate purposes as the Board may determine to be desirable including, without limitation, future financings, investment opportunities, acquisitions, or other distributions and stock splits (including splits effected through the declaration of stock dividends).

As of the Record Date, 5,086,985 shares of our common stock were issued and outstanding, and 3,300 shares of Preferred Stock, initially convertible into 5,631,404 shares of common stock.

Our working capital requirements may increase in the future and may require us to raise additional capital through additional equity financings in the future. If we issue additional shares of common stock or other securities convertible into shares of our common stock in the future, it could dilute the voting rights of existing stockholders and could also dilute earnings per share and book value per share of existing stockholders. The increase in authorized number of common stock could also discourage or hinder efforts by other parties to obtain control of the Company, thereby having an anti-takeover effect. The increase in authorized number of common stock is not being proposed in response to any known threat to acquire control of the Company.

Current Plans, Proposals or Arrangements to Issue Shares of Common Stock

As of the Record Date, the Company had:

- 451,187 shares of common stock issuable upon the exercise of outstanding stock options, with a weighted average exercise price of \$44.20 per share;
- 5,631,404 shares of common stock issuable upon the conversion of our Preferred Stock;
- 11,929,475 shares of Common stock issuable upon the exercise of outstanding warrants, with weighted average exercise price of \$1.59 per share;

Following the approval and filing of the amendment, the Company may explore additional financing opportunities or strategic transactions that would require the issuance of additional shares of common stock, but no such plans are currently in existence and the Company has not begun any negotiations with any party related thereto. If we issue additional shares, the ownership interest of holders of our capital stock will be diluted.

Other than as set forth above, the Company has no current plans, proposals or arrangements to issue any of the additional authorized shares of common stock that

Effects of the Increase in Authorized Common Stock

Following the filing of the Certificate of Amendment with the Secretary of State of Delaware, we will have the authority to issue up to 500,000,000 shares of common stock. These shares may be issued without stockholder approval at any time (except as such approval may be required in particular cases by our charter documents, applicable law or the rules of any stock exchange on which our securities may then be listed), in the sole discretion of the Board. The authorized and unissued shares may be issued for cash or for any other purpose that is deemed in the best interests of the Company.

The increase in our authorized common stock could have a number of effects on the Company's stockholders depending upon the exact nature and circumstances of any actual issuances of authorized but unissued shares. If we issue additional shares of common stock or other securities convertible into shares of our common stock in the future, it could dilute the voting rights of existing stockholders and could also dilute earnings per share and book value per share of existing stockholders. The increase in authorized number of common stock could also discourage or hinder efforts by other parties to obtain control of the Company, thereby having an anti-takeover effect.

The increase in our authorized common stock will not have any immediate dilutive effect or change the rights of current holders of our common stock.

Procedure for Implementing the Amendment

The increase in our authorized common stock will become effective upon the filing of the Certificate of Amendment or such later time as specified in the filing with the Secretary of State of Delaware. The timing of the filing of the Certificate of Amendment will be determined by the Board based on its evaluation as to when such action will be the most advantageous to the Company and our stockholders.

Interests of Officers and Directors in this Proposal

Our officers and directors do not have any substantial interest, direct or indirect, in this proposal.

Reservation of Right to Abandon Amendment to Increase Authorized Shares of Common Stock

The Board reserves the right to abandon the amendment of the Certificate of Incorporation to increase the number of authorized shares of our common stock at any time before the filing with the Secretary of State of Delaware of the Certificate of Amendment, notwithstanding stockholder approval for the amendment.

Required Vote

Approval of the Increase to Authorized Proposal requires the affirmative vote of a majority of the total votes cast virtually or by proxy. There will be no broker non-votes with respect to this proposal. Abstentions will have the effect of a vote "AGAINST" this proposal.

Recommendation of the Board

THE BOARD OF DIRECTORS UNANIMOUSLY RECOMMENDS THAT THE STOCKHOLDERS VOTE FOR THE INCREASE TO AUTHORIZED PROPOSAL.

PROPOSAL 5: APPROVAL OF THE 2025 EQUITY INCENTIVE PLAN

General

On April 30, 2025, our Board, subject to the approval of our stockholders, adopted a new 2025 Equity Incentive Plan (the "2025 Plan") to succeed our 2013 Equity Incentive Plan, as amended and restated effective as of May 8, 2014 (also referred to as the "2013 Plan") which expired on May 7, 2024. Our Board believes that it is critical for us to continue to have the ability to offer competitive equity compensation awards to attract, retain and motivate the members of our management team and other key employees and service providers upon whom the Company's success depends.

Like the 2013 Plan, the general purpose of the 2025 Plan is to provide a means whereby our eligible employees, officers, non-employee directors and other individual service providers may develop a sense of proprietorship and personal involvement in our development and financial success, and to encourage them to devote their best efforts to our business, thereby advancing our interests and the interests of our stockholders.

Since the 2013 Plan has expired, if our stockholders do not approve the 2025 Plan, we will not have the ability to attract, motivate and retain the personnel needed to develop and enhance our business. Accordingly, our Board believes that it is in the best interests of our Company and our stockholders for our stockholders to approve the 2025 Plan.

Description of the 2025 Plan

The following description of the principal terms of the 2025 Plan is a summary and is qualified in its entirety by the full text of the 2025 Plan, which is attached as Annex B hereto.

Types of Awards. The 2025 Plan permits various ways for eligible individuals to acquire our common stock, including through the grant of stock options (including incentive stock options ("ISOs")) that are intended to meet the requirements of Section 422 of the Internal Revenue Code of 1986, as amended (the "Code")), stock appreciation rights ("SARs"), restricted stock, restricted stock units, performance shares, performance units, incentive bonuses and other types of cash-based and stock-based awards authorized under the 2025 Plan. The various types of options and other awards that may be granted under the 2025 Plan, which are described in further detail below, are referred to as "awards".

Administration. The 2025 Plan will be administered by the Compensation Committee of our Board, but the entire Board may act in lieu of the Compensation Committee on any matter involving the Plan. The Compensation Committee may delegate to certain officers authority to grant awards to eligible individuals (other than officers and directors). Under the 2025 Plan, the Compensation Committee has authority to determine the terms of awards and underlying award agreements, including:

- recipients of awards;
- the type of awards to be granted

- the exercise, purchase, or strike price of stock awards, if any;
- the number of shares subject to each stock award;
- the vesting schedule applicable to the awards, together with any vesting acceleration; and
- the form of consideration, if any, payable on exercise or settlement of the award.

Under the 2025 Plan, the Compensation Committee also generally has the authority to effect, with the consent of any adversely affected participant:

- the reduction of the exercise, purchase, or strike price of any outstanding award;
- the cancellation of any outstanding award and the grant in substitution therefore of other awards, cash, or other consideration; or
- any other action that is treated as a repricing under generally accepted accounting principles.

The Compensation Committee may establish rules and regulations for the administration of the 2025 Plan and make amendments or modifications to outstanding awards. Subject to applicable law and the 2025 Plan, the Compensation Committee may delegate administrative functions of the 2025 Plan to officers, employees and directors.

Expiration of the 2025 Plan. No awards may be made under the 2025 Plan on or after June 23, 2035 (the “Expiration Date”), but the 2025 Plan will continue thereafter while awards granted prior to the Expiration Date remain outstanding.

Eligibility. Awards may be granted to employees, officers, directors, consultants, advisors and other individual service providers of our Company and its subsidiaries, including any person who the Compensation Committee determines is a prospective employee, officer, director, consultant, advisor or other individual service provider of our Company or any of its subsidiaries. As of May 1, 2025, our Company and its subsidiaries had a total of 3 employees, including 2 executive officers, 4 non-employee directors and several consultants.

Shares Subject to the 2025 Plan. The aggregate number of shares of our common stock available for issuance in connection with awards granted under the 2025 Plan is 763,048 (equal to 15% of our outstanding shares of common stock as of April 30, 2025), all of which may be issued pursuant to the exercise of ISOs.

Like the 2013 Plan, the aggregate number of our shares of common stock available for issuance under the 2025 Plan will automatically increase on the first day of each fiscal year of our Company commencing January 1, 2026, and on the first day of each fiscal year of the Company thereafter until the expiration date, by a number of shares of our common stock (“evergreen shares”) equal to the lesser of: (i) 4.0% of the outstanding shares of all classes of our common stock as of the last day of the immediately preceding fiscal year (determined on a fully-diluted basis) or (ii) such other number of shares (which may be zero) as our Board may determine. Evergreen shares may not be issued pursuant to the exercise of ISOs.

Shares of our common stock issued as a result of awards under the 2025 Plan may be either authorized but unissued shares or shares held in the Company’s treasury.

The number of shares available under the 2025 Plan will be depleted on the date of the grant of an award by the maximum number of shares, if any, with respect to which such award is granted. An award that may be settled solely in cash shall not cause any depletion of the shares available under the 2025 Plan. In general, if an award granted under the 2025 Plan lapses, expires, terminates or is cancelled without the issuance of shares under the award, or if shares under an award are forfeited due to a failure to satisfy vesting or other conditions, then such shares will again be available for issuance under the 2025 Plan. Shares of our common stock that otherwise would have been issued upon the exercise of a stock option or SAR or in payment with respect to any other form of award, but are surrendered in payment or partial payment of the exercise price and/or withholding taxes, will no longer be counted against the number of shares available for issuance under the 2025 Plan and may again be made subject to awards under the 2025 Plan.

As of May 1, 2025, the record date, the closing price of our common stock was \$0.62 per share.

Director Award Limit. No non-employee director of the Board may receive awards in any calendar year having an accounting value in excess of \$300,000; except that such limit is increased to \$500,000 for the initial year of a non-employee director’s term.

Adjustments. The number of shares of our common stock authorized for issuance under the 2025 Plan and the foregoing share limitations and director award limits are subject to customary adjustments for stock splits, stock dividends, similar transactions or any other change affecting our common stock.

Terms and Conditions of Options. Options granted under the 2025 Plan may be either ISOs or “nonqualified stock options” that do not meet the requirements of Section 422 of the Code. The Compensation Committee will determine the exercise price of options granted under the 2025 Plan. The exercise price of stock options generally may not be less than the fair market value per share of our common stock on the date of grant (or 110% of fair market value in the case of ISOs granted to a ten-percent stockholder). The exercise price of a nonqualified stock option may be less than the fair market value per share of our common stock on the date of grant if the option is exempt from the requirements of Section 409A of the Code.

No option may be exercisable for more than ten years (five years in the case of an ISO granted to a ten-percent stockholder) from the date of grant. Options granted under the 2025 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.

The Compensation Committee may, in its discretion, permit a holder of a nonqualified stock option to exercise the option before it has otherwise become exercisable, in which case the shares of our common stock issued to the recipient will continue to be subject to the vesting requirements that applied to the nonqualified stock option before exercise.

Generally, the option price may be paid by certified or bank check. However, the Compensation Committee may permit other methods of payment, including (a) in the form of shares of our common stock that have been held for such period of time as the Compensation Committee may deem appropriate, valued at fair market value of such shares on the date of exercise, (b) by surrendering to the Company shares of our common stock otherwise receivable on exercise of the option, (c) by a cashless exercise program implemented by the Compensation Committee, (d) subject to the approval of the Compensation Committee, by a full recourse, interest bearing promissory note having such terms as the Compensation Committee may, in its sole discretion, permit and/or (e) by such other method as may be approved by the Compensation Committee and set forth in an individual award agreement.

No option may be transferred other than by will or by the laws of descent and distribution, and during a recipient’s lifetime an option may be exercised only by the recipient. However, the Compensation Committee may permit the holder of an option, SAR or other award to transfer the option, right or other award to immediate family

members, a family trust for estate planning purposes or by gift to charitable institutions. The Compensation Committee will determine the extent to which a holder of a stock option may exercise the option following termination of service with us.

Stock Appreciation Rights. The Compensation Committee will generally determine all terms and conditions of each SAR. The exercise price per share of a SAR will not be less than 100% of the fair market value of a share of our common stock on the date of grant. The maximum term of any SAR granted under the 2025 Plan is 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 of a share of our common stock on the exercise date over the exercise price, multiplied by the number of shares of our common stock covered by the SAR. Payment may be made in shares of our common stock, in cash, or partly in shares of our common stock and partly in cash, all as determined by the Compensation Committee.

Restricted Stock and Restricted Stock Units. The Compensation Committee will generally determine all terms and conditions of each restricted stock award and/or restricted stock unit award under the 2025 Plan. Restricted stock awards consist of shares of our common stock that are transferred to a recipient, with or without consideration, subject to restrictions that may result in forfeiture if specified conditions are not satisfied. Restricted stock units confer the right to receive shares of our common stock, cash, or a combination of shares of our common stock and cash, at a future date upon or following the attainment of certain conditions specified by the Compensation Committee. Dividends or distributions with respect to restricted stock may be paid to the holder of the shares as and when dividends are paid to stockholders or at the time that the restricted stock vests, as determined by the Compensation Committee. If any dividends or distributions are paid in shares of our common stock before the restricted stock vests, such shares will be subject to the same restrictions as the underlying restricted stock. Dividend equivalent amounts may be paid with respect to restricted stock units, in the discretion of the Compensation Committee, either immediately to the holder of the restricted stock unit or subject to the same vesting restrictions as the restricted stock units to which they relate. Unless the Compensation Committee determines otherwise, holders of restricted stock will have the right to vote the shares.

Performance Shares and Performance Units. Performance share awards and performance unit awards under the 2025 Plan, respectively, are restricted stock awards and restricted stock unit awards that may be earned or become vested subject to the achievement of such performance goals as the Compensation Committee deems appropriate.

Incentive Bonuses. The Compensation Committee may grant incentive bonus awards under the 2025 Plan from time to time. The terms of incentive bonus awards will be set forth in award agreements having such terms and conditions as the Compensation Committee determines, including performance goals and the amount of payment based on achievement of such goals. Incentive bonus awards are payable in cash and/or shares of our common stock.

Other Stock-Based and Cash-Based Awards. The Compensation Committee may award other types of equity-based or cash-based awards under the 2025 Plan, including the grant or offer for sale of shares of our common stock that do not have vesting requirements and the right to receive one or more cash payments subject to satisfaction of such conditions as the Compensation Committee may impose.

30

Effect of Certain Corporate Transactions. 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 2025 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. The Compensation Committee may, in its sole and absolute 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; (d) cancel any award of restricted stock, restricted 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 our common stock on the date of the change in control; (f) terminate any award for 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 holder’s rights as of the date of the occurrence of the change in control, but if the change in control consideration with respect to any option or SAR does not exceed its exercise price, the option or SAR may be canceled without payment of any consideration; or (g) take any other action necessary or appropriate to carry out the terms of any definitive agreement controlling the terms and conditions of the change in control.

Amendment of Plan. Our Board may at any time amend the 2025 Plan in such manner as the Board may deem advisable or in the best interests of the Company, except that any amendment that requires stockholder approval to comply with any applicable law, regulation, or stock exchange rule will be subject to stockholder approval, and stockholder approval will be required for any amendment to the 2025 Plan that (i) increases the number of shares of our common stock available for issuance under the 2025 Plan, or (ii) changes the persons or class of persons eligible to receive awards.

Amendment, Modification, Cancellation and Disgorgement of Awards. Subject to exceptions specified in the 2025 Plan, the Compensation Committee may terminate or cause a recipient to forfeit an award, and require the recipient to disgorge any gains attributable to an award, if the recipient engages in any action constituting, as determined by the Compensation Committee in its discretion, cause for termination or a breach of a material policy, any award agreement or any other agreement concerning noncompetition, nonsolicitation, confidentiality, trade secrets, intellectual property, nondisparagement or similar obligations. All awards, and any shares issued or cash paid pursuant to an award, are also subject to any applicable recoupment or clawback policy adopted by our Board or any recoupment or similar requirement contained in applicable law, regulation or the listing requirements of the exchange or system on which our common stock is principally traded.

New Plan Benefits

The following table shows the total number of shares of our common stock subject to options that have been granted to the identified individuals under the 2025 Plan, which options are subject to the approval of Proposal No. 5 by our stockholders:

Name and Position	Number of Shares	Dollar Value (3)
Jerome D. Jabbour, Chief Executive Officer	70,100(1)	\$ 37,179
Keith A. Kucinski, Chief Financial Officer	-	-
Executive Group	-	-
Non-Executive Director Group	46,400(2)	\$ 24,609
Non-Executive Officer Employee Group	-	-

(1) On April 30, 2025, our Board granted Mr. Jabbour an option under the 2025 Plan to purchase 70,100 shares of our common stock at an exercise price of \$0.59 per share, subject to approval of Proposal No. 5 by our stockholders. The option will vest as to 25% of the shares covered by the option on the one-year anniversary of the grant date, and the balance of the option will vest in monthly installments over the following 36-month period. The option will also vest in full in the event of a “change in control” (as defined by the 2025 Plan) during Mr. Jabbour’s employment or if Mr. Jabbour’s employment is involuntarily terminated without “cause” (as defined in his employment agreement) or if he resigns for “good reason” (as defined in his employment agreement).

31

(2) On April 30, 2025, our Board granted each of our non-employee directors an option under the 2025 Plan to purchase up to 11,600 shares of our common stock at an exercise price of \$0.59 per share, subject to approval of Proposal No. 6 by our stockholders. The stock options fully vest upon the earlier to occur of (i) the one-year anniversary of the grant date, or (ii) a change in control (as defined by the 2025 Plan), and expire ten years from the grant date.

- (3) Amounts shown represent the aggregate grant date fair value of the option awards computed in accordance with FASB ASC Topic 718. These amounts do not correspond to the actual value that will be realized upon exercise of the option. The assumptions used in the valuation of these options are consistent with the valuation methodologies specified in the notes to our financial statements.

Except for the option grants set forth above, awards under the 2025 Plan are within the discretion of the Compensation Committee 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.

U.S. Federal Income Tax Consequences

Following is a summary of the U.S. federal income tax consequences of option and other grants under the 2025 Plan. Optionees and recipients of other rights and awards granted under the 2025 Plan are advised to consult their personal tax advisors before exercising an option or SAR or disposing of any stock received pursuant to the exercise of an option or SAR or following the vesting and payment of any 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, foreign or other tax laws.

Treatment of Options

The Code treats ISOs and nonqualified stock options differently. However, as to both types of options, no income will be recognized by the optionee at the time of the grant of the options under the 2025 Plan, nor will the Combined Company be entitled to a tax deduction at that time.

Generally, upon exercise of a nonqualified stock option (including an option intended to be an incentive stock option but which has not continued to so qualify at the time of exercise), an optionee will recognize ordinary income tax on the excess of the fair market value of the stock on the exercise date over the option price. We will be entitled to a tax deduction in an amount equal to the ordinary income recognized by the optionee in the fiscal year which includes the end of the optionee's taxable year. We will be required to satisfy applicable withholding requirements in order to be entitled to a tax deduction. In general, if an optionee, in exercising a nonqualified stock option, tenders shares of common stock in partial or full payment of the option price, no gain or loss will be recognized on the tender. However, if the tendered shares were previously acquired upon the exercise of an ISO and the tender is within two years from the date of grant or one year after the date of exercise of the ISO, the tender will be a disqualifying disposition of the shares acquired upon exercise of the ISO.

For ISOs, there is no taxable income to an optionee at the time of exercise. However, the excess of the fair market value of the stock on the date of exercise over the exercise price will be taken into account in determining whether the "alternative minimum tax" will apply for the year of exercise. If the shares acquired upon exercise are held until at least two years from the date of grant and more than one year from the date of exercise, any gain or loss upon the sale of such shares, if held as capital assets, will be long-term capital gain or loss (measured by the difference between the sales price of the stock and the exercise price). Under current federal income tax law, a long-term capital gain will be taxed at a rate which is less than the maximum rate of tax on ordinary income. If the two-year and one year holding period requirements are not met (a "disqualifying disposition"), an optionee will recognize ordinary income in the year of disposition in an amount equal to the lesser of (i) the fair market value of the stock on the date of exercise minus the exercise price or (ii) the amount realized on disposition minus the exercise price. The remainder of the gain will be treated as long-term capital gain, depending upon whether the stock has been held for more than a year. If an optionee makes a disqualifying disposition, we will be entitled to a tax deduction equal to the amount of ordinary income recognized by the optionee.

In general, if an optionee, in exercising an ISO, tenders shares of our common stock in partial or full payment of the option price, no gain or loss will be recognized on the tender. However, if the tendered shares were previously acquired upon the exercise of another ISO and the tender is within two years from the date of grant or one year after the date of exercise of the other option, the tender will be a disqualifying disposition of the shares acquired upon exercise of the other option.

As noted above, the exercise of an ISO could subject an optionee to the alternative minimum tax. The application of the alternative minimum tax to any particular optionee depends upon the particular facts and circumstances which exist with respect to the optionee in the year of exercise. However, as a general rule, the amount by which the fair market value of the common stock on the date of exercise of an option exceeds the exercise price of the option will constitute an item of "adjustment" for purposes of determining the alternative minimum taxable income on which the alternative tax may be imposed. As such, this item will enter into the tax base on which the alternative minimum tax is computed and may therefore cause the alternative minimum tax to become applicable in any given year.

Treatment of Stock Appreciation Rights

Generally, the recipient of a SAR will not recognize any income upon grant of the SAR, nor will we be entitled to a deduction at that time. Upon exercise of a SAR, the holder will recognize ordinary income, and we generally will be entitled to a corresponding deduction, equal to the excess of fair market value of our common stock at that time over the exercise price.

Treatment of Stock Awards

Generally, absent an election to be taxed currently under Section 83(b) of the Code (a "Section 83(b) Election"), there will be no federal income tax consequences to either the recipient or us upon the grant of a restricted stock award or award of performance shares. At the expiration of the restriction period and the satisfaction of any other restrictions applicable to the restricted shares, the recipient will recognize ordinary income and we generally will be entitled to a corresponding deduction equal to the fair market value of our common stock at that time. If a Section 83(b) Election is made within 30 days after the date the restricted stock award is granted, the recipient will recognize an amount of ordinary income at the time of the receipt of the restricted shares, and we generally will be entitled to a corresponding deduction, equal to the fair market value (determined without regard to applicable restrictions) of the shares at such time, less any amount paid by the recipient for the shares. If a Section 83(b) Election is made, no additional income will be recognized by the recipient upon the lapse of restrictions on the shares (and prior to the sale of such shares), but, if the shares are subsequently forfeited, the recipient may not deduct the income that was recognized pursuant to the Section 83(b) Election at the time of the receipt of the shares.

The recipient of an unrestricted stock award, including a performance unit award, will recognize ordinary income, and we generally will be entitled to a corresponding deduction, equal to the fair market value of our common stock that is the subject of the award when the award is made.

The recipient of a restricted stock unit generally will recognize ordinary income as and when the units vest and are settled. The amount of the income will be equal to the fair market value of the shares of our common stock issued at that time, and we will be entitled to a corresponding deduction. The recipient of a restricted stock unit will not be permitted to make a Section 83(b) Election with respect to such award.

Treatment of Incentive Bonus Awards and Other Stock or Cash Based Awards

Generally, the recipient of an incentive bonus or other stock or cash based award will not recognize any income upon grant of the award, nor will we be entitled to a deduction at that time. Upon payment with respect to such an award, the recipient will recognize ordinary income, and we generally will be entitled to a corresponding deduction, equal to the amount of cash paid and/or the fair market value of our common stock issued at that time.

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.” Our Board and the Compensation Committee intend to consider the potential impact of Section 162(m) on grants made under the 2025 Plan, but reserve the right to approve grants of options and other awards for an executive officer that exceed the deduction limit of Section 162(m).

Tax Withholding

As and when appropriate, we shall have the right to require each optionee purchasing shares of our common stock and each grantee receiving an award under the 2025 Plan to pay any federal, state or local taxes required by law to be withheld.

Approval Required

Stockholder approval of this Proposal 5 will require the affirmative vote of the holders of a majority of the votes cast in person or by proxy at the meeting .

THE BOARD UNANIMOUSLY RECOMMENDS THAT STOCKHOLDERS VOTE “FOR” THE PROPOSAL TO APPROVE THE 2025 EQUITY INCENTIVE PLAN.

33

STOCKHOLDER PROPOSALS

Stockholder Proposals for 2025 Annual Meeting

Our by-laws state that a stockholder must provide timely written notice of a proposal to be brought before the meeting and supporting documentation as well as be present at such meeting, either in person or by a representative. Any stockholder proposals submitted for inclusion in our proxy statement and form of proxy for our 2025 Annual Meeting of Stockholders must be timely received by the Company at our principal executive office no later than March 25, 2026 and no earlier than February 23, 2026 in order to be considered for inclusion in our proxy statement and form of proxy; provided, however, that in the event the Annual Meeting is scheduled to be held on a date more than thirty (30) days before the anniversary date of the immediately preceding Annual Meeting of Stockholders (the “Anniversary Date”) or more than sixty (60) days after the Anniversary Date, a stockholder’s notice shall be timely if received by the Company at our principal executive office not later than the close of business on the later of (i) the ninetieth (90th) day prior to the scheduled date of such Annual Meeting; and (ii) the tenth (10th) day following the day on which such public announcement of the date of such Annual Meeting is first made by the Company. Such proposals must also comply with the requirements as to form and substance established by the SEC if such proposals are to be included in the proxy statement and form of proxy. Proxies solicited by our Board will confer discretionary voting authority with respect to these proposals, subject to the SEC’s rules and regulations governing the exercise of this authority. Any such proposal shall be mailed to: Matinas BioPharma Holdings, Inc., 1545 Route 206 South, Suite 302, Bedminster, New Jersey 07921, Attn.: Secretary.

ANNUAL REPORT

Copies of our Annual Report on Form 10-K (including an amendment thereto and audited financial statements) filed with the SEC may be obtained without charge by writing to Matinas BioPharma Holdings, Inc., 1545 Route 206 South, Suite 302, Bedminster, New Jersey 07921, Attn.: Secretary. A request for a copy of our Annual Report on Form 10-K must set forth a good-faith representation that the requesting party was either a holder of record or a beneficial owner of our common stock on March 28, 2025. Exhibits to the Form 10-K will be mailed upon similar request and payment of specified fees to cover the costs of copying and mailing such materials.

Our audited financial statements for the fiscal year ended December 31, 2024 and certain other related financial and business information are contained in our 2024 Annual Report to Stockholders, which is being made available to our stockholders along with this proxy statement, but which is not deemed a part of the proxy soliciting material.

HOUSEHOLDING OF ANNUAL MEETING MATERIALS

Some banks, brokers and other nominee record holders may be participating in the practice of “householding” proxy statements. This means that only one copy of this Proxy Statement may have been sent to multiple stockholders in the same household. We will promptly deliver a separate copy of this Proxy Statement to any stockholder upon written or oral request to: Matinas BioPharma Holdings, Inc., 1545 Route 206 South, Suite 302, Bedminster, New Jersey 07921, Attn.: Secretary, or by phone at (908) 484-8805. Any stockholder who wants to receive a separate copy of this Proxy Statement, or of our proxy statements or annual reports in the future, or any stockholder who is receiving multiple copies and would like to receive only one copy per household, should contact the stockholder’s bank, broker, or other nominee record holder, or the stockholder may contact us at the address and phone number above.

OTHER MATTERS

As of the date of this proxy statement, the Board does not intend to present at the Annual Meeting of Stockholders any matters other than those described herein and does not presently know of any matters that will be presented by other parties. If any other matter requiring a vote of the stockholders should come before the meeting, it is the intention of the persons named in the proxy to vote with respect to any such matter in accordance with the recommendation of the Board or, in the absence of such a recommendation, in accordance with the best judgment of the proxy holder.

By Order of the Board of Directors

/s/ Jerome D. Jabbour

Jerome D. Jabbour,
Chief Executive Officer

May 12, 2025
Bedminster, New Jersey

34

Annex A

**CERTIFICATE OF AMENDMENT
OF
CERTIFICATE OF INCORPORATION
OF
MATINAS BIOPHARMA HOLDINGS, INC.**

Pursuant to Section 242 of the General Corporation Law of the State of Delaware, Matinas BioPharma Holdings, Inc., a corporation organized and existing under the laws

of the State of Delaware (the “**Corporation**”), does hereby certify as follows:

1. The name of the Corporation is Matinas BioPharma Holdings, Inc. The Corporation was incorporated by the filing of its original Certificate of Incorporation with the Secretary of State of the State of Delaware on May 21, 2013, which was amended by a certificate of amendment filed with the Secretary of State of the State of Delaware on October 29, 2015 (as so amended, the “**Certificate of Incorporation**”).

2. The Certificate of Incorporation of the Corporation is hereby amended to increase the authorized shares of the Corporation’s common stock by deleting the first paragraph under Section A of Article V, and replacing such paragraph with the following:

“The total number of shares of capital stock which the Corporation shall have authority to issue is five Hundred Ten Million (510,000,000), of which (i) Five Hundred Million (500,000,000) shares shall be a class designated as common stock, par value \$0.0001 per share (the “Common Stock”), and (ii) Ten Million Shares (10,000,000) shares shall be a class designated as preferred stock, par value \$0.0001 per share (the “Preferred Stock”).

3. The Board of Directors of the Corporation has duly adopted a resolution pursuant to Section 242 of the General Corporation Law of the State of Delaware setting forth a proposed amendment to the Certificate of Incorporation of the Corporation and declaring said amendment to be advisable. The requisite stockholders of the Corporation have duly approved said proposed amendment in accordance with Section 242 of the General Corporation Law of the State of Delaware.

4. This Certificate of Amendment and the amendment to the Certificate of Incorporation effected hereby shall be effective immediately upon filing.

[Signature Page Follows]

A-1

IN WITNESS WHEREOF, the Corporation has caused this Certificate of Amendment to be signed by its Chief Executive Officer on this__day of ____, 20__.

MATINAS BIOPHARMA HOLDINGS, INC.

By: _____

Name: Jerome D. Jabbour

A-2

Annex B

**CERTIFICATE OF AMENDMENT
OF
CERTIFICATE OF INCORPORATION
OF
MATINAS BIOPHARMA HOLDINGS, INC.**

Pursuant to Section 242 of the General Corporation Law of the State of Delaware, Matinas BioPharma Holdings, Inc., a corporation organized and existing under the laws of the State of Delaware (the “**Corporation**”), does hereby certify as follows:

1. The name of the Corporation is Matinas BioPharma Holdings, Inc. The Corporation was incorporated by the filing of its original Certificate of Incorporation with the Secretary of State of the State of Delaware on May 21, 2013, which was amended by a certificate of amendment filed with the Secretary of State of the State of Delaware on October 29, 2015 (as so amended, the “**Certificate of Incorporation**”).

2. The Certificate of Incorporation of the Corporation is hereby amended to increase the authorized shares of the Corporation’s common stock by deleting the first paragraph under Section A of Article V, and replacing such paragraph with the following:

“The total number of shares of capital stock which the Corporation shall have authority to issue is five Hundred Ten Million (510,000,000), of which (i) Five Hundred Million (500,000,000) shares shall be a class designated as common stock, par value \$0.0001 per share (the “Common Stock”), and (ii) Ten Million Shares (10,000,000) shares shall be a class designated as preferred stock, par value \$0.0001 per share (the “Preferred Stock”). Upon the filing and effectiveness (the “**Effective Time**”) pursuant to the DGCL of this Certificate of Amendment to the Certificate of Incorporation, each [•] shares of the Corporation’s Common Stock issued and outstanding immediately prior to the Effective Time shall, automatically and without any action on the part of the Corporation or respective holders thereof, be combined and converted into one (1) validly issued, fully paid and non-assessable share of Common Stock (the “**Reverse Split**”); provided, however, that the Corporation shall issue no fractional shares as a result of the actions set forth herein but shall instead pay to the holder of such fractional share a sum in cash equal to such fraction multiplied by the closing sales price of the Common Stock as reported on The Nasdaq Capital Market on the last trading day before the Effective Time (as adjusted to give effect to the Reverse Split).”

3. The Board of Directors of the Corporation has duly adopted a resolution pursuant to Section 242 of the General Corporation Law of the State of Delaware setting forth a proposed amendment to the Certificate of Incorporation of the Corporation and declaring said amendment to be advisable. The requisite stockholders of the Corporation have duly approved said proposed amendment in accordance with Section 242 of the General Corporation Law of the State of Delaware.

4. This Certificate of Amendment and the amendment to the Certificate of Incorporation effected hereby shall be effective immediately upon filing.

[Signature Page Follows]

B-1

IN WITNESS WHEREOF, the Corporation has caused this Certificate of Amendment to be signed by its Chief Executive Officer on this__day of ____, 20__.

MATINAS BIOPHARMA HOLDINGS, INC.

By: _____

Name: Jerome D. Jabbour

B-2

MATINAS BIOPHARMA HOLDINGS, INC.

2025 EQUITY INCENTIVE PLAN

1. Establishment and Purpose

1.1 The purpose of the Matinas BioPharma Holdings, Inc. 2025 Equity Incentive Plan (the “**Plan**”) is to provide a means whereby eligible employees, officers, non-employee directors and other individual service providers develop a sense of proprietorship and personal involvement in the development and financial success of the Company (as defined herein) and to encourage them to devote their best efforts to the business of the Company, thereby advancing the interests of the Company and its stockholders. The Company, by means of the Plan, seeks to retain the services of such eligible persons and to provide incentives for such persons to exert maximum efforts for the success of the Company and its Subsidiaries.

1.2 The Plan permits the grant of Nonqualified Stock Options, Incentive Stock Options, Stock Appreciation Rights, Restricted Stock, Restricted Stock Units, Performance Shares, Performance Units, Incentive Bonus Awards, Other Cash-Based Awards and Other Stock-Based Awards. This Plan shall become effective upon the date set forth in Section 17.1 hereof.

2. Definitions

Capitalized terms used and not otherwise defined in this Plan or in any Award Agreement have the following meanings:

2.1 “**Affiliate**” means, with respect to a Person, a Person that directly or indirectly Controls, or is Controlled by, or is under common Control with, such Person.

2.2 “**Applicable Law**” means the requirements relating to the administration of equity-based awards or equity compensation plans under U.S. state corporate laws, U.S. federal and state securities laws, the Code, any stock exchange or quotation system on which the Common Stock is listed or quoted and the applicable laws of any foreign country or jurisdiction that applies to Awards.

2.3 “**Award**” means an award of a Stock Option, Stock Appreciation Right, Restricted Stock, Restricted Stock Unit, Performance Share, Performance Unit, Incentive Bonus Award, Other Cash-Based Award and/or Other Stock-Based Award granted under the Plan.

2.4 “**Award Agreement**” means either (i) a written or electronic agreement entered into between the Company and a Participant setting forth the terms and conditions of an Award, including any amendment or modification thereof, or (ii) a written or electronic statement issued by the Company to a Participant describing the terms and provisions of such Award, including any amendment or modification thereof. The Committee may provide for the use of electronic, internet or other non-paper Award Agreements, and the use of electronic, internet or other non-paper means for the acceptance thereof and actions thereunder by a Participant. Each Award Agreement shall be subject to the terms and conditions of the Plan and need not be identical.

C-1

2.5 “**Board**” means the Board of Directors of the Company.

2.6 “**Cause**” means a Participant’s (i) indictment for, or conviction of, or the entry of a plea of guilty or no contest to, a felony or any other crime that causes or is reasonably likely to result in the Company or its Affiliates disgrace or disrepute, or materially and adversely affects the Company’s or its Affiliates’ business, operations or financial performance, (ii) gross negligence or willful misconduct with respect to the Company or any of its Affiliates, including, without limitation fraud, embezzlement, theft or proven dishonesty in the course of Participant’s employment or other service, or conduct of a Participant, in connection with Participant’s employment or service, that has, or could reasonably be expected to result in, material injury to the business or reputation of the Company or any Affiliate; (iii) use of controlled drugs other than in accordance with a physician’s prescription; (iv) acts of willful misconduct on the part of a Participant in the course Participant’s employment or service that has, or could be reasonably expected to result in, material injury to the reputation or business of the Company or any Affiliate, (v) willful neglect in the performance of a Participant’s duties for the Company or any Affiliate, or the refusal to perform any lawful, material obligation or fulfill any duty (other than any duty or obligation of the type described in clause (vi) below) to the Company or its Affiliates (other than due to a disability), which refusal, if curable, is not cured within ten (10) days after delivery of written notice thereof; (v) material breach of any agreement with or duty owed to the Company or any of its Affiliates, which breach, if curable, is not cured within ten (10) days after the delivery of written notice thereof; (vi) any breach of any obligation or duty to the Company or any of its Affiliates (whether arising by statute, common law or agreement) relating to confidentiality, noncompetition, non-solicitation or proprietary rights; or (vii) any material breach of any policy of the Company or its Affiliates or any action that the Board, in its sole discretion, determines is reasonably likely to cause the Company or its Affiliates disgrace or disrepute. Notwithstanding the foregoing, if a Participant and the Company (or any of its Affiliates) have entered into an employment agreement, consulting agreement or other similar agreement that specifically defines “cause,” then with respect to such Participant, “Cause” shall have the meaning defined in that employment agreement, consulting agreement or other agreement.

2.7 “**Change in Control**” means, unless otherwise provided in an Award Agreement, the occurrence of any one of the following events:

(i) any “person,” including a “group” (as such terms are used in Sections 13(d) and 14(d) of the Exchange Act, but excluding the Company, any entity Controlling, Controlled by or under common Control with the Company, any trustee, fiduciary or other person or entity holding securities under any employee benefit plan or trust of the Company or any such entity, and, with respect to any particular Participant, the Participant and any “group” (as such term is used in Section 13(d)(3) of the Exchange Act) of which the Participant is a member), is or becomes the “beneficial owner” (as defined in Rule 13(d)(3) under the Exchange Act), directly or indirectly, of securities of the Company representing 50% or more of either (A) the combined voting power of the Company’s then outstanding securities or (B) the then outstanding shares of Common Stock (in either such case other than as a result of an acquisition of securities directly from the Company), except for any Person who becomes the beneficial owner in connection with a merger, consolidation, reorganization of the Company or similar transaction, with any other corporation or entity, immediately following which transaction, the individuals who comprise the Board immediately prior thereto, constitute at least a majority of the Board of the surviving entity; or

C-2

(ii) any consolidation, reorganization, merger or similar transaction of the Company where the stockholders of the Company, immediately prior to the consolidation, reorganization, merger or similar transaction, would not, immediately after the consolidation, reorganization, merger or similar transaction, beneficially own (as such term is defined in Rule 13d-3 under the Exchange Act), directly or indirectly, shares representing in the aggregate 50% or more of the combined voting power of the securities of the corporation issuing cash or securities in the consolidation or merger (or of its ultimate parent corporation, if any); or

(iii) there shall occur (A) any sale, lease, exchange or other transfer (in one transaction or a series of transactions contemplated or arranged by any party as a single plan) of all or substantially all of the assets of the Company, other than a sale or disposition by the Company of all or substantially all of the Company’s assets to an entity, at least 50% of the combined voting power of the voting securities of which are owned by “persons” (as defined above) in substantially the same proportion as their ownership of the Company immediately prior to such sale or (B) the approval by stockholders of the Company of any plan or proposal for the liquidation or dissolution of the Company; or

(iv) the members of the Board at the beginning of any consecutive 24-calendar-month period (the **"Incumbent Directors"**) cease for any reason other than due to death or disability to constitute at least a majority of the members of the Board or equivalent governing body; provided that any Director whose election, or nomination for election by the Company's stockholders, was approved or ratified by a vote of at least a majority of the members of the Board then still in office who were members of the Board at the beginning of such 24-calendar-month period, shall be deemed to be an Incumbent Director; or

(iv) The shareholders of the Company approve a plan of complete liquidation or dissolution of the Company.

Notwithstanding the foregoing, (1) no event or condition shall constitute a Change in Control to the extent that, if it were, a penalty tax would be imposed under Section 409A of the Code; provided that, in such a case, the event or condition shall continue to constitute a Change in Control to the maximum extent possible (e.g., if applicable, in respect of vesting without an acceleration of distribution) without causing the imposition of such penalty tax and (2) no Change in Control shall be deemed to have occurred, and no rights arising upon a Change in Control as provided in the Plan or any Award Agreement shall exist, to the extent that the Board so determines by resolution adopted and not rescinded prior to the Change in Control; *provided, however*, that no such determination by the Board shall be effective if it would cause a Participant to be subject to a penalty tax under Section 409A of the Code. The Board shall have full and final authority, in its sole discretion, to determine conclusively whether a Change in Control has occurred pursuant to the above definition, the date of the occurrence of such Change in Control, and any incidental matters relating thereto.

C-3

2.8 **"Code"** means the Internal Revenue Code of 1986, as amended. For purposes of this Plan, references to sections of the Code shall be deemed to include references to any applicable regulations thereunder and any successor or similar provision.

2.9 **"Committee"** means the committee of the Board delegated with the authority to administer the Plan, or the full Board, as provided in Section 3 of the Plan. With respect to any decision relating to a Reporting Person, the Committee shall consist solely of two or more directors who are disinterested within the meaning of Rule 16b-3 promulgated under the Exchange Act, as amended from time to time, or any successor provision. Each member of the committee shall be an independent director in accordance with the rules of any stock exchange on which the shares of Common Stock are listed. The fact that a Committee member shall fail to qualify under any of these requirements shall not invalidate an Award if the Award is otherwise validly made under the Plan. The Board may at any time appoint additional members to the Committee, remove and replace members of the Committee with or without cause, and fill vacancies on the Committee however caused.

2.10 **"Common Stock"** means the Company's Common Stock, par value \$0.0001 per share.

2.11 **"Company"** means Matinas BioPharma Holdings, Inc., a Delaware corporation, and any successor thereto as provided in Section 15.8.

2.12 **"Continuous Service"** means that the Participant's service with the Company or an Affiliate, whether as an employee, director or consultant, is not interrupted or terminated. A change in the capacity in which the Participant renders service to the Company or an Affiliate as an employee, director or consultant or a change in the entity for which the Participant renders such service, provided that there is no interruption or termination of the Participant's service with the Company or an Affiliate, will not terminate a Participant's Continuous Service; provided, however, that if the entity for which a Participant is rendering services ceases to qualify as an Affiliate, as determined by the Committee, in its sole discretion, such Participant's Continuous Service will be considered to have terminated on the date such entity ceases to qualify as an Affiliate. For example, a change in status from an employee of the Company to a consultant of an Affiliate or to a director will not constitute an interruption of Continuous Service. To the extent permitted by Applicable Law, the Committee or the chief executive officer of the Company, in that party's sole discretion, may determine whether Continuous Service will be considered interrupted in the case of (i) any leave of absence approved by the Company or chief executive officer, including sick leave, military leave or any other personal leave, or (ii) transfers between the Company, an Affiliate, or their successors. Notwithstanding the foregoing, a leave of absence will be treated as Continuous Service for purposes of vesting in an Award only to such extent as may be provided in the Company's (or an Affiliate's) leave of absence policy, in the written terms of any leave of absence agreement or policy applicable to the Participant, or as otherwise required by Applicable Law or permitted by the Committee. Unless the Committee provides otherwise, in its sole discretion, or as otherwise required by Applicable Law, vesting of Awards shall be tolled during any unpaid leave of absence by a Participant.

C-4

2.13 **"Control"** means, as to any Person, the power to direct or cause the direction of the management and policies of such Person, or the power to appoint directors of the Company, whether through the ownership of voting securities, by contract or otherwise (the terms **"Controlled by"**, **"Controlling"** and **"under common Control with"** shall have correlative meanings).

2.14 **"Date of Grant"** means the date on which an Award under the Plan is granted by the Committee, or such later date as the Committee may specify to be the effective date of an Award.

2.15 **"Disability"** means a Participant being considered "disabled" within the meaning of Section 409A of the Code and Treasury Regulation 1.409A-3(i)(4), as well as any successor regulation or interpretation or in the case of any Participant who, as of the date of determination, is a party to an employment, consulting or other similar services agreement with the Company or any Affiliate that employs such Participant that specifically defines "disability", then "Disability" shall have the meaning specified in such agreement.

2.16 **"Effective Date"** means the date set forth in Section 17.1 hereof.

2.17 **"Eligible Person"** means any person who is an employee, officer, director, consultant (including any former employee serving as a consultant), advisor or other individual service provider of the Company or any Subsidiary, or any person who is determined by the Committee to be a prospective employee, officer, director, consultant, advisor or other individual service provider of the Company or any Subsidiary.

2.18 **"Exchange Act"** means the Securities Exchange Act of 1934, as amended.

2.19 **"Exchange Program"** means a program under which (i) outstanding Awards are surrendered or cancelled in exchange for Awards of the same type (which may have higher or lower Exercise Prices and different terms), Awards of a different type, and/or cash, (ii) Participants would have the opportunity to transfer any outstanding Awards to a financial institution or other person or entity selected by the Administrator, and/or (iii) the exercise price of an outstanding Award is increased or reduced. The Committee will determine the terms and conditions of any Exchange Program in its sole discretion.

2.20 **"Fair Market Value"** of a share of Common Stock shall be, as applied to a specific date (i) the closing price of a share of Common Stock as of such date on the principal established stock exchange or national market system on which the Common Stock is then traded (or, if there is no trading in the Common Stock as of such date, the closing price of a share of Common Stock on the most recent date preceding such date on which trades of the Common Stock were recorded), or (ii) if the shares of Common Stock are not then traded on an established stock exchange or national market system but are then traded in an over-the-counter market, the average of the closing bid and asked prices for the shares of Common Stock in such over-the-counter market as of such date (or, if there are no closing bid and asked prices for the shares of Common Stock as of such date, the average of the closing bid and the asked prices for the shares of Common Stock on the most recent date preceding such date on which such closing bid and asked prices are available on such over-the-counter market), or (iii) if the shares of Common Stock are not then listed on a national securities exchange or national market system or traded in an over-the-counter market, the price of a share of Common Stock as determined by the Committee in its discretion in a manner consistent with Section 409A of the Code and Treasury Regulation 1.409A-1(b)(5)(iv), as well as any successor regulation or interpretation. Notwithstanding the foregoing, solely for purposes of determining the

exercise price of any grant of a Stock Option or the base price of any grant of a Stock Appreciation Right, in lieu of the determination of Fair Market Value under clauses (i) and (ii) above, the Committee may in its discretion base Fair Market Value on the last sale before or the first sale after the grant, the closing price on the trading day before or the trading day of the grant, the arithmetic mean of the high and low prices on the trading day before or the trading day of the grant, or any other reasonable method using actual transactions of the Common Stock as reported by the exchange or market on which the Common Stock is traded. In addition, the determination of Fair Market Value also may be made using any other method permitted under Treasury Regulation section 1.409A-1(b)(5)(iv).

C-5

2.21 **“Incentive Bonus Award”** means an Award granted under Section 12 of the Plan.

2.22 **“Incentive Stock Option”** means a Stock Option granted under Section 6 hereof that is intended to meet the requirements of Section 422 of the Code and the regulations promulgated thereunder.

2.23 **“Nonqualified Stock Option”** means a Stock Option granted under Section 6 hereof that is not an Incentive Stock Option.

2.24 **“Other Cash-Based Award”** means a contractual right granted to an Eligible Person under Section 13 hereof entitling such Eligible Person to receive a cash payment at such times, and subject to such conditions, as are set forth in the Plan and the applicable Award Agreement.

2.25 **“Other Stock-Based Award”** means a contractual right granted to an Eligible Person under Section 13 representing a notional unit interest equal in value to a share of Common Stock to be paid and distributed at such times, and subject to such conditions as are set forth in the Plan and the applicable Award Agreement.

2.26 **“Outside Director”** means a director of the Board who is not an employee of the Company or a Subsidiary.

2.27 **“Participant”** means any Eligible Person who holds an outstanding Award under the Plan.

2.28 **“Person”** shall mean, unless otherwise provided, any individual, partnership, firm, trust, corporation, limited liability company or other similar entity. When two or more Persons act as a partnership, limited partnership, syndicate or other group for the purpose of acquiring, holding or disposing of Common Stock, such partnership, limited partnership, syndicate or group shall be deemed a “Person”.

2.29 **“Performance Goals”** shall mean performance goals established by the Committee as contingencies for the grant, exercise, vesting, distribution, payment and/or settlement, as applicable, of Awards.

C-6

2.30 **“Performance Shares”** means a contractual right granted to an Eligible Person under Section 10 hereof representing a notional unit interest equal in value to a share of Common Stock to be paid and distributed at such times, and subject to such conditions, as are set forth in the Plan and the applicable Award Agreement.

2.31 **“Performance Unit”** means a contractual right granted to an Eligible Person under Section 11 hereof representing a notional dollar interest as determined by the Committee to be paid and distributed at such times, and subject to such conditions, as are set forth in the Plan and the applicable Award Agreement.

2.32 **“Plan”** means this Matinas BioPharma Holdings, Inc. 2025 Equity Incentive Plan, as it may be amended from time to time.

2.33 **“Reporting Person”** means an officer, director or greater than ten percent (10%) stockholder of the Company within the meaning of Rule 16a-2 under the Exchange Act, who is required to file reports pursuant to Rule 16a-3 under the Exchange Act.

2.34 **“Restricted Stock Award”** means a grant of shares of Common Stock to an Eligible Person under Section 8 hereof that are issued subject to such vesting and transfer restrictions and such other conditions as are set forth in the Plan and the applicable Award Agreement.

2.35 **“Restricted Stock Unit Award”** means a contractual right granted to an Eligible Person under Section 9 hereof representing notional unit interests equal in value to a share of Common Stock to be paid and distributed at such times, and subject to such conditions, as are set forth in the Plan and the applicable Award Agreement.

2.36 **“Securities Act”** means the Securities Act of 1933, as amended.

2.37 **“Stock Appreciation Right”** or **“SAR”** means a contractual right granted to an Eligible Person under Section 7 hereof entitling such Eligible Person to receive a payment, upon the exercise of such right, in such amount and at such time, and subject to such conditions, as are set forth in the Plan and the applicable Award Agreement.

2.38 **“Stock Option”** means a contractual right granted to an Eligible Person under Section 6 hereof to purchase shares of Common Stock at such time and price, and subject to such conditions, as are set forth in the Plan and the applicable Award Agreement.

2.39 **“Subsidiary”** means an entity (whether or not a corporation) that is wholly or majority owned or controlled, directly or indirectly, by the Company; provided, however, that with respect to Incentive Stock Options, the term “Subsidiary” shall include only an entity that qualifies under section 424(f) of the Code as a “subsidiary corporation” with respect to the Company.

3. Administration

3.1 Committee Members. The Plan shall be administered by the Committee; provided that the entire Board may act in lieu of the Committee on any matter, subject to Section 16b-3 Award requirements referred to in Section 2.9 of the Plan. If and to the extent permitted by Applicable Law, the Committee may authorize one or more Reporting Persons (or other officers) to make Awards to Eligible Persons who are not Reporting Persons (or other officers whom the Committee has specifically authorized to make Awards). Subject to Applicable Law and the restrictions set forth in the Plan, the Committee may delegate administrative functions to individuals who are Reporting Persons, officers, or employees of the Company or its Subsidiaries.

C-7

3.2 Committee Authority. The Committee shall have such powers and authority as may be necessary or appropriate for the Committee to carry out its functions as described in the Plan. Subject to the express limitations of the Plan, the Committee shall have authority in its discretion to determine the Eligible Persons to whom, and the time or times at which, Awards may be granted, the number of shares, units or other rights subject to each Award, the exercise, base or purchase price of an Award (if any), the circumstances under which an Award may be settled (including the settlement in cash, shares of Common Stock, other Awards or property), the time or times at which an Award will become vested, exercisable or payable, the performance criteria (including the satisfaction thereof), performance goals and other conditions of an Award (including the methodology for determining if the performance criteria have been met), the duration of the Award, and all other terms of the Award. Subject to the terms of the Plan, the Committee shall have authority to amend the terms of an Award in any manner that is not inconsistent with the Plan, including without limitation to determine, add, cancel,

waive, amend or otherwise alter any restrictions, terms or conditions of any Award, extend the post-termination exercisability period of any Stock Option and/or Stock Appreciation Right, and/or to institute and determine the terms and conditions of an Exchange Program; provided that no such action shall adversely affect the rights of a Participant with respect to an outstanding Award without the Participant's consent (for purposes of the foregoing, any action that causes an Incentive Stock Option to be treated as a Nonqualified Stock Option shall not be considered to have adversely affected a Participant's rights). The Committee shall also have discretionary authority to interpret the Plan, to make all factual determinations under the Plan, and to make all other determinations necessary or advisable for Plan administration, including, without limitation, to correct any defect, to supply any omission or to reconcile any inconsistency in the Plan or any Award Agreement and to determine the methodology for calculating performance criteria with respect to Awards granted under the Plan and to determine whether such performance criteria have been satisfied. With respect to all matters related to the Plan and awards, all decisions of the Committee shall be final, conclusive, and binding upon all parties, including the Company, the stockholders and the Participants. The Committee may prescribe, amend, and rescind rules and regulations relating to the Plan. The Committee's determinations under the Plan need not be uniform and may be made by the Committee selectively among Participants and Eligible Persons, whether or not such persons are similarly situated. The Committee shall, in its discretion, consider such factors as it deems relevant in making its interpretations, determinations and actions under the Plan including, without limitation, the recommendations or advice of any officer or employee of the Company or such attorneys, consultants, accountants or other advisors as it may select. All interpretations, determinations, and actions by the Committee shall be final, conclusive, and binding upon all parties.

3.3 No Liability; Indemnification. Neither the Board nor any Committee member, nor any Person acting at the direction of the Board or the Committee, shall be liable for any act, omission, interpretation, construction or determination made in good faith with respect to the Plan or any Award or Award Agreement. Each member of the Committee shall be entitled to, in good faith, rely or act upon any report or other information furnished to him or her by any officer or other employee of the Company or any Subsidiary or Affiliate, the Company's independent certified public accountants, or other professional retained by the Company to assist in the administration of the Plan. The Company and its Subsidiaries shall pay or reimburse any member of the Committee, as well as any other Person who takes action on behalf of the Plan, for all reasonable expenses incurred with respect to the Plan, and to the full extent allowable under Applicable Law shall indemnify each and every one of them for any claims, liabilities, and costs (including reasonable attorney's fees) arising out of their good faith performance of duties on behalf of the Company with respect to the Plan. The Company and its Subsidiaries may, but shall not be required to, obtain liability insurance for this purpose.

C-8

4. Shares Subject to the Plan

4.1 Plan Share Limitation.

(a) Subject to adjustment pursuant to Sections 4.1(b) and 4.3 and any other applicable provisions 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 763,048 shares.

(b) The number of shares of Common Stock available for issuance under the Plan shall automatically increase on the first day of each fiscal year of the Company commencing immediately following the Effective Date and on the first day of each fiscal year of the Company thereafter (each an "**Annual Adjustment Date**") until the Expiration Date (as defined in Section 17.2 of the Plan), in an amount equal to four percent (4.0%) of the total number of shares of Common Stock outstanding on the business day immediately preceding the applicable Annual Adjustment Date (calculated on a fully-diluted and as-converted basis). Notwithstanding the foregoing, the Board may act prior to each Annual Adjustment Date to provide that there shall be no increase in the share reserve upon such Annual Adjustment Date or that the increase in the share reserve for the Annual Adjustment Date shall be a lesser number of shares of Common Stock than would otherwise occur pursuant to the preceding sentence.

(c) Subject to adjustment pursuant to Section 4.3 and any other applicable provisions hereof, the aggregate maximum number of shares of Common Stock that may be issued pursuant to the exercise of Incentive Stock Options is the number of shares of Common Stock reserved under Section 4.1(a).

(d) Shares of Common Stock issued under the Plan may be either authorized but unissued shares or shares held in the Company's treasury. Any shares of Common Stock subject to Awards that are settled in Common Stock shall be counted against the maximum share limitations of this Section 4.1 as one share of Common Stock for every share of Common Stock subject thereto, regardless of the number of shares of Common Stock actually issued to settle the Stock Option or Stock Appreciation Right upon exercise. To the extent that any Award payable in shares of Common Stock is forfeited, canceled, returned to the Company for failure to satisfy vesting requirements or upon the occurrence of other forfeiture events, or otherwise terminates without payment being made thereunder, the shares of Common Stock covered thereby will no longer be counted against the foregoing maximum share limitations and may again be made subject to Awards under the Plan pursuant to such limitations. Awards settled in cash shall not count against the foregoing maximum share limitation. Shares of Common Stock that otherwise would have been issued upon the exercise of a Stock Option or SAR or in payment with respect to any other form of Award, but are surrendered in payment or partial payment of the exercise price thereof and/or taxes withheld with respect to the exercise thereof or the making of such payment, will no longer be counted against the foregoing maximum share limitations and may again be made subject to Awards under the Plan pursuant to such limitations.

C-9

4.2 Outside Director Limitation. Subject to adjustment as provided in Section 4.3, the grant date fair value (determined under U.S. generally accepted accounting principles) of Awards granted under the Plan to any Outside Director during any calendar year shall not exceed \$300,000; provided that in the case of a new Outside Director, such amount shall be increased to \$500,000 for the initial year of the Outside Director's term.

4.3 Adjustments. If there shall occur any change with respect to the outstanding shares of Common Stock by reason of any recapitalization, reclassification, stock dividend, extraordinary dividend, stock split, reverse stock split, or other distribution with respect to the shares of Common Stock, or any merger, reorganization, consolidation, combination, spin-off or other similar corporate change, or any other change affecting the Common Stock, the Committee shall, in the manner and to the extent that it deems appropriate and equitable to the Participants and consistent with the terms of the Plan, cause an adjustment to be made in (i) the maximum numbers and kind of shares provided in Section 4.1 hereof, (ii) the numbers and kind of shares of Common Stock, units, or other rights subject to then outstanding Awards, (iii) the price for each share or unit or other right subject to then outstanding Awards, (iv) the performance measures or goals relating to the vesting of an Award, (v) the limits set forth in Section 4.2, and (vi) any other terms of an Award that are affected by the event to prevent dilution or enlargement of a Participant's rights under an Award. Notwithstanding the foregoing, in the case of Incentive Stock Options, any such adjustments shall, to the extent practicable, be made in a manner consistent with the requirements of Section 424(a) of the Code.

4.4 Inducement Awards: Mergers or Acquisitions. Shares of Common Stock may be issued as inducement awards and/or in connection with a merger or acquisition as permitted by NYSE Listed Company Manual Section 303A.08 or other applicable rule, and such issuance will not reduce the number of shares of Common Stock available for issuance under the Plan.

5. Participation and Awards

5.1 Designation of Participants. All Eligible Persons are eligible to be designated by the Committee to receive Awards and become Participants under the Plan. The Committee has the authority, in its discretion, to determine and designate from time to time those Eligible Persons who are to be granted Awards, the types of Awards to be granted and the number of shares of Common Stock or units subject to Awards granted under the Plan. In selecting Eligible Persons to be Participants and in determining the type and amount of Awards to be granted under the Plan, the Committee shall consider any and all factors that it deems relevant or appropriate.

5.2 Determination of Awards. The Committee shall determine the terms and conditions of all Awards granted to Participants in accordance with its authority under Section 3.2 hereof. An Award may consist of one type of right or benefit hereunder or of two or more such rights or benefits granted in tandem or in the alternative. To the extent deemed appropriate by the Committee, an Award shall be evidenced by an Award Agreement as described in Section 15.1 hereof.

6. Stock Options

6.1 Grant of Stock Option. A Stock Option may be granted to any Eligible Person selected by the Committee. Subject to the provisions of Section 6.6 hereof and Section 422 of the Code, each Stock Option shall be designated, in the sole discretion of the Committee, as an Incentive Stock Option or as a Nonqualified Stock Option.

6.2 Exercise Price. The exercise price per share of a Stock Option shall be such price as is determined by the Committee and set forth in the Award Agreement, but shall be subject to the following:

(i) In the case of an Incentive Stock Option, except as provided by Section 6.6(d), the per share exercise price shall be no less than 100% of the Fair Market Value on the date of grant (unless granted to a 10% shareholder, in which case the per share exercise price shall be no less than 110% of the Fair Market Value on the date of grant); and

(ii) In the case of a Nonqualified Stock Option, the per share exercise price shall be such price as is determined by the Administrator, provided that, if the per share exercise price is less than 100% of the Fair Market Value on the date of grant, it shall otherwise comply with all Applicable Laws, including Section 409A of the Code.

6.3 Vesting of Stock Options. The Committee shall in its sole discretion prescribe the time or times at which, or the conditions upon which, a Stock Option or portion thereof shall become vested and/or exercisable. The requirements for vesting and exercisability of a Stock Option may be based on the Continuous Service of the Participant for a specified time period (or periods) and/or on the attainment of a specified performance goal (or goals) established by the Committee in its discretion. The Committee may, in its sole discretion, accelerate the vesting or exercisability of any Stock Option at any time, but not beyond the expiration of the term of the Award, including, but not limited to, when a Participant's Continuous Service with the Company is terminated as a result of Disability or death. The Committee, in its sole discretion, may allow a Participant to exercise unvested Nonqualified Stock Options, in which case the shares of Common Stock then issued shall be Restricted Stock having analogous vesting restrictions to the unvested Nonqualified Stock Options. For avoidance of doubt, no dividends or dividend equivalents shall be payable with respect to Stock Options.

6.4 Term of Stock Options. The Committee shall in its discretion prescribe in an Award Agreement the period during which a vested Stock Option may be exercised, provided that the maximum term of a Stock Option shall be ten (10) years from the Date of Grant. A Stock Option may be earlier terminated as specified by the Committee and set forth in an Award Agreement upon or following the termination of a Participant's Continuous Service for any reason, including by reason of voluntary resignation, death, Disability, termination for Cause or any other reason. Except as otherwise provided in this Section 6 or in an Award Agreement as such agreement may be amended from time to time upon authorization of the Committee, no Stock Option may be exercised at any time during the term thereof unless the Participant is then in Continuous Service. Notwithstanding the foregoing, unless an Award Agreement provides otherwise:

(a) If a Participant's Continuous Service terminates by reason of his or her death, any Stock Option held by such Participant may, to the extent then exercisable, be exercised by such Participant's estate or any Person who acquires the right to exercise such Stock Option by bequest or inheritance at any time in accordance with its terms for up to one (1) year after the date of such Participant's death (but in no event after the earlier of the expiration of the term of such Stock Option or such time as the Stock Option is otherwise canceled or terminated in accordance with its terms). Upon expiration of such one-year period, no portion of the Stock Option held by such Participant shall be exercisable and the Stock Option shall be deemed to be canceled, forfeited and of no further force or effect.

(b) If a Participant's Continuous Service terminates by reason of his or her Disability, any Stock Option held by such Participant may, to the extent then exercisable, be exercised by the Participant or his or her personal representative at any time in accordance with its terms for up to one (1) year after the date of such Participant's termination of Continuous Service (but in no event after the earlier of the expiration of the term of such Stock Option or such time as the Stock Option is otherwise canceled or terminated in accordance with its terms). Upon expiration of such one-year period, no portion of the Stock Option held by such Participant shall be exercisable and the Stock Option shall be deemed to be canceled, forfeited and of no further force or effect.

(c) If a Participant's Continuous Service terminates for any reason other than death, Disability or Cause, any Stock Option held by such Participant may, to the extent then exercisable, be exercised by the Participant up until ninety (90) days following such termination of Continuous Service (but in no event after the earlier of the expiration of the term of such Stock Option or such time as the Stock Option is otherwise canceled or terminated in accordance with its terms). Upon expiration of such 90-day period, no portion of the Stock Option held by such Participant shall be exercisable and the Stock Option shall be deemed to be canceled, forfeited and of no further force or effect.

(d) To the extent that a Stock Option of a Participant whose Continuous Service terminates is not exercisable, such Stock Option shall be deemed forfeited and canceled on the ninetieth (90th) day after such termination of Continuous Service or at such earlier time as the Committee may determine.

6.5 Stock Option Exercise. Subject to such terms and conditions as shall be specified in an Award Agreement, a Stock Option may be exercised in whole or in part at any time during the term thereof by notice in the form required by the Company, and payment of the aggregate exercise price by certified or bank check, or such other means as the Committee may accept. As set forth in an Award Agreement or otherwise determined by the Committee, in its sole discretion, at or after grant, payment in full or in part of the exercise price of an Option may be made: (i) in the form of shares of Common Stock that have been held by the Participant for such period as the Committee may deem appropriate for accounting purposes or otherwise, valued at the Fair Market Value of such shares on the date of exercise; (ii) by surrendering to the Company shares of Common Stock otherwise receivable on exercise of the Option; (iii) by a cashless exercise program implemented by the Committee in connection with the Plan; (iv) subject to the approval of the Committee, by a full recourse, interest bearing promissory note having such terms as the Committee may, in its sole discretion, permit and/or (v) by such other method as may be approved by the Committee and set forth in an Award Agreement. Subject to any governing rules or regulations, as soon as practicable after receipt of written notification of exercise and full payment of the exercise price and satisfaction of any applicable tax withholding pursuant to Section 16.5, the Company shall deliver to the Participant evidence of book entry shares of Common Stock, or upon the Participant's request, Common Stock certificates in an appropriate amount based upon the number of shares of Common Stock purchased under the Option. Unless otherwise determined by the Committee, all payments under all of the methods indicated above shall be paid in United States dollars or shares of Common Stock, as applicable. The Committee may, in its discretion, require that shares of Common Stock acquired as a result of the exercise of a Stock Option be subject to such holding period restrictions as the Committee deems appropriate.

6.6 Additional Rules for Incentive Stock Options.

(a) Eligibility. An Incentive Stock Option may only be granted to an Eligible Person who is considered an employee under Treasury Regulation §1.421-1(h) of the Company or any Subsidiary.

(b) Annual Limits. No Incentive Stock Option shall be granted to an Eligible Person as a result of which the aggregate Fair Market Value (determined as of the Date of Grant) of the stock with respect to which Incentive Stock Options are exercisable for the first time in any calendar year under the Plan and any other stock option plans of the Company or any Subsidiary would exceed \$100,000, determined in accordance with Section 422(d) of the Code. This limitation shall be applied by taking Incentive Stock Options into account in the order in which granted.

(c) Ten Percent Stockholders. If a Stock Option granted under the Plan is intended to be an Incentive Stock Option, and if the Participant, at the time of grant, owns stock possessing ten percent (10%) or more of the total combined voting power of all classes of Common Stock of the Company or any Subsidiary, then (i) the Stock Option exercise price per share shall in no event be less than 110% of the Fair Market Value of the Common Stock on the date of such grant and (ii) such Stock Option shall not be exercisable after the expiration of five (5) years following the date such Stock Option is granted.

C-13

(d) Termination of Employment. An Award of an Incentive Stock Option shall provide that such Stock Option may be exercised not later than three (3) months following termination of employment of the Participant with the Company and all Subsidiaries, or not later than one (1) year following death or a permanent and total disability within the meaning of Section 22(e)(3) of the Code, as and to the extent determined by the Committee to comply with the requirements of Section 422 of the Code.

(e) Disqualifying Dispositions. If shares of Common Stock acquired by exercise of an Incentive Stock Option are disposed of within two (2) years following the Date of Grant or one (1) year following the transfer of such shares to the Participant upon exercise, the Participant shall, promptly following such disposition, notify the Company in writing of the date and terms of such disposition and provide such other information regarding the disposition as the Company may reasonably require.

7. Stock Appreciation Rights

7.1 Grant of Stock Appreciation Rights. A Stock Appreciation Right may be granted to any Eligible Person selected by the Committee. Stock Appreciation Rights may be granted on a basis that allows for the exercise of the right by the Participant or that provides for the automatic payment of the right upon a specified date or event.

7.2 Base Price. The base price of a Stock Appreciation Right shall be determined by the Committee in its sole discretion; provided, however, that the base price for any grant of a Stock Appreciation Right shall not be less than 100% of the Fair Market Value of a share of Common Stock on the Date of Grant, subject to adjustments as provided for under Section 4.3.

7.3 Vesting Stock Appreciation Rights. The Committee shall in its discretion prescribe the time or times at which, or the conditions upon which, a Stock Appreciation Right or portion thereof shall become vested and/or exercisable. The requirements for vesting and exercisability of a Stock Appreciation Right may be based on the Continuous Service of a Participant for a specified time period (or periods) or on the attainment of a specified performance goal (or goals) established by the Committee in its discretion. The Committee may, in its sole discretion, accelerate the vesting or exercisability of any Stock Appreciation Right at any time. For avoidance of doubt, no dividends or dividend equivalents shall be payable with respect to Stock Appreciation Rights.

7.4 Term of Stock Appreciation Rights. The Committee shall in its discretion prescribe in an Award Agreement the period during which a vested Stock Appreciation Right may be exercised, provided that the maximum term of a Stock Appreciation Right shall be ten (10) years from the Date of Grant, *provided*, that if the Stock Appreciation Right exercise period would expire at a time when trading in the shares of Common Stock is prohibited by the Company's insider trading policy or Company-imposed blackout period, then the Stock Appreciation Right exercise period shall be automatically extended until the earlier of (i) the thirtieth (30th) day following the expiration of such prohibition, and (ii) the expiration of the original Stock Appreciation Right exercise period. A Stock Appreciation Right may be earlier terminated as specified by the Committee and set forth in an Award Agreement upon or following the termination of a Participant's Continuous Service for any reason, including by reason of voluntary resignation, death, Disability, termination for Cause or any other reason. Except as otherwise provided in this Section 7 or in an Award Agreement, as such agreement may be amended from time to time upon authorization of the Committee, no Stock Appreciation Right may be exercised at any time during the term thereof unless the Participant is then in Continuous Service.

C-14

7.5 Payment of Stock Appreciation Rights. Subject to such terms and conditions as shall be specified in an Award Agreement, a vested Stock Appreciation Right may be exercised in whole or in part at any time during the term thereof by notice in the form required by the Company and payment of any exercise price. Upon the exercise of a Stock Appreciation Right and payment of any applicable exercise price, a Participant shall be entitled to receive an amount determined by multiplying: (i) the excess of the Fair Market Value of a share of Common Stock on the date of exercise of the Stock Appreciation Right over the base price of such Stock Appreciation Right, by (ii) the number of shares as to which such Stock Appreciation Right is exercised. Payment of the amount determined under the immediately preceding sentence may be made, as approved by the Committee and set forth in the Award Agreement, in shares of Common Stock valued at their Fair Market Value on the date of exercise, in cash, or in a combination of shares of Common Stock and cash, subject to applicable tax withholding requirements set forth in Section 16.5. If Stock Appreciation Rights are settled in shares of Common Stock, then as soon as practicable following the date of settlement the Company shall deliver to the Participant evidence of book entry shares of Common Stock, or upon the Participant's request, Common Stock certificates in an appropriate amount; provided, however, that the Committee may, in its discretion, require that shares of Common Stock acquired as a result of the exercise of a Stock Appreciation Right be subject to such holding period restrictions as the Committee deems appropriate.

8. Restricted Stock Awards

8.1 Grant of Restricted Stock Awards. A Restricted Stock Award may be granted to any Eligible Person selected by the Committee. The Committee may require the payment by the Participant of a specified purchase price in connection with any Restricted Stock Award. The Committee may provide in an Award Agreement for the payment of dividends and distributions to the Participant at such times as paid to stockholders generally or at the times of vesting or other payment of the Restricted Stock Award. If any dividends or distributions are paid in stock while a Restricted Stock Award is subject to restrictions under Section 8.3 of the Plan, the dividends or other distributions shares shall be subject to the same restrictions on transferability as the shares of Common Stock to which they were paid unless otherwise set forth in the Award Agreement. The Committee may also subject the grant of any Restricted Stock Award to the execution of a voting agreement with the Company or with any Affiliate of the Company.

8.2 Vesting Requirements. The restrictions imposed on shares of Common Stock granted under a Restricted Stock Award shall lapse in accordance with the vesting requirements specified by the Committee in the Award Agreement. Upon vesting of a Restricted Stock Award, such Award shall be subject to the tax withholding requirement set forth in Section 16.5. The requirements for vesting of a Restricted Stock Award may be based on the Continuous Service of the Participant for a specified time period (or periods) or on the attainment of a specified performance goal (or goals) established by the Committee in its discretion. The Committee may, in its sole discretion, accelerate the vesting of a Restricted Stock Award at any time. If the vesting requirements of a Restricted Stock Award shall not be satisfied, the Award shall be forfeited and the shares of Common Stock subject to the Award shall be returned to the Company. In the event that the Participant paid any purchase price with respect to such forfeited shares, unless otherwise provided by the Committee in an Award Agreement, the Company will refund to the Participant the lesser of (i) such purchase price and (ii) the Fair Market Value of such shares on the date of forfeiture.

8.3 Restrictions. Shares granted under any Restricted Stock Award may not be transferred, assigned or subject to any encumbrance, pledge, or charge until all applicable restrictions are removed or have expired, unless otherwise allowed by the Committee. The Committee may require in an Award Agreement that certificates representing the shares granted under a Restricted Stock Award bear a legend making appropriate reference to the restrictions imposed, and that certificates representing the shares granted or sold under a Restricted Stock Award will remain in the physical custody of an escrow holder until all restrictions are removed or have expired.

8.4 Rights as Stockholder. Subject to the foregoing provisions of this Section 8 and the applicable Award Agreement, the Participant to whom a Restricted Stock Award is made shall have all rights of a stockholder with respect to the shares granted to the Participant under the Restricted Stock Award, including the right to vote the shares and receive all dividends and other distributions paid or made with respect thereto, unless the Committee determines otherwise at the time the Restricted Stock Award is granted.

8.5 Section 83(b) Election. If a Participant makes an election pursuant to Section 83(b) of the Code with respect to a Restricted Stock Award, the Participant shall file, within thirty (30) days following the Date of Grant, a copy of such election with the Company (directed to the Secretary thereof) and with the Internal Revenue Service, in accordance with the regulations under Section 83 of the Code. The Committee may provide in an Award Agreement that the Restricted Stock Award is conditioned upon the Participant's making or refraining from making an election with respect to the Award under Section 83(b) of the Code.

9. Restricted Stock Unit Awards

9.1 Grant of Restricted Stock Unit Awards. A Restricted Stock Unit Award may be granted to any Eligible Person selected by the Committee. The value of each stock unit under a Restricted Stock Unit Award is equal to the Fair Market Value of the Common Stock on the applicable date or time period of determination, as specified by the Committee. A Restricted Stock Unit Award shall be subject to such restrictions and conditions as the Committee shall determine. A Restricted Stock Unit Award may be granted together with a dividend equivalent right with respect to the shares of Common Stock subject to the Award, which may be accumulated and may be deemed reinvested in additional stock units, as determined by the Committee in its sole discretion. If any dividend equivalents are paid while a Restricted Stock Unit Award is subject to restrictions under Section 9 of the Plan, the Committee may, in its sole discretion, provide in the Award Agreement for such dividend equivalents to immediately be paid to the Participant holding such Restricted Stock Unit Award or pay such dividend equivalents subject to the same restrictions on transferability as the Restricted Stock Units to which they relate.

9.2 Vesting of Restricted Stock Unit Awards. On the Date of Grant, the Committee shall, in its discretion, determine any vesting requirements with respect to a Restricted Stock Unit Award, which shall be set forth in the Award Agreement. The requirements for vesting of a Restricted Stock Unit Award may be based on the Continuous Service of the Participant for a specified time period (or periods) or on the attainment of a specified performance goal (or goals) established by the Committee in its discretion. The Committee may, in its sole discretion, accelerate the vesting of a Restricted Stock Unit Award at any time. A Restricted Stock Unit Award may also be granted on a fully vested basis, with a deferred payment date as may be determined by the Committee or elected by the Participant in accordance with rules established by the Committee.

9.3 Payment of Restricted Stock Unit Awards. A Restricted Stock Unit Award shall become payable to a Participant at the time or times determined by the Committee and set forth in the Award Agreement, which may be upon or following the vesting of the Award. Payment of a Restricted Stock Unit Award may be made, at the discretion of the Committee, in cash or in shares of Common Stock, or in a combination thereof as described in the Award Agreement, subject to applicable tax withholding requirements set forth in Section 16.5. Any cash payment of a Restricted Stock Unit Award shall be made based upon the Fair Market Value of the Common Stock, determined on such date or over such time period as determined by the Committee. Notwithstanding the foregoing, unless specified otherwise in the Award Agreement, any Restricted Stock Unit, whether settled in Common Stock or cash, shall be paid no later than two-and-a-half (2 ½) months after the later of the calendar year or fiscal year in which the Restricted Stock Units vest. If Restricted Stock Unit Awards are settled in shares of Common Stock, then as soon as practicable following the date of settlement, the Company shall deliver to the Participant evidence of book entry shares of Common Stock, or upon the Participant's request, Common Stock certificates in an appropriate amount; provided, however, that the Committee may, in its discretion, require that shares of Common Stock acquired as a result of the settlement of a Restricted Stock Unit Award be subject to such holding period restrictions as the Committee deems appropriate.

10. Performance Shares

10.1 Grant of Performance Shares. Performance Shares may be granted to any Eligible Person selected by the Committee. A Performance Share Award shall be subject to such restrictions and condition as the Committee shall specify. A Performance Share Award may be granted with a dividend equivalent right with respect to the shares of Common Stock subject to the Award, which may be accumulated and may be deemed reinvested in additional stock units, as determined by the Committee in its sole discretion.

10.2 Value of Performance Shares. Each Performance Share shall have an initial value equal to the Fair Market Value of a Share on the Date of Grant. The Committee shall set performance goals in its discretion that, depending on the extent to which they are met over a specified time period, shall determine the number of Performance Shares that shall be paid to a Participant.

10.3 Earning of Performance Shares. After the applicable time period has ended, the number of Performance Shares earned by the Participant over such time period shall be determined as a function of the extent to which the applicable corresponding performance goals have been achieved. This determination shall be made solely by the Committee. The Committee may, in its sole discretion, waive any performance or vesting conditions relating to a Performance Share Award.

10.4 Form and Timing of Payment of Performance Shares. The Committee shall pay at the close of the applicable Performance Period, or as soon as practicable thereafter, any earned Performance Shares in the form of cash or in shares of Common Stock or in a combination thereof, as specified in a Participant's Award Agreement, subject to applicable tax withholding requirements set forth in Section 16.5. Notwithstanding the foregoing, unless specified otherwise in the Award Agreement, all Performance Shares shall be paid no later than two-and-a-half (2 ½) months following the later of the calendar year or fiscal year in which such Performance Shares vest. Any shares of Common Stock paid to a Participant under this Section 10.4 may be subject to any restrictions deemed appropriate by the Committee. If Performance Shares are settled in shares of Common Stock, then as soon as practicable following the date of settlement the Company shall deliver to the Participant evidence of book entry shares of Common Stock, or upon the Participant's request, Common Stock certificates in an appropriate amount.

11. Performance Units

11.1 Grant of Performance Units. Performance Units may be granted to any Eligible Person selected by the Committee. A Performance Unit Award shall be subject to such restrictions and condition as the Committee shall specify in a Participant's Award Agreement.

11.2 Value of Performance Units. Each Performance Unit shall have an initial notional value equal to a dollar amount determined by the Committee, in its sole

discretion. The Committee shall set performance goals in its discretion that, depending on the extent to which they are met over a specified time period, will determine the number of Performance Units that shall be settled and paid to the Participant.

11.3 Earning of Performance Units. After the applicable time period has ended, the number of Performance Units earned by the Participant, and the amount payable in cash, in shares or in a combination thereof, over such time period shall be determined as a function of the extent to which the applicable corresponding performance goals have been achieved. This determination shall be made solely by the Committee. The Committee may, in its sole discretion, waive any performance or vesting conditions relating to a Performance Unit Award. For avoidance of doubt, no dividends or dividend equivalents shall be payable with respect to Performance Units.

11.4 Form and Timing of Payment of Performance Units. The Committee shall pay at the close of the applicable Performance Period, or as soon as practicable thereafter, any earned Performance Units in the form of cash or in shares of Common Stock or in a combination thereof, as specified in a Participant's Award Agreement, subject to applicable tax withholding requirements set forth in Section 16.5. Notwithstanding the foregoing, unless specified otherwise in the Award Agreement, all Performance Units shall be paid no later than two-and-a-half (2 ½) months following the later of the calendar year or fiscal year in which such Performance Units vest. Any shares of Common Stock paid to a Participant under this Section 11.4 may be subject to any restrictions deemed appropriate by the Committee. If Performance Units are settled in shares of Common Stock, then as soon as practicable following the date of settlement the Company shall deliver to the Participant evidence of book entry shares of Common Stock, or upon the Participant's request, Common Stock certificates in an appropriate amount.

C-18

12. Incentive Bonus Awards

12.1 Incentive Bonus Awards. The Committee, at its discretion, may grant Incentive Bonus Awards to such Participants as it may designate from time to time. The terms of a Participant's Incentive Bonus Award shall be set forth in the Participant's Award Agreement. Each Award Agreement shall specify such general terms and conditions as the Committee shall determine.

12.2 Incentive Bonus Award Performance Criteria. The determination of Incentive Bonus Awards for a given year or years may be based upon the attainment of specified levels of Company or Subsidiary performance as measured by pre-established, objective performance criteria determined at the discretion of the Committee. The Committee shall (i) select those Participants who shall be eligible to receive an Incentive Bonus Award, (ii) determine the performance period, (iii) determine target levels of performance, and (iv) determine the level of Incentive Bonus Award to be paid to each selected Participant upon the achievement of each performance level. The Committee generally shall make the foregoing determinations prior to the commencement of services to which an Incentive Bonus Award relates, to the extent applicable, and while the outcome of the performance goals and targets is uncertain.

12.3 Payment of Incentive Bonus Awards

(a) Incentive Bonus Awards shall be paid in cash or Common Stock, as set forth in a Participant's Award Agreement. Payments shall be made following a determination by the Committee that the performance targets were attained and shall be made within two and one-half months after the later of the end of the fiscal or calendar year in which the Incentive Award is no longer subject to a substantial risk of forfeiture.

(b) The amount of an Incentive Bonus Award to be paid upon the attainment of each targeted level of performance shall 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 Committee.

13. Other Cash-Based Awards and Other Stock-Based Awards

13.1 Other Cash-Based and Stock-Based Awards. The Committee may grant other types of equity-based or equity-related Awards not otherwise described by the terms of this Plan (including the grant or offer for sale of unrestricted Shares) in such amounts and subject to such terms and conditions, as the Committee shall determine. Such Awards may involve the transfer of actual shares of Common Stock to a Participant, or payment in cash or otherwise of amounts based on the value of shares of Common Stock. In addition, the Committee, at any time and from time to time, may grant Other Cash-Based Awards to a Participant in such amounts and upon such terms as the Committee shall determine, in its sole discretion.

C-19

13.2 Value of Cash-Based Awards and Other Stock-Based Awards. Each Other Stock-Based Award shall be expressed in terms of shares of Common Stock or units based on shares of Common Stock, as determined by the Committee, in its sole discretion. Each Other Cash-Based Award shall specify a payment amount or payment range as determined by the Committee, in its sole discretion. If the Committee exercises its discretion to establish performance goals, the value of Other Cash-Based Awards that shall be paid to the Participant will depend on the extent to which such performance goals are met.

13.3 Payment of Cash-Based Awards and Other Stock-Based Awards. Payment, if any, with respect to Other Cash-Based Awards and Other Stock-Based Award shall be made in accordance with the terms of the Award, in cash or shares of Common Stock as the Committee determines.

14. Change in Control

14.1 Effect of a Change in Control.

(a) The Committee may, at the time of the grant of an Award and as set forth in an Award Agreement, provide for the effect of a "Change in Control" on an Award. Such provisions may include any one or more of the following: (i) the acceleration or extension of time periods for purposes of exercising, vesting in, or realizing gain from any Award, (ii) the elimination or modification of performance or other conditions related to the payment or other rights under an Award, (iii) provision for the cash settlement of an Award for an equivalent cash value, as determined by the Committee, or (iv) such other modification or adjustment to an Award as the Committee deems appropriate to maintain and protect the rights and interests of Participants upon or following a Change in Control. To the extent necessary for compliance with Section 409A of the Code, an Award Agreement shall provide that an Award subject to the requirements of Section 409A that would otherwise become payable upon a Change in Control shall only become payable to the extent that the requirements for a "change in control" for purposes of Section 409A have been satisfied.

(b) Notwithstanding anything to the contrary set forth in the Plan, unless otherwise provided by an Award Agreement, upon or in anticipation of any Change in Control, the Committee may, in its sole and absolute discretion and without the need for the consent of any Participant, take one or more of the following actions contingent upon the occurrence of that Change in Control: (i) cause any or all outstanding Stock Options and Stock Appreciation Rights held by Participants affected by the Change in Control to become vested and immediately exercisable, in whole or in part; (ii) cause any or all outstanding Restricted Stock, Restricted Stock Units, Performance Shares, Performance Units, Incentive Bonus Award and any other Award held by Participants affected by the Change in Control to become non-forfeitable, in whole or in part; (iii) cancel any Stock Option or Stock Appreciation Right in exchange for a substitute option in a manner consistent with the requirements of Treasury Regulation. §1.424-1(a) or §1.409A-1(b)(5)(v)(D), as applicable (notwithstanding the fact that the original Stock Option may never have been intended to satisfy the requirements for treatment as an Incentive Stock Option); (iv) cancel any Restricted Stock, Restricted Stock Units, Performance Shares or Performance Units held by a Participant in exchange for restricted stock or performance shares of or stock or performance units in respect of the capital stock of any successor corporation; (v)

redeem any Restricted Stock held by a Participant affected by the Change in Control for cash and/or other substitute consideration with a value equal to the Fair Market Value of an unrestricted share of Common Stock on the date of the Change in Control; (vi) 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 Stock Appreciation Right does not exceed the exercise price of such Option or Stock Appreciation Right, the Committee may cancel the Option or Stock Appreciation Right without payment of any consideration therefor; and/or (vii) take any other action necessary or appropriate to carry out the terms of any definitive agreement controlling the terms and conditions of the Change in Control. 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 Common Stock. Without limitation of the foregoing, if as of the date of the occurrence of the Change in Control the 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 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 this Plan as the Committee deems necessary or appropriate.

C-20

(c) The Committee may require a Participant to (i) represent and warrant as to the unencumbered title to the Participant's Awards, (ii) bear such Participant's pro rata share of any post-closing indemnity obligations, and be subject to the same or similar post-closing purchase price adjustments, escrow terms, offset rights, holdback terms and similar conditions as the other holders of Common Stock, (iii) acknowledge the Company's clawback rights with respect to the Award, and (iv) execute and deliver such documents and instruments as the Committee may reasonably require for the Participant to be bound by such obligations. The Committee will endeavor to take action under this Section 14 in a manner that does not cause a violation of Section 409A of the Code with respect to an Award.

15. General Provisions

15.1 Award Agreement. To the extent deemed necessary by the Committee, an Award under the Plan shall be evidenced by an Award Agreement in a written or electronic form approved by the Committee setting forth the number of shares of Common Stock or units subject to the Award, the exercise price, base price, or purchase price of the Award, the time or times at which an Award will become vested, exercisable or payable, the clawback rights of the Company with respect to the Award, and the term of the Award. The Award Agreement may also set forth the effect on an Award of termination of Continuous Service under certain circumstances. The Award Agreement shall be subject to and incorporate, by reference or otherwise, all of the applicable terms and conditions of the Plan and may also set forth other terms and conditions applicable to the Award as determined by the Committee consistent with the limitations of the Plan. Award Agreements evidencing Incentive Stock Options shall contain such terms and conditions as may be necessary to meet the applicable provisions of Section 422 of the Code. The grant of an Award under the Plan shall not confer any rights upon the Participant holding such Award other than such terms, and subject to such conditions, as are specified in the Plan as being applicable to such type of Award (or to all Awards) or as are expressly set forth in the Award Agreement.

15.2 Forfeiture Events/Representations. The Committee may specify in an Award Agreement at the time of the Award that the Participant's rights, payments and benefits with respect to an Award shall be subject to reduction, cancellation, forfeiture or recoupment upon the occurrence of certain specified events, in addition to any otherwise applicable vesting or performance conditions of an Award. Such events shall include, but shall not be limited to, termination of Continuous Service for Cause, violation of material Company policies, breach of noncompetition, confidentiality or other restrictive covenants that may apply to the Participant, or other conduct by the Participant that is detrimental to the business or reputation of the Company. The Committee may also specify in an Award Agreement that the Participant's rights, payments and benefits with respect to an Award shall be conditioned upon the Participant making a representation regarding compliance with noncompetition (as permitted by applicable law), confidentiality or other restrictive covenants that may apply to the Participant and providing that the Participant's rights, payments and benefits with respect to an Award shall be subject to reduction, cancellation, forfeiture or recoupment on account of a breach of such representation. Notwithstanding the foregoing, the confidentiality restrictions set forth in an Award Agreement shall not, and shall not be interpreted to, impair a Participant from exercising any legally protected whistleblower rights (including under Rule 21 of the Exchange Act). In addition and without limitation of the foregoing, any amounts paid hereunder shall be subject to recoupment in accordance with The Dodd-Frank Wall Street Reform and Consumer Protection Act and any implementing regulations thereunder, the "clawback" policy adopted by the Company and any and all amendments thereto, or as is otherwise required by applicable law or stock exchange listing condition.

C-21

15.3 No Assignment or Transfer: Beneficiaries.

(a) Awards under the Plan shall not be assignable or transferable by the Participant, except by will or by the laws of descent and distribution, and shall not be subject in any manner to assignment, alienation, pledge, encumbrance or charge. Notwithstanding the foregoing, the Committee may provide in an Award Agreement that the Participant shall have the right to designate a beneficiary or beneficiaries who shall be entitled to any rights, payments or other benefits specified under an Award following the Participant's death. During the lifetime of a Participant, an Award shall be exercised only by such Participant or such Participant's guardian or legal representative. In the event of a Participant's death, an Award may, to the extent permitted by the Award Agreement, be exercised by the Participant's beneficiary as designated by the Participant in the manner prescribed by the Committee or, in the absence of an authorized beneficiary designation, by the legatee of such Award under the Participant's will or by the Participant's estate in accordance with the Participant's will or the laws of descent and distribution, in each case in the same manner and to the same extent that such Award was exercisable by the Participant on the date of the Participant's death.

(b) Limited Transferability Rights. Notwithstanding anything else in this Section 15.3 to the contrary, the Committee may in its discretion provide in an Award Agreement that an Award in the form of a Nonqualified Stock Option, share-settled Stock Appreciation Right, Restricted Stock, Performance Share or share-settled Other Stock-Based Award may be transferred, on such terms and conditions as the Committee deems appropriate, either (i) by instrument to the Participant's "Immediate Family" (as defined below), (ii) by instrument to an inter vivos or testamentary trust (or other entity) in which the Award is to be passed to the Participant's designated beneficiaries, or (iii) by gift to charitable institutions. Any transferee of the Participant's rights shall succeed and be subject to all of the terms of the applicable Award Agreement and the Plan. "**Immediate Family**" means any child, stepchild, grandchild, parent, stepparent, grandparent, spouse, former spouse, sibling, niece, nephew, mother-in-law, father-in-law, son-in-law, daughter-in-law, brother-in-law, or sister-in-law, and shall include adoptive relationships.

15.4 Rights as Stockholder. A Participant shall have no rights as a holder of shares of Common Stock with respect to any unissued shares of Common Stock covered by an Award until the date the Participant becomes the holder of record of such securities. Except as provided in Section 4.3 hereof, no adjustment or other provision shall be made for dividends or other stockholder rights, except to the extent that the Award Agreement provides for dividend payments or dividend equivalent rights.

15.5 Employment or Continuous Service. Nothing in the Plan, in the grant of any Award or in any Award Agreement shall confer upon any Eligible Person or Participant any right to continue in Continuous Service, or interfere in any way with the right of the Company or any of its Subsidiaries to terminate the employment or other service relationship of an Eligible Person or Participant for any reason at any time.

15.6 Fractional Shares. In the case of any fractional share or unit resulting from the grant, vesting, payment or crediting of dividends or dividend equivalents under an Award, the Committee shall have the discretionary authority to (i) disregard such fractional share or unit, (ii) round such fractional share or unit to the nearest lower or higher whole share or unit, or (iii) convert such fractional share or unit into a right to receive a cash payment.

15.7 Other Compensation and Benefit Plans. The amount of any compensation deemed to be received by a Participant pursuant to an Award shall not constitute includable compensation for purposes of determining the amount of benefits to which a Participant is entitled under any other compensation or benefit plan or program of the

Company or any Subsidiary, including, without limitation, under any bonus, pension, profit-sharing, life insurance, salary continuation or severance benefits plan, except to the extent specifically provided by the terms of any such plan.

15.8 Plan Binding on Transferees. The Plan shall be binding upon the Company, its transferees and assigns, and the Participant, the Participant's executor, administrator and permitted transferees and beneficiaries. In addition, all obligations of the Company under this Plan with respect to Awards granted hereunder shall be binding on any successor to the Company, whether the existence of such successor is the result of a direct or indirect purchase, merger, consolidation, or otherwise, of all or substantially all of the business and/or assets of the Company.

C-22

15.9 Foreign Jurisdictions. The Committee may adopt, amend and terminate such arrangements and grant such Awards, not inconsistent with the intent of the Plan, as it may deem necessary or desirable to comply with any tax, securities, regulatory or other laws of other jurisdictions with respect to Awards that may be subject to such laws. The terms and conditions of such Awards may vary from the terms and conditions that would otherwise be required by the Plan solely to the extent the Committee deems necessary for such purpose. Moreover, the Board may approve such supplements to or amendments, restatements or alternative versions of the Plan, not inconsistent with the intent of the Plan, as it may consider necessary or appropriate for such purposes, without thereby affecting the terms of the Plan as in effect for any other purpose.

15.10 No Obligation to Notify or Minimize Taxes. The Company will have no duty or obligation to any Participant to advise such holder as to the time or manner of exercising an Award. Furthermore, the Company will have no duty or obligation to warn or otherwise advise such holder of a pending termination or expiration of an Award or a possible period in which the Award may not be exercised. The Company has no duty or obligation to minimize the tax consequences of an Award to the holder of such Award.

15.11 Corporate Action Constituting Grant of Awards. Corporate action constituting a grant by the Company of an Award to any Participant will be deemed completed as of the date of such corporate action, unless otherwise determined by the Committee or the Board, regardless of when the instrument, certificate, or letter evidencing the Award is communicated to, or actually received or accepted by, the Participant. In the event that the corporate records (e.g., Board or Committee consents, resolutions or minutes) documenting the corporate action constituting the grant contain terms (e.g., exercise price, vesting schedule or number of shares) that are inconsistent with those in the Award Agreement as a result of a clerical error in the papering of the Award Agreement, the corporate records will control and the Participant will have no legally binding right to the incorrect term in the Award Agreement.

15.12 Change in Time Commitment. In the event a Participant's regular level of time commitment in the performance of the Participant's services for the Company and any Affiliates is reduced (for example, and without limitation, if the Participant is an employee of the Company and the employee has a change in status from a full-time employee to a part-time employee) after the date of grant of any Award to the Participant, the Committee has the right in its sole discretion to (i) make a corresponding reduction in the number of shares subject to any portion of such Award that is scheduled to vest or become payable after the date of such change in time commitment and (ii) in lieu of or in combination with such a reduction, extend the vesting or payment schedule applicable to such Award. In the event of any such reduction, the Participant will have no right with respect to any portion of the Award that is so reduced or extended.

15.13 Substitute Awards in Corporate Transactions. Nothing contained in the Plan shall be construed to limit the right of the Committee to grant Awards under the Plan in connection with the acquisition, whether by purchase, merger, consolidation or other corporate transaction, of the business or assets of any corporation or other entity. Without limiting the foregoing, the Committee may grant Awards under the Plan to an employee or director of another corporation who becomes an Eligible Person by reason of any such corporate transaction in substitution for awards previously granted by such corporation or entity to such person. The terms and conditions of the substitute Awards may vary from the terms and conditions that would otherwise be required by the Plan solely to the extent the Committee deems necessary for such purpose. Any shares of Common Stock subject to these substitute Awards shall not be counted against any of the maximum share limitations set forth in the Plan.

C-23

16. Legal Compliance

16.1 Securities Laws. No shares of Common Stock will be issued or transferred pursuant to an Award unless and until all then applicable requirements imposed by Federal and state securities and other laws, rules and regulations and by any regulatory agencies having jurisdiction, and by any exchanges upon which the shares of Common Stock may be listed, have been fully met. As a condition precedent to the issuance of shares pursuant to the grant or exercise of an Award, the Company may require the Participant to take any reasonable action to meet such requirements. The Committee may impose such conditions on any shares of Common Stock issuable under the Plan as it may deem advisable, including, without limitation, restrictions under the Securities Act, as amended, under the requirements of any exchange upon which such shares of the same class are then listed, and under any blue sky or other securities laws applicable to such shares. The Committee may also require the Participant to represent and warrant at the time of issuance or transfer that the shares of Common Stock are being acquired only for investment purposes and without any current intention to sell or distribute such shares. All Common Stock issued pursuant to the terms of this Plan shall constitute "restricted securities," as that term is defined in Rule 144 promulgated pursuant to the Securities Act, and may not be transferred except in compliance herewith and with the registration requirements of the Securities Act or an exemption therefrom. Certificates representing Common Stock acquired pursuant to an Award may bear such legend as the Company may consider appropriate under the circumstances. If an Award is made to an Eligible Person who is subject to Chinese jurisdiction, and approval of the Award by China's State Administration of Foreign Exchange is needed, the Award may be converted to cash or other equivalent amount if and to the extent that such approval is not obtained.

16.2 Incentive Arrangement. The Plan is designed to provide an on-going, pecuniary incentive for Participants to produce their best efforts to increase the value of the Company. The Plan is not intended to provide retirement income or to defer the receipt of payments hereunder to the termination of a Participant's employment or beyond. The Plan is thus intended not to be a pension or welfare benefit plan that is subject to Employee Retirement Income Security Act of 1974 ("ERISA"), and shall be construed accordingly. All interpretations and determinations hereunder shall be made on a basis consistent with the Plan's status as not an employee benefit plan subject to ERISA.

16.3 Unfunded Plan. The adoption of the Plan and any reservation of shares of Common Stock or cash amounts by the Company to discharge its obligations hereunder shall not be deemed to create a trust or other funded arrangement. Except upon the issuance of Common Stock pursuant to an Award, any rights of a Participant under the Plan shall be those of a general unsecured creditor of the Company, and neither a Participant nor the Participant's permitted transferees or estate shall have any other interest in any assets of the Company by virtue of the Plan. Notwithstanding the foregoing, the Company shall have the right to implement or set aside funds in a grantor trust, subject to the claims of the Company's creditors or otherwise, to discharge its obligations under the Plan.

C-24

16.4 Section 409A Compliance. To the extent applicable, it is intended that the Plan and all Awards hereunder comply with the requirements of Section 409A of the Code or an exemption thereto, and the Plan and all Award Agreements shall be interpreted and applied by the Committee in a manner consistent with this intent in order to avoid the imposition of any additional tax under Section 409A of the Code. Notwithstanding anything in the Plan or an Award Agreement to the contrary, in the event that any provision of the Plan or an Award Agreement is determined by the Committee, in its sole discretion, to not comply with the requirements of Section 409A of the Code or an exemption thereto, the Committee shall, in its sole discretion, have the authority to take such actions and to make such interpretations or changes to the Plan or an Award Agreement as the Committee deems necessary, regardless of whether such actions, interpretations, or changes shall adversely affect a Participant, subject to the limitations, if any, of applicable law. If an Award is subject to Section 409A of the Code, any payment made to a Participant who is a "specified employee" of the Company or any Subsidiary

shall not be made before the date that is six (6) months after the Participant's "separation from service" to the extent required to avoid the adverse consequences of Section 409A of the Code. For purposes of this Section 16.4, the terms "separation from service" and "specified employee" shall have the meanings set forth in Section 409A of the Code. In no event whatsoever shall the Company be liable for any additional tax, interest or penalties that may be imposed on any Participant by Section 409A of the Code or any damages for failing to comply with Section 409A of the Code.

16.5 Tax Withholding.

(a) The Company shall have the power and the right to deduct or withhold, or require a participant to remit to the Company, the minimum statutory amount to satisfy federal, state, and local taxes, domestic or foreign, required by law or regulation to be withheld with respect to any taxable event arising as a result of this Plan, but in no event shall such deduction or withholding or remittance exceed the minimum statutory withholding requirements unless permitted by the Company and such additional withholding amount will not cause adverse accounting consequences and is permitted under Applicable Law.

(b) Subject to such terms and conditions as shall be specified in an Award Agreement, a Participant may, in order to fulfill the withholding obligation, (i) tender previously-acquired shares of Common Stock or have shares of stock withheld from the exercise, provided that the shares have an aggregate Fair Market Value sufficient to satisfy in whole or in part the applicable withholding taxes; and/or (ii) utilize the broker-assisted exercise procedure described in Section 6.5 to satisfy the withholding requirements related to the exercise of a Stock Option.

(c) Notwithstanding the foregoing, a Participant may not use shares of Common Stock to satisfy the withholding requirements to the extent that (i) there is a substantial likelihood that the use of such form of payment or the timing of such form of payment would subject the Participant to a substantial risk of liability under Section 16 of the Exchange Act; (ii) such withholding would constitute a violation of the provisions of any law or regulation, or (iii) such withholding would cause adverse accounting consequences for the Company.

C-25

16.6 No Guarantee of Tax Consequences. Neither the Company, the Board, the Committee nor any other Person make any commitment or guarantee that any federal, state, local or foreign tax treatment will apply or be available to any Participant or any other Person hereunder.

16.7 Severability. If any provision of the Plan or any Award Agreement shall be determined to be illegal or unenforceable by any court of law in any jurisdiction, the remaining provisions hereof and thereof shall be severable and enforceable in accordance with their terms, and all provisions shall remain enforceable in any other jurisdiction.

16.8 Stock Certificates; Book Entry Form. Notwithstanding any provision of the Plan to the contrary, unless otherwise determined by the Committee or required by any applicable law, rule or regulation, any obligation set forth in the Plan pertaining to the delivery or issuance of stock certificates evidencing shares of Common Stock may be satisfied by having issuance and/or ownership of such shares recorded on the books and records of the Company (or, as applicable, its transfer agent or stock plan administrator).

16.9 Governing Law. The Plan and all rights hereunder shall be subject to and interpreted in accordance with the laws of the State of New Jersey, without reference to the principles of conflicts of laws, and to applicable Federal securities laws.

17. Effective Date, Amendment and Termination

17.1 Effective Date. The Plan shall be effective upon adoption by the Board, provided that the Plan, provided that any Awards made under the Plan shall be subject to approval of the Plan by the requisite percentage of the holders of the Common Stock of the Company.

17.2 Amendment; Termination. The Board may suspend or terminate the Plan (or any portion thereof) at any time and may amend the Plan at any time and from time to time in such respects as the Board may deem advisable or in the best interests of the Company or any Subsidiary; provided, however, that (a) no such amendment, suspension or termination shall materially and adversely affect the rights of any Participant under any outstanding Awards, without the consent of such Participant, (b) to the extent necessary and desirable to comply with any applicable law, regulation, or stock exchange rule, the Company shall obtain stockholder approval of any Plan amendment in such a manner and to such a degree as required, and (c) stockholder approval is required for any amendment to the Plan that (i) increases the number of shares of Common Stock available for issuance under the Plan, or (ii) changes the persons or class of persons eligible to receive Awards. For purposes of clause (a) above, no modification or amendment of an Incentive Stock Option shall be considered to materially and adversely affect the rights of a Participant solely because such modification or amendment causes an Incentive Stock Option to become a Nonqualified Stock Option or to be considered granted as of the date of such modification or amendment pursuant to Section 424 of the Code and Treasury Regulations Section 1.424-1(e). The Plan will continue in effect until terminated in accordance with this Section 17.2; *provided, however*, that no Award will be granted hereunder on or after the 10th anniversary of the date of the Plan's initial adoption by the Board (the "**Expiration Date**"); *but provided further*, that Awards granted prior to such Expiration Date may extend beyond that date.

INITIAL BOARD APPROVAL: **April 30, 2025**

INITIAL STOCKHOLDER APPROVAL: _____, **2025**

C-26

MATINAS BIOPHARMA HOLDINGS, INC.
1545 ROUTE 206 SOUTH - SUITE 302
BEDMINSTER, NJ 07921



SCAN TO
VIEW MATERIALS & VOTE



VOTE BY INTERNET - www.proxyvote.com or scan the QR Barcode above
Use the Internet to transmit your voting instructions and for electronic delivery of information. Vote by 11:59 P.M. ET on 06/22/2025. 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.

During The Meeting - Go to www.virtualshareholdermeeting.com/MTNB2025

You may attend the meeting via the Internet and vote during the meeting. Have the information that is printed in the box marked by the arrow available and follow the instructions.

VOTE BY PHONE - 1-800-690-6903

Use any touch-tone telephone to transmit your voting instructions. Vote by 11:59 P.M. ET on 06/22/2025. Have your proxy card in hand when you call and then follow the instructions.

VOTE BY MAIL

Mark, sign and date your proxy card and return it in the postage-paid envelope we have provided or return it to Vote Processing, c/o Broadridge, 51 Mercedes Way, Edgewood, NY 11717.

TO VOTE, MARK BLOCKS BELOW IN BLUE OR BLACK INK AS FOLLOWS:

KEEP THIS PORTION FOR YOUR RECORDS
DETACH AND RETURN THIS PORTION ONLY

THIS PROXY CARD IS VALID ONLY WHEN SIGNED AND DATED.

	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.
The Board of Directors recommends you vote FOR the following:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1. Election of Directors				
Nominees				
01) Evelyn D'An			02) Jerome Jabbour	
			03) Keith Murphy	
			04) Edward Neugeboren	
			05) Robin L. Smith	
The Board of Directors recommends you vote FOR proposals 2, 3, 4 and 5.				
2. To approve, on an advisory basis, the compensation of the Company's named executive officers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3. To approve an amendment to the Company's Certificate of Incorporation to effect up to two reverse stock splits of common stock having an aggregate ratio in the range of 1-for-2 to 1-for-199 over a period of two years, with such reverse stock splits to be effected at such ratios, times and dates, if at all, as determined by the Board of Directors in its sole discretion.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4. To approve an amendment to the Company's Certificate of Incorporation, as amended, to increase the number of its authorized shares of common stock from 250,000,000 to 500,000,000 and to make a corresponding change to the number of authorized shares of capital stock.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5. To approve the Matinas BioPharma Holdings, Inc. 2025 Equity Incentive Plan.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
NOTE: To consider any other matters that may properly come before the Annual Meeting.				
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.				
<div></div>		<div></div>		
Signature [PLEASE SIGN WITHIN BOX]		Date		
<div></div>		<div></div>		
Signature (Joint Owners)		Date		

0000679292_1 R1 0.0.2

Important Notice Regarding the Availability of Proxy Materials for the Annual Meeting:
The Notice and Proxy Statement and Form 10-K are available at www.proxyvote.com

MATINAS BIOPHARMA HOLDINGS, INC.
Annual Meeting of Stockholders
June 23, 2025 9:00 AM, EDT
This proxy is solicited by the Board of Directors

The stockholder hereby appoints Jerome D. Jabbour and Keith Kucinski, or either of them, as proxies, each with the power to appoint their substitute, and hereby authorizes them to represent and to vote, as designated on the reverse side of this ballot, all of the shares of stock of Matinas BioPharma Holdings, Inc. that the stockholder is entitled to vote at the Annual Meeting of Stockholders to be held at 9:00 AM, EDT on June 23, 2025, via the internet at www.virtualshareholdermeeting.com/MTNB2025, and any adjournment or postponement thereof.

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