

MATINAS BIOPHARMA HOLDINGS, INC.

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

NOTICE OF ANNUAL MEETING OF STOCKHOLDERS

To be held on November 1, 2018

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 at the offices of Lowenstein Sandler LLP, located at One Lowenstein Drive, Roseland, NJ 07068, on November 1, 2018, beginning at 9 a.m. local time. At the Annual Meeting, stockholders will act on the following matters:

- To elect seven directors to serve until the next Annual Meeting of Stockholders and until their respective successors shall have been duly elected and qualified;
- To ratify the appointment of EisnerAmper LLP as our independent registered public accounting firm for the year ending December 31, 2018; and
- To consider any other matters that may properly come before the Annual Meeting.

Only stockholders of record of our common stock and our Series A Preferred Stock at the close of business on September 12, 2018 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 or not, you may vote your shares by marking, signing, dating and mailing the enclosed proxy card in the envelope provided. If you attend the meeting and prefer to vote in person, 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.

By Order of the Board of Directors

/s/ Jerome D. Jabbour

Jerome D. Jabbour
Chief Executive Officer

September 24, 2018
Bedminster, New Jersey

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 November 1, 2018 at 9 a.m. local time, at the offices of Lowenstein Sandler LLP, located at One Lowenstein Drive, Roseland, NJ 07068, 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 September 24, 2018.

Important Notice of Availability of Proxy Materials for the Annual Meeting of Stockholders to be held on November 1, 2018.

Our proxy materials including our Proxy Statement for the 2018 Annual Meeting, our Annual report for the fiscal year ended December 31, 2017 and proxy card are available on the Internet at www.proxyvote.com. *Under Securities and Exchange Commission rules, we are providing access to our proxy materials both by sending you this full set of proxy materials, and by notifying you of the availability of our proxy materials on the Internet.*

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 seven directors to serve until the next Annual Meeting of Stockholders and until their respective successors shall have been duly elected and qualified;
- To ratify the appointment of EisnerAmper LLP as our independent registered public accounting firm for the year ending December 31, 2018; 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 and the appointment of EisnerAmper LLP as our independent registered public accounting firm for the year ending December 31, 2018 is advisable and in the best interests of the Company and its stockholders and recommends that you vote FOR these proposals.

Who is entitled to vote at the meeting?

Only stockholders of record of our common stock and our Series A Preferred Stock at the close of business on the record date, September 12, 2018, are entitled to receive notice of the Annual Meeting and to vote the shares of common 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 Series A Preferred Stock are entitled to vote on an as converted basis with the common stock.

As of the record date, we had 94,636,391 outstanding shares of common stock and 1,467,858 shares of Series A Preferred Stock, which is convertible into 14,678,580 shares of common stock. A total of 109,314,971 shares were entitled to vote.

Who can attend the meeting?

All stockholders as of the record date, or their duly appointed proxies, may attend the Annual Meeting. Please note that if you hold your shares in "street name" (that is, through a broker or other nominee), you will need to bring a copy of your proxy card delivered to you by your broker or a legal proxy given to you by your broker and check in at the registration desk at the meeting.

If you are a stockholder of record and plan to attend the Annual Meeting, please contact the Corporate Secretary by email at corporatesecretary@matinasbiopharma.com or by phone at (908) 443-1860 to register to attend the Annual Meeting. If you hold shares through an intermediary, such as a bank or broker, and you plan to attend, you must send a written request to attend either by regular mail or email, along with proof of share ownership, such as a bank or brokerage firm account statement, confirming ownership to: Matinas BioPharma Holdings, Inc., 1545 Route 206 South, Suite 302, Bedminster NJ 07921, Attn: Corporate Secretary or corporatesecretary@matinasbiopharma.com. Please plan to arrive at the meeting location within a reasonable period of time before the start of the Annual Meeting.

What constitutes a quorum?

The presence at the Annual Meeting, in person or by proxy, of the holders of a majority of our common stock outstanding 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 by completing, dating and signing the enclosed proxy card and returning it in the enclosed postage-paid envelope.

Your shares will be voted as you indicate on your proxy card. If you vote the enclosed proxy but you 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, attend the Annual Meeting and prefer to vote in person, 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 and casting your vote in person.

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 in person 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 in person 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 a majority in voting power of the shares of common stock and Series A Preferred Stock outstanding on the record date and entitled to vote at the meeting must be present, in person 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 seven nominees receiving the highest number of FOR votes (from the holders of shares present in person or represented by proxy) will be elected as directors.
- With respect to the ratification of the appointment of EisnerAmper LLP as our independent registered public accounting firm (Proposal No. 2), approval will require the affirmative vote of a majority of the votes cast in person or 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 in person or by proxy at the Annual Meeting.

Stockholders 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”, such as the ratification of auditors. Nominees cannot vote on non-routine matters unless they receive voting instructions from beneficial holders, resulting in so-called “broker non-votes.”

The election of directors (Proposal No. 1) is not considered to be a “routine” matter and brokers are not permitted to vote on this matter if the broker has not received instructions from the beneficial owner. Accordingly, it is particularly important that beneficial owners instruct their brokers how they wish to vote their shares. The ratification of our independent registered public accounting firm (Proposal No. 2) is considered to be a “routine” matter, and hence your brokerage firm will be able to vote on Proposals No. 2 even if it does not receive instructions from you, so long as it holds your shares in its name.

How are we soliciting this proxy?

We are soliciting this proxy on behalf of our Board by mail and will pay all expenses associated therewith. Some of our officers 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 1: ELECTION OF DIRECTORS

At the Annual Meeting, seven 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: Herbert Conrad, Jerome D. Jabbour, Patrick LePore, Eric Ende, James Scibetta, Adam Stern and Matthew Wikler. Each of these seven director nominees named in the proxy statement is current member of the Board.

It is the intention of the persons named in the proxies for the holders of common stock and Series A Preferred 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 of Directors. 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 in person 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 2018 Annual Meeting:

<u>Name</u>	<u>Age</u>	<u>Position(s)</u>	<u>Served as an Officer or Director Since</u>
Herbert Conrad	85	Chairman of the Board	2013
Patrick LePore	63	Vice Chairman of the Board	2018
Jerome D. Jabbour	44	Chief Executive Officer and Director	2013
Eric Ende	50	Director	2017
James Scibetta	53	Director	2013
Adam Stern	54	Director	2013
Matthew Wikler	68	Director	2018

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

Herbert Conrad has served as our Chairman of the Board since July 2013 and as Chairman of the Board of Matinas BioPharma since October 2012. He also serves on the board of directors of Celldex Therapeutics, Inc. (NASDAQ: CLDX), Arbutus Biopharma Corporation (NASDAQ: ABUS) and as an Advisor to the Seaver Autism Center at Mount Sinai Hospital. Mr. Conrad was the President of the U.S. Pharmaceuticals Division of Hoffmann-La Roche, Inc. from 1982 until his retirement in 1993. Prior to that, he held many positions of increasing responsibility at Roche Pharmaceuticals in the United States. Mr. Conrad previously served on the board of directors of Pharmasset, Inc. (chairman), Savient Pharmaceuticals, Inc., (NASDAQ: SVNT) Dura Pharmaceuticals, Inc., UroCor, Inc., GenVec, Inc. (NASDAQ: GNVC) (chairman), Sicor, Inc., Bone Care International, Inc. (chairman), Sapphire Therapeutics, Inc. (chairman), the medical advisory board of Henry Schein Inc. (NASDAQ: HSIC), and he was a Director and Co-Founder of Reliant. Pharmasset was acquired by Gilead Sciences, Inc. for \$11 billion in 2011. He received B.S. and M.S. degrees from the Brooklyn College of Pharmacy and an honorary Doctorate in Humane Letters from Long Island University. We believe Mr. Conrad is qualified to serve on our board of directors due to his extensive expertise and experience in the life sciences industry and his extensive board experience.

Patrick LePore has served as our Vice Chairman of the Board since September 5, 2018. Mr. LePore served as chairman, chief executive officer and president of Par Pharmaceuticals, Inc. (NYSE:PRX) from September 2006 until the company's acquisition by private equity investor TPG in November 2012. He remained as chairman of the new company where he led the sale of the company to Endo Pharmaceuticals (NASDAQ: ENDP). Mr. LePore began his career with Hoffmann LaRoche. Later, he founded Boron LePore and Associates, a medical communications

company, which he took public in 1997 and which was eventually sold to Cardinal Health. He is a member of the board of directors of Lannett Company, Inc. (NYSE: LCI) and is a trustee of Villanova University. He previously served as a member of the board of directors of PharMerica Corporation (NYSE: PMC) and Innoviva, Inc. (NASDAQ: INVA). Mr. LePore earned his bachelor's degree from Villanova University and Master of Business Administration from Fairleigh Dickinson University. We believe Mr. LePore is qualified to serve on our board of directors due to his executive leadership and significant experience in the life sciences industry and his public company board experience.

Jerome D. Jabbour See description under "Management."

Eric Ende has served on our board of directors since April 2017. Dr. Ende is president of Ende BioMedical Consulting Group, a privately-held consulting company which is focused on helping life sciences companies raise capital, identify licensing partners, and optimize corporate structure as well as analyzing both private and public investment opportunities for clients within the life sciences industry, a position he has held since 2009. Dr. Ende serves as co-founder, chief executive and chief financial officer of WellFit Holdings, LLC, a private company focused on developing fitness technologies. In addition, Dr. Ende consulted with Icahn Enterprises in their efforts to appoint board members at Forest Labs, Genzyme, Biogen IDEC, and Amylin. Dr. Ende served on the board of directors and as a member of the audit and risk management committee of Genzyme Corp. (NASDAQ: GENZ) from 2010 until it was acquired by Sanofi (NYSE: SNY) in 2011. Dr. Ende is currently serving on the Technology Transfer Committee of Mount Sinai Innovation Partners and served as the Chairman of the Unsecured Creditor's Committee overseeing the bankruptcy of Egenix, Inc. From 2002 through 2008, Dr. Ende was the senior biotechnology analyst at Merrill Lynch. From 2000 through 2002, Dr. Ende was the senior biotechnology analyst at Banc of America Securities and, from 1997 to 2000, he was a biotechnology analyst at Lehman Brothers. Dr. Ende received an MBA in Finance & Accounting from NYU – Stern Business School in 1997, an MD from Mount Sinai School of Medicine in 1994, and a BS in Biology and Psychology from Emory University in 1990. We believe Dr. Ende is qualified to serve on our board of directors due to his industry experience, including as president of Ende BioMedical Consulting Group and as a biotechnology analyst, and his prior public company board experience.

James S. Scibetta has served as a member of our board of directors since November 2013. He is currently Chief Executive Officer of Maverick Therapeutics, a development stage immune-oncology company. Prior to Maverick, he was President and Chief Financial Officer of Pacira Pharmaceuticals, Inc. (NASDAQ: PCRX), a position he has held since October 2015. Prior to that, Mr. Scibetta was the Chief Financial Officer of Pacira since 2008. Prior to joining Pacira in August 2008, he served as a consultant to Genzyme Corporation following the sale of Bioenvision Inc. (NASDAQ: BIVN) to Genzyme in 2007. From 2006 to 2007 Mr. Scibetta was CFO of Bioenvision. From 2001 to 2006, he was Executive Vice President and Chief Financial Officer of Merrimack Pharmaceuticals Inc. (NASDAQ: MACK). Mr. Scibetta has previously served on the board of directors at the following life sciences companies: Nephros Inc. (NASDAQ: NEPH), Merrimack Pharmaceuticals and Labopharm Inc. Prior to his executive management experience, Mr. Scibetta spent over a decade in investment banking where he was responsible for sourcing and executing transactions for a broad base of public and private healthcare and life sciences companies. Mr. Scibetta received his Bachelor of Science in Physics from Wake Forest University and an MBA from the University of Michigan. We believe Mr. Scibetta is qualified to serve on our board of directors because of his extensive management experience in the pharmaceutical industry, his investment banking experience and his experience as a chief financial officer and audit committee member of several publicly traded companies.

Adam Stern has served as a member of our board of directors since July 2013. Mr. Stern has been the head Private Equity Banking at Aegis Capital Corp. and CEO of SternAegis Ventures since 2012 and became one of our directors in July 2013. Prior to Aegis, from 1997 to November 2012, he was with Spencer Trask Ventures, Inc., most recently as a Senior Managing Director, where he managed the structured finance group focusing primarily on the technology and life science sectors. Mr. Stern held increasingly responsible positions from 1989 to 1997 with Josephthal & Co., Inc., members of the New York Stock Exchange, where he served as Senior Vice President and Managing Director of Private Equity Marketing. He has been a FINRA licensed securities broker since 1987 and a General Securities Principal since 1991. Mr. Stern is a director of Dance Biopharm, Inc. Mr. Stern is a former director of InVivo Therapeutics Holdings Corp. (OTCQB: NVIV), Organovo Holdings, Inc. (NYSE MKT: ONVO), LabStyle Innovations Corporation (OTCBB: DRIO) and PROLOR Biotech Ltd., which was sold to Opko Health, Inc. (NYSE: OPK) for approximately \$600 million in 2013. Mr. Stern holds a Bachelor of Arts degree with honors from The University of South Florida in Tampa. We believe Mr. Stern is qualified to serve on our board of directors because of his extensive experience in corporate finance and experience in the life science industries.

Matthew Wikler has served as a member of our board of directors since January 2018. Dr. Wikler currently serves as the Principal of Infectious Disease Technology Development Consulting (IDTD Consulting) where he provides clinical, medical and regulatory strategic insight to companies developing new technologies for the treatment and prevention of infectious diseases, a position he has held since 2015. Prior to that from 2012 to 2015, Dr. Wikler served at The Medicines Company (NASDAQ: MDCO) as VP, New Business Ventures and VP and Medical Director, Infectious Disease Care. Over the course of his career Dr. Wikler held senior leadership positions for a number of pharmaceutical companies, including as Chief Development Officer of Rib-X Pharmaceuticals, Inc., a privately-held biopharmaceutical company developing new antibiotics to provide superior coverage, safety and convenience for the treatment of serious and life-threatening infections, President and Chief Executive Officer of IASO Pharma Inc., a privately-held clinical stage biotechnology company focused on the development of antibacterial and antifungal therapeutics, the Institute for One World Health, a 501(c)(3) nonprofit drug development organization, Mpex Pharmaceuticals, Inc., a privately-held company focused on developing and manufacturing therapies for antibiotic resistance with focus on gram-negative organisms, Peninsula Pharmaceuticals, Inc., a privately held biopharmaceutical company focused on developing and commercializing antibiotics to treat life-threatening infections (acquired by Johnson & Johnson (NYSE: JNJ)), ViroPharma Incorporated (NASDAQ: VPHM), Bristol-Myers Squibb Company (NYSE: BMY), and Ortho-McNeil Pharmaceutical (a division of Johnson & Johnson). Dr. Wikler began his career at Smith Kline & French/Smith Kline Beecham where he held positions of increasing responsibilities over ten years. Dr. Wikler held a variety of positions at the FDA, including the Deputy Director of the Division of Anti-Infective Drug Products. Dr. Wikler earned a B.A. in Chemistry from Franklin and Marshall, an M.D. degree from Temple University School of Medicine, and his M.B.A. from the University Of Pennsylvania Wharton School Of Business. He completed his Infectious Diseases Fellowship at the Hospital of the University of Pennsylvania and is a Fellow of the Infectious Diseases Society of America. We believe Mr. Wikler is qualified to serve on our board of directors because of his extensive management experience in the pharmaceutical industry and his clinical and regulatory experience in the area of infectious diseases.

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 in person 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 RECOMMENDS THAT THE STOCKHOLDERS VOTE FOR THE
ELECTION OF THE DIRECTOR NOMINEES.**

Corporate Governance Matters

Board of Director Composition

Our board of directors currently consists of seven 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 seven times in 2017. Each of the directors 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. Roleof Rongen, our former chief executive officer and former member of our Board, attended the 2017 Annual Meeting of Stockholders.

Director Independence

Our common stock is listed on the NYSE MKT. Our board of directors 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 directors, our board of directors has determined that Messrs. Herbert Conrad, Patrick LePore, Eric Ende, James Scibetta and Matthew Wikler are “independent directors” as such term is defined in the rules of The NYSE MKT’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 of directors has four standing committees — an Audit Committee, a Compensation Committee, a Nominating and Corporate Governance Committee and a Scientific Advisory Committee.

Audit Committee. The Audit Committee oversees and monitors our financial reporting process and internal control system, review and evaluate the audit performed by our registered independent public accountants and report 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. James Scibetta, Herbert Conrad, and Eric Ende currently serve as members of the Audit Committee with James Scibetta, serving as its chairman. All of the 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. Mr. Scibetta qualifies as an audit committee “financial expert” as that term is defined by SEC rules and regulations. The Audit Committee met four times during 2017. 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. Herbert Conrad, Eric Ende and James Scibetta and Matthew Wikler currently serve as members of the Compensation Committee, with Eric Ende serving as its chairman. Following the 2018 Annual Meeting we expect to reconstitute the Compensation Committee to consist of Eric Ende, as chairman, Patrick LePore, James Scibetta and Matthew Wikler. All of the members of the Compensation Committee are considered independent directors as defined under The NYSE MKT’s listing standards. The Compensation Committee met eight times during 2017. 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. Herbert Conrad, Eric Ende and James Scibetta currently serve as members of the Nominating and Corporate Governance Committee, with Herbert Conrad serving as its chairman. Following the 2018 Annual Meeting, the Nominating and Corporate Governance Committee is expected to be reconstituted as follows: Herbert Conrad, as Chairman, Eric Ende and Patrick LePore. All of the 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 twice times during 2017. Our Board has adopted a Nominating and Corporate Governance Charter, which is available for viewing at www.matinasbiopharma.com.

Scientific Advisory Committee. The Board of Directors has established a Scientific Advisory Committee consisting of Dr. Matthew Wikler, Chair, and Jerome D. Jabbour. The primary function of the Scientific Advisory Committee is to assist the Board in undertaking periodic reviews of our research and development efforts, and clinical trials, and reporting to the Board about developments and strategy, at such times as the Committee determines to be appropriate.

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 background 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 positions of our chairman of the board and chief executive officer are separated. Separating these positions allows our chief executive officer to focus on our day-to-day business, while allowing the chairman of the board to lead the board of directors in its fundamental role of providing advice to and independent oversight of management. Our board of directors recognizes the time, effort and energy that the chief executive officer must devote to his position in the current business environment, as well as the commitment required to serve as our chairman, particularly as the board of directors' oversight responsibilities continue to grow. Our board of directors also believes that this structure ensures a greater role for the independent directors in the oversight of our company and active

participation of the independent directors in setting agendas and establishing priorities and procedures for the work of our board of directors. Our board of directors believes its administration of its risk oversight function has not affected its leadership structure.

Although our bylaws do not require our chairman and chief executive officer positions to be separate, our board of directors believes that having separate positions is the appropriate leadership structure for us at this time and demonstrates our commitment to good corporate governance.

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 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 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. Communication 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 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, Attention: 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.

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	44	Chief Executive Officer and Director	2013
Raphael J. Mannino, Ph.D	71	Senior Vice President, Chief Technology Officer	2015

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. 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 health care services company. Prior to MediMedia, he was the Senior Vice President, Head of Global Legal Affairs of Wockhardt Limited (2008-2012) and Senior Counsel and Assistant Secretary at Reliant (2004-2008). Earlier in his career, he held positions as Commercial Counsel at Alparma, 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.

Raphael J. Mannino has served as our Senior Vice President and Chief Scientific Officer since September 2015. From 1990 until August 2015, Dr. Mannino was an Associate Professor of Pathology and Laboratory Medicine at Rutgers University, New Jersey Medical School. Dr. Mannino founded BioDelivery Sciences, Inc., and served as its President, Chief Executive Officer and Chief Scientific Officer and a member of its Board of Directors from 1995 to 2000, when it was acquired by BioDelivery Sciences International, Inc. (NASDAQ: BDSI). Dr. Mannino served as BDSI's Executive Vice President and Chief Scientific Officer from 2001 to 2009 and a member of its Board of Directors from 2000 to 2007. Dr. Mannino's previous experience includes positions as Assistant, then Associate Professor, Albany Medical College (1980 to 1990), and Instructor then Assistant Professor, Rutgers Medical School (1977 to 1980). His postdoctoral training was from 1973 to 1976 at the Biocenter in Basel, Switzerland. Dr. Mannino received his Ph.D. in Biological Chemistry in 1973 from the Johns Hopkins University, School of Medicine.

EXECUTIVE COMPENSATION

Summary Compensation Table – 2017

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 (other than the chief executive officer) who were serving as executive officers as of December 31, 2017 for services rendered in all capacities to us for the years ended December 31, 2017 and December 31, 2016 and up to two additional individuals for whom disclosure would have been provided but for the fact that the individual was not serving as an executive officer of the Company as of December 31, 2017. These individuals are our named executive officers for 2017.

Name and Principal Position	Year	Salary (\$)	Bonus (\$)	Option Awards ⁽¹⁾ (\$)	All Other Compensation(\$)	Total (\$)
Jerome D. Jabbour, <i>Chief Executive Officer and President</i>	2017	299,000	90,000	881,483	—	1,270,483
	2016	282,804	90,000	108,500	—	481,304
Dominick DiPaolo ⁽²⁾ <i>Former Senior Vice President, Quality and Regulatory Compliance</i>	2017	188,141	—	960,801	—	1,148,942
	2016	—	—	—	—	—
Roelof Rongen ⁽³⁾ <i>Former Chief Executive Officer</i>	2017	383,333	160,000	1,322,224	—	1,865,557
	2016	283,750	160,000	116,250	—	560,000

(1) Amounts reflect the grant date fair value of option awards granted in 2017 and 2016 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.

(2) On June 14, 2018, we terminated the employment of Dominick M. DiPaolo effective immediately.

(3) Roelof Rongen stepped down as our Chief Executive Officer and a member of our board of directors effective March 15, 2018.

Narrative Disclosure to Summary Compensation Table

Employment Agreements with Our Named Executive Officers

Jabbour

On September 3, 2013, we entered into an employment agreement with Mr. Jabbour for a period of three years, which was effective as of October 4, 2013. Under the terms of Mr. Jabbour's employment agreement, Mr. Jabbour received a signing bonus of \$75,000 and will receive a base salary of \$275,000 per year. In addition, Mr. Jabbour will also be eligible to receive an annual bonus, which is targeted at 30% 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 will also be eligible to receive option grants at the discretion of our Compensation Committee. On October 4, 2013, Mr. Jabbour received a grant of 200,000 options at an exercise price of \$0.94 per share. The options will vest in equal monthly installments over three years from the date of grant. Mr. Jabbour also received a grant of 150,000 at an exercise price of \$0.94 per share, which vests in equal monthly installments over three years beginning on August 1, 2013. If we terminate Mr. Jabbour's employment without cause or Mr. Jabbour resigns with good reason, we are required to pay him a severance of up to nine months of his base salary plus benefits. In addition, the vesting of his outstanding options will be accelerated by six months upon such termination. 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 a severance of up to eighteen months of his base salary and his target annual bonus plus benefits. In addition, his outstanding options would vest in full upon such termination. Mr. Jabbour's employment agreement provides for an increase in base salary of \$50,000 annually, upon the closing of an additional round of financing of at least \$15 million and the initiation of the first Phase III study of MAT9001. Mr. Jabbour will also be 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. As part of our cost reduction measures, we have entered into a letter agreement with Mr. Jabbour effective as of April 1, 2016 that provides for, among other things, a 10% reduction in base salary through December 31, 2016 and a requirement that the executive contribute 20% of the applicable premium cost for healthcare coverage under the Company's group

health plan. The letter agreement also provides that for purposes of calculating any severance payments, the base salary will be the base salary prior to such temporary reduction and therefore the temporary reduction in base salary will not impact the amounts that would be paid to the executive if his employment was terminated. Effective October 1, 2016, the Board restated Mr. Jabbour's salary to its level prior to the 10% salary reduction.

On March 22, 2018, we entered into a new employment agreement with Mr. Jabbour. Under the terms of Mr. Jabbour's employment agreement, Mr. Jabbour received a signing bonus of \$84,000 and receives a base salary of \$350,000 per year, subject to increase to (i) \$400,000 in the event we complete an equity financing transaction raising gross proceeds of at least \$5,000,000 prior to March 15, 2019 and (ii) \$425,000 in the event we complete an equity financing transaction raising gross proceeds of at least \$15,000,000 prior to March 15, 2019. In addition, Mr. Jabbour will also be 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 received an option grant to purchase 1,000,000 shares on March 22, 2018 and will also be eligible to receive additional option grants and equity 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 a severance of up to twelve months of his base salary plus COBRA benefits for twelve months. In addition, the vesting for 50% of his outstanding options 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 a severance of up to twenty-four months of his base salary and his target annual bonus plus 18 months of COBRA benefits. In addition his 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.

DiPaolo

On April 1, 2017 we entered into an employment agreement with Mr. DiPaolo. Under the terms of Mr. DiPaolo's employment agreement, upon signing the agreement he received a grant of 350,000 options and he will receive a base salary of \$250,000 per year. In addition, Mr. DiPaolo will also be eligible to receive an annual bonus, which is targeted at 30% of his annual base salary but which may be adjusted by our Compensation Committee based on his individual performance and our performance as a whole. Mr. DiPaolo will also be eligible to receive option grants at the discretion of our Compensation Committee. On September 28, 2017 the Compensation Committee of the Board of Directors approved a salary increase to \$275,000 per year. In addition, the Committee also approved a grant of 350,000 options.

On June 14, 2018, we entered into a separation agreement with Mr. DiPaolo pursuant to which he received one month in base salary as severance, payable in accordance with our standard payroll practices, subject to the execution of a separation agreement and general release.

Rongen

On July 30, 2013 we entered into an employment agreement with Mr. Rongen for a period of three years. Under the terms of Mr. Rongen's employment agreement, he received a signing bonus of \$150,000 and will receive a base salary of \$300,000 per year. In addition, Mr. Rongen will also be 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. Rongen may also be eligible to receive option grants at the discretion of our Compensation Committee. In October 2013, Mr. Rongen received a grant of 350,000 options at an exercise price of \$0.94 per share. The options vest in equal monthly installments over three years from August 1, 2013. If we terminate Mr. Rongen's employment without cause or Mr. Rongen resigns with good reason, we are required to pay him a severance of up to twelve months of his base salary plus benefits. In addition, the vesting of his outstanding options will be accelerated by six months upon such termination. If we terminate Mr. Rongen's employment without cause during the 24 month period immediately following a change of control or Mr. Rongen resigns with good reason during the 24 month period immediately following a change of control, we are required to pay him a severance of up to eighteen months of his base salary and his target annual bonus plus benefits. In addition, his outstanding options would vest in full upon such termination. Mr. Rongen's employment agreement provides for an increase in base salary of \$50,000 annually, upon a future closing of an additional round of financing of at least \$15 million and the initiation of the first Phase III study of MAT9001. Mr. Rongen will also be subject to a customary

non-disclosure agreement, pursuant to which Mr. Rongen 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. As part of our cost reduction measures, we have entered into a letter agreement with Mr. Rongen effective as of April 1, 2016 that provides for, among other things, a 10% reduction in base salary through December 31, 2016 and a requirement that the executive contribute 20% of the applicable premium cost for healthcare coverage under the Company's group health plan. The letter agreement also provides that for purposes of calculating any severance payments, the base salary will be the base salary prior to such temporary reduction and therefore the temporary reduction in base salary will not impact the amounts that would be paid to the executive if his employment was terminated. Effective October 1, 2016, the Board restated Mr. Rongen's salary to its level prior to the 10% reduction.

On February 21, 2017, the Compensation Committee of the Board approved for Mr. Rongen an annual salary of \$400,000 effective March 1, 2017 and target bonus of 50%. On March 27, 2017, Matinas BioPharma Holdings, Inc. (the "Company") entered into a new employment agreement with its chief executive officer, Roelof Rongen, with the terms effective as of March 1, 2017. Under the terms of Mr. Rongen's employment agreement, he will receive a base salary of \$400,000 per year, subject to periodic adjustments as determined by our Board or Compensation Committee. In addition, Mr. Rongen will also be eligible to receive an annual bonus, which is targeted at 50% of his base salary based on his individual performance and our performance as a whole, however the achievement of the performance criteria will be determined by our Board or Compensation Committee. Mr. Rongen received an annual bonus of \$160,000 for his performance during fiscal 2016. Mr. Rongen may also be eligible to receive option grants or other equity awards at the discretion of our Compensation Committee. In February 2017, Mr. Rongen received a grant of 600,000 options to purchase shares of our common stock at an exercise price of \$3.32 per share. The options vest in equal monthly installments over three years. If we terminate Mr. Rongen's employment without cause or Mr. Rongen resigns with good reason, subject to Mr. Rongen's execution and non-revocation of a release and compliance with any post-termination obligations owed to us, we are required to pay him a severance of up to twelve months of his base salary, in effect on the date of termination, plus COBRA payments for twelve months. In addition, the vesting of his outstanding options, and any other outstanding equity held by him at the time of his termination, will be accelerated by six months upon such termination. If we terminate Mr. Rongen's employment without cause during the 24 month period immediately following a change of control or Mr. Rongen resigns with good reason during the 24 month period immediately following a change of control, subject to Mr. Rongen's execution and non-revocation of a release and compliance with any post-termination obligations owed to us, we are required to pay him a severance of up to eighteen months of his base salary, in effect on the date of termination, and his target annual bonus for the year in which the termination occurs plus COBRA payments for eighteen months. In addition, his outstanding options and any other outstanding equity held by him at the time of his termination, would vest in full upon such termination. Mr. Rongen is also subject to a customary non-disclosure agreement, pursuant to which Mr. Rongen has agreed to be subject to a non-compete and non-solicit covenant during the term of his employment and for a period of eighteen months following termination of his employment.

We entered into a separation agreement dated March 15, 2018 with Mr. Rongen pursuant to which, among other things, Mr. Rongen received 15 months in base salary as severance, payable in accordance with the Company's standard payroll practices over 15 months, Mr. Rongen agreed to provide transition services for a period of three months to assist in the transition process and Mr. Rongen was provided with an extension through two years after the separation date of the exercise period for his vested stock options. The separation agreement further provided for certain restrictions on sales of shares of our common stock held by Mr. Rongen.

Outstanding Equity Awards at Fiscal Year-End Table – 2017

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, 2017.

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	122,232	277,768	\$ 3.32	Feb 20, 2027
	223,629	126,371	\$ 0.43	Feb 14, 2026
	175,000	—	\$ 0.41	Jan 27, 2025
	350,000	—	\$ 1.28	July 20, 2024
	350,000	—	\$ 0.94	Oct 3, 2023
Dominick DiPaolo	38,892	311,108	\$ 1.31	Sep 27, 2017
	87,507	262,493	\$ 2.86	Apr 9, 2017
Roelof Rongen	183,348	416,652	\$ 3.32	Feb 20, 2027
	239,603	135,397	\$ 0.43	Feb 14, 2026
	300,000	—	\$ 0.41	Jan 27, 2025
	350,000	—	\$ 1.28	Jul 20, 2024
	350,000	—	\$ 0.94	Oct 2, 2023

2013 Equity Compensation Plan

General

On August 2, 2013, our Board of Directors adopted the 2013 Equity Compensation Plan pursuant to the terms described herein. The 2013 Equity Compensation 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, we amended and restated our 2013 Equity Compensation Plan, primarily to include “evergreen” provisions, which state provide that 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 equal to 4% of the number of shares of common stock outstanding on December 31 of the preceding calendar year or a lesser number of shares of common stock determined by the Board of Directors; to amend the definition of “fair market value”; and to increase the limits on awards under the Plan. The 2013 Equity Compensation Plan, as amended and restated, is referred to herein as the “2013 Plan.”

The general purpose of the 2013 Plan is to provide an incentive to our employees, directors, consultants and advisors by enabling them to share in the future growth of our business. Our Board of Directors believes that the granting of stock options, restricted stock awards, unrestricted stock awards and similar kinds of equity-based compensation promotes continuity of management and increases incentive and personal interest in the welfare of our Company by those who are primarily responsible for shaping and carrying out our long range plans and securing our growth and financial success.

Our Board of Directors believes that the 2013 Plan will advance our interests by enhancing our ability to (a) attract and retain employees, consultants, directors and advisors who are in a position to make significant contributions to our success; (b) reward our employees, consultants, directors and advisors for these contributions; and (c) encourage employees, consultants, directors and advisors to take into account our long-term interests through ownership of our shares.

Description of the 2013 Equity Compensation Plan

The following description of the principal terms of the 2013 Plan is a summary and is qualified in its entirety by the full text of the 2013 Plan, which is attached as Exhibit 10.6 hereto.

Administration. The 2013 Plan will be administered by the Compensation Committee of our Board of Directors, provided that the entire Board of Directors may act in lieu of the Compensation Committee on any matter, subject

to certain requirements set forth in the 2013 Plan. The Compensation Committee may grant options to purchase shares of our common stock, stock appreciation rights, stock units, restricted shares of our common stock, performance shares, performance units, incentive bonus awards, other cash-based awards and other stock-based awards. The Compensation Committee also has broad authority to determine the terms and conditions of each option or other kind of award, and adopt, amend and rescind rules and regulations for the administration of the 2013 Plan. Subject to applicable law, the Compensation Committee may authorize one or more reporting persons (as defined in the 2013 Plan) or other officers to make awards (other than awards to reporting persons, or other officers whom the Compensation Committee has specifically authorized to make awards). No awards may be granted under the 2013 Plan on or after the ten year anniversary of the adoption of the 2013 Plan by our Board of Directors, but awards granted prior to such tenth anniversary may extend beyond that date.

Eligibility. Awards may be granted under the 2013 Plan to any person who is an employee, officer, director, consultant, advisor or other individual service provider of the Company or any subsidiary, or any person who is determined by the Compensation Committee to be a prospective employee, officer, director, consultant, advisor or other individual service provider of the Company or any subsidiary.

Shares Subject to the 2013 Plan. As of March 15, 2018 the aggregate number of shares of common stock available for issuance in connection with awards granted under the 2013 Plan is 17,890,137 shares, subject to customary adjustments for stock splits, stock dividends or similar transactions (the “Initial Limit”). Incentive Stock Options may be granted under the 2013 Plan with respect to all of those shares. The number of shares of common stock available for issuance under the 2013 Plan will automatically increase on January 1st of each year for a period of ten years, commencing on January 1, 2015, in an amount equal to four percent (4%) of the total number of shares of common stock outstanding on December 31st of the preceding calendar year (the “Annual Increase”). Notwithstanding the foregoing, the Board of Directors may act prior to the first day of any calendar year, to provide that there shall be no increase in the share reserve for such calendar year or that the Annual Increase in the share reserve for such calendar year shall be a lesser number of shares of common stock than would otherwise occur pursuant to the preceding sentence. The number of shares of common stock which may be issued in respect of Incentive Stock Options is equal to the Current Limit, and will be increased on each January 1, by the Annual Increase for such calendar year.

To the extent that any award under the 2013 Plan payable in shares of common stock is forfeited, cancelled, 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 be available for future grants under the 2013 Plan. Shares of common stock that otherwise would have been issued upon the exercise of a stock option or in payment with respect to any other form of award, that are surrendered in payment or partial payment of taxes required to be withheld with respect to the exercise of such stock option or the making of such payment, will also be available for future grants under the 2013 Plan.

Terms and Conditions of Options. Options granted under the 2013 Plan may be either “incentive stock options” that are intended to meet the requirements of Section 422 of the Internal Revenue Code of 1986, as amended (the “Code”) 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 2013 Plan. The exercise price of stock options may not be less than the fair market value, on the date of grant, per share of our common stock issuable upon exercise of the option (or 110% of fair market value in the case of incentive options granted to a ten-percent stockholder).

If on the date of grant the common stock is listed on a stock exchange or national market system, the fair market value shall generally be the closing sale price as of such date, or if there were no trades recorded on such date, then the most recent date preceding such date on which trades were recorded. If on the date of grant the common stock is traded in an over-the-counter market, the fair market will generally be the average of the closing bid and asked prices for the shares of common stock as of such date, or, if there are no closing bid and asked prices for the shares of common stock on such date, then the average of the bid and 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. If the common stock is not listed on a national securities exchange or national market system or traded in an over-the-counter market, the fair market value shall be determined by the Compensation Committee in a manner consistent with Section 409A of the Internal Revenue Code of 1986, as amended. Notwithstanding the foregoing, if on the date of grant the common stock is listed on a stock exchange or is quoted on a national market system, or is traded in an over-the-counter market, then 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, the Compensation 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).

No option may be exercisable for more than ten years from the date of grant (five years in the case of an incentive stock option granted to a ten-percent stockholder). Options granted under the 2013 Plan will be exercisable at such time or times as the Compensation Committee prescribes at the time of grant. No employee may receive incentive stock options 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 option before exercise.

Generally, the option price may be paid in cash or by bank check, or such other means as the Compensation Committee may accept. As set forth in an award agreement or otherwise determined by the Compensation Committee, in its sole discretion, at or after grant, payment in full or part of the exercise price of an option may be made (a) in the form of shares of common stock that have been held by the participant for such period as the Compensation 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 Compensation Committee in connection with the 2013 Plan; and/or (iv) by such other method as may be approved by the Compensation Committee and set forth in an 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 or the recipient's guardian or legal representative. However, the Compensation Committee may permit the transfer of a nonqualified stock option, share-settled stock appreciation right, restricted stock award, performance share or share-settled other stock-based award either (a) by instrument to the participant's immediate family (as defined in the 2013 Plan), (b) 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 (c) 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.

Stock Appreciation Rights. The Compensation Committee may grant stock appreciation rights independent of or in connection with an option. The Compensation Committee will determine the terms applicable to stock appreciation rights. The base price of a stock appreciation right will be determined by the Compensation Committee, but will not be less than 100% of the fair market value of a share of our common stock with respect to the date of grant of such stock appreciation right. The maximum term of any SAR granted under the 2013 Plan is ten years from the date of grant. Generally, each SAR stock appreciation right will entitle a participant upon exercise to an amount equal to:

- 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, multiplied by
- the number of shares as to which such stock appreciation right is exercised.

Payment may be made in shares of our common stock, in cash, or partly in common stock and partly in cash, all as determined by the Compensation Committee.

Restricted Stock and Stock Units. The Compensation Committee may award restricted common stock and/or stock units under the 2013 Plan. Restricted stock awards consist of shares of stock that are transferred to a participant subject to restrictions that may result in forfeiture if specified conditions are not satisfied. Stock units confer the right to receive shares of our common stock, cash, or a combination of shares and cash, at a future date upon or following the attainment of certain conditions specified by the Compensation Committee. The Compensation Committee will determine the restrictions and conditions applicable to each award of restricted stock or stock units, which may include performance-based conditions. Dividends 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 times of vesting or other payment of the restricted stock award. Stock unit awards may be granted with dividend equivalent rights, which may be accumulated and may

be deemed reinvested in additional stock units, as determined by the Compensation Committee in its discretion. If any dividend equivalents are paid while a stock unit award is subject to restrictions, the dividend equivalents shall be subject to the same restrictions on transferability as the underlying stock units, unless otherwise set forth in an award agreement. Unless the Compensation Committee determines otherwise, holders of restricted stock will have the right to vote the shares.

Performance Shares and Performance Units. The Compensation Committee may award performance shares and/or performance units under the 2013 Plan. Performance shares and performance units are awards which are earned during a specified performance period subject to the attainment of performance criteria, as established by the Compensation Committee. The Compensation Committee will determine the restrictions and conditions applicable to each award of performance shares and performance units.

Incentive Bonus Awards. The Compensation Committee may award Incentive Bonus Awards under the 2013 Plan. Incentive Bonus Awards 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 Compensation Committee. Incentive Bonus Awards will be paid in cash or common stock, as set forth in an award agreement

Other Stock-Based and Cash-Based Awards. The Compensation Committee may award other types of equity-based or cash-based awards under the 2013 Plan, including the grant or offer for sale of unrestricted shares of our common stock and payment in cash or otherwise of amounts based on the value of shares of common stock.

Section 162(m) Compliance. If stock or cash-based awards are intended to satisfy the conditions for deductibility under Section 162(m) of the Code as “performance-based compensation,” the performance criteria will be selected from among the following, which may be applied to our Company as a whole, any subsidiary or any division or operating unit thereof: (a) pre-tax income; (b) after-tax income; (c) net income; (d) operating income or profit; (e) cash flow, free cash flow, cash flow return on investment, net cash provided by operations, or cash flow in excess of cost of capital; (f) earnings per share; (g) return on equity; (h) return on sales or revenues; (i) return on invested capital or assets; (j) cash, funds or earnings available for distribution; (k) appreciation in the fair market value of the common stock; (l) operating expenses; (m) implementation or completion of critical projects or processes; (n) return on investment; (o) total return to stockholders; (p) dividends paid; (q) net earnings growth; (r) related return ratios; (s) increase in revenues; (t) the Company’s published ranking against its peer group of pharmaceutical companies based on total stockholder return; (u) net earnings; (v) changes (or the absence of changes) in the per share or aggregate market price of the common stock; (w) number of securities sold; (x) earnings before or after any one or more of the following items: interest, taxes, depreciation or amortization, as reflected in the Company’s financial reports for the applicable period; (y) total revenue growth; (z) economic value created; (aa) operating margin or profit margin; (bb) share price or total shareholder return; (cc) cost targets, reductions and savings, productivity and efficiencies; (dd) strategic business criteria, consisting of one or more objectives based on meeting objectively determinable criteria: specified market penetration, geographic business expansion, progress with research and development activities, investor satisfaction, employee satisfaction, human resources management, supervision of litigation, information technology, and goals relating to acquisitions, divestitures, joint ventures and similar transactions, and budget comparisons; (ee) objectively determinable personal or professional objectives, including any of the following performance goals: the implementation of policies and plans, the negotiation of transactions, the development of long term business goals, formation of joint ventures, research or development collaborations, and the completion of other corporate transactions, and (ff) any combination of, or a specified increase or improvement in, any of the foregoing.

At the end of the performance period established in connection with any award, the Compensation Committee will determine the extent to which the performance goal or goals established for such award have been attained, and shall determine, on that basis, the number of performance shares or performance units included in such award that have been earned and as to which payment will be made. The Compensation Committee will certify in writing the extent to which it has determined that the performance goal or goals established by it for such award have been attained.

With respect to awards intended to be performance-based compensation under Section 162(m) of the Code, no participant of the 2013 Plan may receive in any one fiscal year (a) options or stock appreciation rights relating to more than 2,500,000 shares of our common stock, and (b) stock units, restricted shares, performance shares, performance

units or other stock-based awards that are denominated in shares of common stock relating to more than 2,500,000 shares of our common stock in the aggregate. The maximum dollar value payable to any participant for a fiscal year of the Company with respect to any awards under the 2013 Plan payable in cash is \$2,500,000.

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 2013 Plan) on any award, including (i) accelerating or extending the time periods for exercising, vesting in, or realizing gain from any award, (ii) eliminating or modifying the performance or other conditions of an award, (iii) providing for the cash settlement of an award for an equivalent cash value, as determined by the Compensation Committee, or (iv) such other modification or adjustment to an award as the Compensation Committee deems appropriate to maintain and protect the rights and interests of participants upon or following a change in control. The Compensation Committee may, in its discretion and without the need for the consent of any recipient of an award, also take one or more of the following actions contingent upon the occurrence of a change in control: (a) cause any or all outstanding options and stock appreciation rights 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 stock appreciation right in exchange for a substitute option; (d) cancel any award of restricted stock, stock units, performance shares or performance units in exchange for a similar award of the capital stock of any successor corporation; (e) redeem any restricted stock, stock unit, performance share or performance unit 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) cancel any option or stock appreciation right in exchange for cash and/or other substitute consideration based on the value of our common stock on the date of the change in control, and cancel any option or stock appreciation right without any payment if its exercise price exceeds the value of our common stock on the date of the change in control; (g) cancel any stock unit or performance unit held by a participant affected by the change in control in exchange for cash and/or other substitute consideration with a value equal to the fair market value per share of common stock on the date of the change in control, or (h) make such other modifications, adjustments or amendments to outstanding awards as the Compensation Committee deems necessary or appropriate.

Amendment, Termination. The Compensation Committee may amend the terms of awards in any manner not inconsistent with the 2013 Plan, provided that no amendment shall adversely affect the rights of a participant with respect to an outstanding award without the participant's consent. In addition, our board of directors may at any time amend, suspend, or terminate the 2013 Plan, provided that (i) no such amendment, suspension or termination shall materially and adversely affect the rights of any participant under any outstanding award without the consent of such participant and (ii) to the extent necessary and desirable to comply with any applicable law, regulation, or stock exchange rule, the 2013 Plan requires us to obtain stockholder consent. Stockholder approval is required for any plan amendment that increases the number of shares of common stock available for issuance under the 2013 Plan or changes the persons or classes of persons eligible to receive awards.

Tax Withholding

The Company has the power and 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 regulations to be withheld.

Director Compensation

In October 2013, we adopted a compensation policy pursuant to which our non-employee directors receive annualized compensation of \$20,000 per year, with an additional \$10,000 per year for the Chairman of the Board and the Chair of the Audit Committee, as well as an additional \$5,000 per year for the Chairs of the Compensation and Nomination & Governance Committees. In addition, our independent board members will receive an option grant of 150,000 options, with the exception of the Chairman of the Board, who will be granted 200,000 options. In August 2014, we revised our compensation policy to provide that directors will receive restricted stock in lieu of cash fees.

On February 21, 2017, non-employee directors were awarded stock awards as compensation for 2017. The dollar amounts were \$65,000 for H. Conrad, \$56,250 for S. Ferrari, \$58,750 for J. Scibetta and \$35,000 for A. Stern. These stock awards vest on a quarterly basis based on service during 2017.

Director Compensation Table – 2017

The following table summarizes the annual compensation for our non-employee directors during 2017.

Name	Stock Awards (\$) ⁽¹⁾	Option Awards (\$) ⁽¹⁾	Total (\$)
Herbert Conrad	65,000	117,530	182,530
Eric Ende	35,627	602,821	638,448
Stefano Ferrari ⁽²⁾	56,250	88,148	144,398
James S. Scibetta	58,750	88,148	146,898
Adam Stern	35,000	88,148	123,148

(1) Amounts reflect the grant date fair value of stock awards and option awards granted in 2017 in accordance with Accounting Standards Codification Topic 718. These amounts do not correspond to the actual value that will be recognized by the directors.

(2) Mr. Ferrari resigned as a member of our board of directors effective December 31, 2017.

In 2018, we amended our compensation policy pursuant for our non-employee directors. The amended policy provides for the following compensation amounts payable in cash, or upon election by such non-employee director, in shares of unrestricted common stock: (i) each non-employee director, other than the chairman of the board is entitled to receive an annual fee of \$50,000, (ii) the chairman of the board is entitled to receive an additional annual fee of \$25,000, (iii) the vice chairman of the board is entitled to receive an additional annual fee of \$20,000, (iv) the chair of our audit committee is entitled to receive an annual fee from us of \$15,000 and other members of our audit committee are entitled to receive \$7,500; (v) the chair of our compensation committee is entitled to receive an annual fee from us of \$12,000 and other members of our compensation committee are entitled to receive \$6,000; and (vi) the chair of our nominating and corporate governance committee is entitled to receive an annual fee from us of \$7,500 and other members are entitled to receive \$4,000 and (vii) the chair of the scientific advisory committee is entitled to receive an annual fee of \$7,500 for the chair and other members are entitled to receive \$4,000.

As of the date of each annual meeting of the shareholders, each non-employee director will receive an option grant to purchase of our common stock valued at \$80,000 as determined by the Black Scholes method on the date of grant under our existing equity incentive plan, or any other equity incentive plan we may adopt in the future, which shall vest in twelve equal monthly installments.

All fees under the director compensation policy are paid on a quarterly basis in arrears and no per meeting fees are paid. All fees may be paid in unrestricted shares of common stock at the election of the director. We also reimburse non-employee directors for reasonable expenses incurred in connection with attending board of director and committee meetings.

Compensation Committee Interlocks and Insider Participation

The Compensation Committee of the Board of Directors is currently composed of the following four non-employee directors: Eric Ende, Chair, Herbert J. Conrad, James Scibetta and Matthew Wikler. During the year ended December 31, 2017, the Compensation Committee was composed of the following four non-employee directors: Stefano Ferrari, Chair, Herbert J. Conrad, Eric Ende and James Scibetta. 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. In addition, Messrs. Conrad, Ferrari and Scibetta participated in the Company's warrant tender offer during fiscal 2017. See "Certain Relationships and Related Party Transactions – Warrant Tender Offer" for additional information.

REPORT OF THE AUDIT COMMITTEE*

The undersigned members of the Audit Committee of the Board of Directors of Matinas BioPharma Holdings, Inc. (the “Company”) submit this report in connection with the committee’s review of the financial reports for the fiscal year ended December 31, 2017 as follows:

1. The Audit Committee has reviewed and discussed with management the audited financial statements for the Company for the fiscal year ended December 31, 2017.
2. The Audit Committee has discussed with representatives of EisnerAmper LLP, the independent public accounting firm, the matters which are required to be discussed with them under the provisions of Auditing Standard No. 1301, *Communications with Audit Committees*.
3. The Audit Committee has discussed with EisnerAmper LLP, the independent public accounting firm, the auditors’ independence from management and the Company has received the written disclosures and the letter from the independent auditors required by applicable requirements of the Public Company Accounting Oversight Board.

In addition, the Audit Committee considered whether the provision of non-audit services by EisnerAmper LLP is compatible with maintaining its independence. In reliance on the reviews and discussions referred to above, the Audit Committee recommended to the Board of Directors (and the Board of Directors has approved) that the audited financial statements be included in the Company’s Annual Report on Form 10-K for the fiscal year ended December 31, 2017 for filing with the Securities and Exchange Commission.

Audit Committee,

James Scibetta, Chairman
Herbert Conrad
Eric Ende

- * The foregoing report of the Audit Committee is not to be deemed “soliciting material” or deemed to be “filed” with the Securities and Exchange Commission (irrespective of any general incorporation language in any document filed with the Securities and Exchange Commission) or subject to Regulation 14A of the Securities Exchange Act of 1934, as amended, or to the liabilities of Section 18 of the Securities Exchange Act of 1934, except to the extent we specifically incorporate it by reference into a document filed with the Securities and Exchange Commission.

Security Ownership of Certain Beneficial Owners and Management

The following table sets forth the number of shares of common stock beneficially owned as of September 12, 2018 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 Commission. 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 voting power of 109,314,971 shares, consisting of 94,636,391 shares of common stock outstanding as of September 12, 2018 and 14,687,580 shares of common stock issuable upon conversion of the shares of Series A Preferred Stock outstanding as of September 12, 2018. 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, September 12, 2018. 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
5% Stockholders		
Jennifer Lorenzo ⁽¹⁾	8,428,576	7.6%
Directors and Named Executive Officers:		
Jerome D. Jabbour ⁽²⁾	1,838,855	1.7%
Herbert Conrad ⁽³⁾	5,007,590	4.5%
Patrick LePore ⁽⁴⁾	12,500	*
Eric Ende ⁽⁵⁾	216,076	*
James Scibetta ⁽⁶⁾	956,018	*
Adam Stern ⁽⁷⁾	9,101,985	8.2%
Matthew Wikler ⁽⁸⁾	104,348	*
Raphael Mannino ⁽⁹⁾	1,922,483	1.8%
Roelof Rongen ⁽¹⁰⁾	5,179,000	4.7%
Dominick DiPaolo ⁽¹¹⁾	—	—
Directors and Executive Officers as a group (8 persons) ⁽¹²⁾	19,159,855	16.6%

* Less than 1%

- (1) Based on information contained in a Schedule 13G filed on July 3, 2017 and on the Company's books and records. Includes (i) 4,900,000 shares of common stock underlying shares of Series A Preferred Stock held by GJG Life Sciences, LLC and (ii) 1,442,000 shares of common stock underlying shares of Series B Preferred Stock held by GJG Life Sciences, LLC. GJG Capital, LLC is the Managing Member of GJG Life Sciences, LLC, a limited liability company. Ms. Lorenzo is the Managing Member of GJG Capital, LLC and, as a result, Ms. Lorenzo and GJG Capital, LLC may be deemed to be indirect beneficial owners. The address for reporting persons is c/o GJG Capital, LLC 107 Circle Road, Staten Island, NY 10304.
- (2) Includes (i) 30,000 shares of common stock issuable upon conversion of Series B Preferred Stock and (ii) 1,429,168 shares of common stock issuable upon exercise of options that are exercisable within sixty days of September 12, 2018. Does not include 1,195,832 shares of common stock underlying options that are not exercisable within sixty days of September 12, 2018. Of the total 2,625,000 vested and unvested stock options held by Mr. Jabbour, Mr. Jabbour disclaims beneficial ownership of 612,500 shares of common stock underlying certain vested and unvested stock options for which Mr. Jabbour transferred the economic benefits from the exercise of such options to his ex-wife pursuant to a domestic relations order.
- (3) Includes (i) 200,000 shares of common stock issuable upon conversion of Series B Preferred Stock; (ii) 200,000 shares of common stock issuable upon conversion of Series A Preferred Stock and (iii) 641,111 shares of common stock issuable upon exercise of options that are exercisable within sixty days of September 12, 2018. Does not include 22,222 shares of common stock underlying options that are not exercisable within sixty days of September 12, 2018.
- (4) Includes 12,500 shares of common stock issuable upon exercise of options that are exercisable within sixty days of September 12, 2018. Does not include 137,500 shares of common stock underlying options that are not exercisable within sixty days of September 12, 2018.
- (5) Includes (i) 24,000 shares of common stock issuable upon conversion of Series B Preferred Stock and (ii) 159,722 shares of common stock issuable upon exercise of options that are exercisable within sixty days of September 12, 2018. Does not include 240,278 shares of common stock underlying options that are not exercisable within sixty days of September 12, 2018.
- (6) Includes (i) 24,000 shares of common stock issuable upon conversion of Series B Preferred Stock and (ii) 445,834 shares of common stock issuable upon exercise of options that are exercisable within sixty days of September 12, 2018. Does not include 16,666 shares of common stock underlying options that are not exercisable within sixty days of September 12, 2018.
- (7) Includes (i) 1,702,676 shares of common stock issuable upon exercise of outstanding Warrants that are exercisable within sixty days of September 12, 2018, (ii) 445,834 shares of common stock issuable upon exercise of options that are exercisable within sixty days of September 12, 2018, (iii) 200,000 shares of common stock issuable upon conversion of Series A Preferred Stock, (iv) 300,000 shares of common stock that are owned by Pavilion Capital Partners, LLC, which is wholly-owned by Mr. Stern, (v) 300,000 shares of common stock that are owned by Piper Ventures Partners, LLC, which is wholly-owned by Mr. Stern, (vi) 6,000,000 shares of common stock that are owned by SternAegis Ventures LLC, which is wholly-owned by Mr. Stern, (vii) 1,000,000 shares held by AKS Family Foundation, (viii) 3,639,483 shares of common stock held by AKS Family Partners and (ix) 170,000 shares of common stock underlying Series B Preferred Stock held by AKS Family Partners. Does not include (i) 16,666 shares of common stock underlying options that are not exercisable within sixty days of September 12, 2018 and (ii) 50,000 shares of common stock underlying warrants that are not exercisable within sixty days of September 12, 2018.
- (8) Includes (i) 12,000 shares of common stock issuable upon conversion of Series B Preferred Stock and (ii) 41,667 shares of common stock issuable upon exercise of options that are exercisable within sixty days of September 12, 2018. Does not include 208,333 shares of common stock underlying options that are not exercisable within sixty days of September 12, 2018.

- (9) Includes (i) 20,000 shares of common stock issuable upon conversion of Series B Preferred Stock and (ii) 477,918 shares of common stock issuable upon exercise of options that are exercisable within sixty days of September 12, 2018. Does not include 207,082 shares of common stock underlying options that are not exercisable within sixty days of September 12, 2018.
- (10) Includes 1,639,584 shares of common stock issuable upon exercise of options that are exercisable within 60 days of September 12, 2018. Mr. Rongen stepped down as chief executive officer and a director in the first quarter of 2018.
- (11) Mr. DiPaolo's employment was terminated during the second quarter of 2018.
- (12) See notes (2) through (9).

Securities Authorized for Issuance Under Equity Compensation Plans

The following table provides information with respect to our compensation plans under which equity compensation was authorized as of December 31, 2017.

Plan category	Number of securities to be issued upon exercise of outstanding options, warrants and rights (a)	Weighted average exercise price of outstanding options, warrants and rights (b)	Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column a) (c) ⁽²⁾
Equity compensation plans approved by security holders ⁽¹⁾	11,395,569	\$ 1.40	1,528,063

- (1) The amounts shown in this row include securities under the Matinas BioPharma Holdings, Inc. Amended and Restated 2013 Equity Incentive Plan (the "2013 Plan").
- (2) In accordance with the "evergreen" provision in our 2013 Plan, an additional 3,734,846 shares were automatically made available for issuance on the first trading day of 2018, which represents 4% of the number of shares outstanding on December 31, 2017; these shares are excluded from this calculation.

Section 16(a) Beneficial Ownership Reporting Compliance

Section 16(a) of the Securities Exchange Act of 1934, as amended, requires our directors and executive officers, and persons who are beneficial owners of more than 10% of a registered class of our equity securities, to file reports of ownership and changes in ownership with the Securities and Exchange Commission (the "SEC"). These persons are required by SEC regulations to furnish us with copies of all Section 16(a) forms they file. To our knowledge, based solely on a review of the copies of such reports furnished to us and written representations that no other reports were required during the fiscal year ended December 31, 2017, all reports required to be filed under Section 16(a) were filed on a timely basis, except as set forth below.

In connection with his appointment to the board of directors and grant of an equity award, Eric Ende had a Form 3 and Form 4 filing due on April 5, 2017. Such Form 3 and Form 4 were filed on April 21, 2017. A form 4 for an option grant should have been filed on December 18, 2017. Such Form 4 was filed on February 27, 2018.

In connection with his appointment as an officer and grant of an equity award, Dominick M. DiPaolo had a Form 3 and Form 4 filing due on April 12, 2017. Such Form 3 and Form 4 were filed on April 21, 2017.

In connection with an open market purchase, Raphael Mannino had a Form 4 filing due on September 13, 2017. Such Form 4 was filed on September 15, 2017.

Certain Relationships and Related Party Transactions

Other than compensation arrangements for our named executive officers and directors, we describe below each transaction or series of similar transactions, since January 1, 2017, to which we were a party or will be a party, in which:

- the amounts involved exceeded or will exceed \$120,000; 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.

Warrant Tender Offer

In January 2017, we completed a warrant tender offer. We had filed a Schedule TO pursuant to which it offered, or the Offer to Amend and Exercise to amend certain outstanding warrants, or the Original Warrants to purchase an aggregate of 36,728,612 shares of common stock to: (i) reduce the exercise price of the Original Warrants to \$0.50 per share of common stock in cash, (ii) shorten the exercise period of the Original Warrants so that they expire concurrently with the expiration of the Offer to Amend and Exercise at 5:00 p.m. (Eastern Time) on January 13, 2017, as may be extended by the Company in its sole discretion, or the Expiration Date, (iii) restrict the ability of the holder of shares issuable upon exercise of the Amended Warrants to sell, make any short sale of, loan, grant any option for the purchase of, or otherwise dispose of any of such shares without the prior written consent of the Company for a period of six months after the Expiration Date, or the Lock-Up Period; and (iv) provide that a holder, acting alone or with others, will agree not to effect any purchases or sales of any securities of the Company in any “short sales” as defined in Rule 200 promulgated under Regulation SHO under the Securities Exchange Act of 1934, as amended, or any type of direct and indirect stock pledges, forward sale contracts, options, puts, calls, short sales, swaps, “put equivalent positions” (as defined in Rule 16a-1(h) under the Exchange Act) or similar arrangements, or sales or other transactions through non-U.S. broker dealers or foreign regulated brokers through the expiration of the Lock-Up Period.

The Offer to Amend and Exercise expired at 5:00 p.m. Eastern Time on January 13, 2017. Pursuant to the Offer to Amend and Exercise, an aggregate of 30,966,350 Original Warrants were tendered by their holders and were amended and exercised in connection therewith for an aggregate exercise price of approximately \$15.5 million, including the following: 3,750,000 Formation Warrants; 754,000 Merger Warrants; 7,243,750 2013 Investor Warrants; 500,000 Private Placement Warrants; 14,750,831 2015 Investor Warrants; 722,925 \$2.00 PA Warrants (of which 721,987 were exercised on a cashless basis); 1,426,687 \$1.00 PA Warrants (of which 1,424,812 were exercised on a cashless basis); and 1,818,157 \$0.75 PA Warrants (of which 1,774,017 were exercised on a cashless basis). The gross cash proceeds from such exercises were approximately \$13.5 million and the net cash proceeds after deducting warrant solicitation agent fees and other estimated offering expenses were approximately \$12.7 million. Prior to the Offer to Amend and Exercise, the Company had 58,159,495 shares of common stock outstanding and warrants to purchase an aggregate of 40,255,234 shares of common stock. Following the Offer to Amend and Exercise, the Company had 87,310,154 shares of common stock outstanding and warrants to purchase an aggregate of 9,288,884 shares of common stock.

Certain of our officers, directors and holders of more than 5% of our capital stock participated in the Offer to Amend and Exercise as set forth below.

<u>Name</u>	<u>Number of Shares Purchased in Offer to Amend and Exercise</u>	<u>Aggregate Purchase Price Paid</u>
GJG Life Sciences, LLC	3,516,711	\$ 1,758,356
Roelof Rongen	50,000	25,000
Herbert Conrad	1,875,000	937,500
Adam Stern and affiliated entities	4,216,492 ⁽¹⁾	1,025,000
Stefano Ferrari	4,000	2,000
James Scibetta	100,000	50,000
Gary Gaglione	20,000	10,000
Douglas Kling	40,000	20,000

(1) Includes 2,166,492 placement agent warrants which were exercised on a “cashless basis”.

We retained Aegis Capital Corp. to act as its Warrant Agent for the Offer to Amend and Exercise pursuant to a Warrant Agent Agreement. Aegis Capital received a fee equal to 5% of the cash exercise prices paid by holders of the Original Warrants (excluding the placement agent warrants) who participated in the Offer to Amend and Exercise. In addition, we agreed to reimburse Aegis Capital for its reasonable out-of-pocket expenses and attorney’s fees, including a \$35,000 non-accountable expense allowance.

Series B Preferred Stock Offering

In the second quarter of 2018, we completed a public offering, pursuant to which we sold 8,000 of our Series B Convertible Preferred Stock at a purchase price of \$1,000 per share for gross proceeds to us of \$8.0 million. Such shares of Series B Preferred Stock are convertible into an aggregate of up to 16,000,000 shares of our common stock at an initial conversion price of \$0.50 per share of common stock and, subject to certain holding requirements, may receive up to an additional up to 7,200,000 shares of common stock as dividend payments.

Certain of our officers, directors and holders of more than 5% of our capital stock purchased shares of Series B Preferred Stock in the offering as set forth below.

Name	Number of Series B Preferred Shares Purchased	Aggregate Purchase Price Paid
GJG Life Sciences, LLC	721	\$ 721,000
Jerome D. Jabbour	15	\$ 15,000
Herbert Conrad	100	\$ 100,000
Eric Ende	12	\$ 12,000
James Scibetta	12	\$ 12,000
Adam Stern and affiliated entities	85	\$ 85,000
Matthew Wikler	6	\$ 6,000
Raphael Mannino	10	\$ 10,000

In connection with the Series B Preferred Stock offering, we entered into a Placement Agency Agreement with ThinkEquity, a Division of Fordham Financial Management, Inc., as placement agent and Aegis Capital Corp. acted as a selected dealer. As of the date of the Placement Agency Agreement, an affiliate of ThinkEquity beneficially owned 10,000 shares of Series A Preferred Stock, 314 warrants to purchase shares of our common stock and 839,538 shares of common stock, constituting aggregate beneficial ownership of approximately of 0.90% of our outstanding common stock. As of the date of the Placement Agency Agreement, affiliates of Aegis Capital Corp., which acted as a selected dealer in the offering, owned an aggregate of approximately 7.5% of our outstanding common stock and on a beneficial ownership basis, inclusive of their Series A Preferred Stock, warrants and options, approximately 11.5% of our common stock. Adam K. Stern, one of our directors, is an affiliate of Aegis Capital Corp.

Pursuant to the Placement Agency Agreement, the placement agent and selected dealer received the following compensation: (i) a total cash fee equal to 7.0% of the public offering price for the Series B Preferred Stock, (ii) a non-accountable expense allowance equal to 1.0% of the gross proceeds raised in the offering, and (iii) reimbursements for legal fees and expense in the amount of up to \$75,000. In addition, we issue to the placement agent and the selected dealer warrants to purchase an aggregate of 240,000 shares of our common stock, which will be exercisable at any time and from time to time, in whole or in part, during the four-year period commencing June 19, 2019, at a price per share equal to \$0.75. The placement agent warrants provide for registration rights (including a one-time demand registration right and unlimited piggyback rights), a cashless exercise option, customary anti-dilution provisions (for stock dividends and splits and recapitalizations) consistent with FINRA Rule 5110, and further, the number of shares underlying the placement agent warrants shall be reduced if necessary to comply with FINRA rules or regulations.

Indemnification Agreements

We entered into indemnification agreements with our directors and executive officers. The indemnification agreements provide for indemnification against expenses, judgments, fines and penalties actually and reasonably incurred by an indemnitee in connection with threatened, pending or completed actions, suits or other proceedings, subject to certain limitations. The indemnification agreements also provide for the advancement of expenses in connection with a proceeding prior to a final, nonappealable judgment or other adjudication, provided that the indemnitee provides an undertaking to repay to us any amounts advanced if the indemnitee is ultimately found not to be entitled to indemnification by us. The indemnification agreement set forth procedures for making and responding to a request for indemnification or advancement of expenses, as well as dispute resolution procedures that apply to any dispute between us and an indemnitee arising under the Indemnification Agreements.

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 2: RATIFY THE APPOINTMENT OF EISNERAMPER LLP AS OUR INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM FOR THE YEAR ENDING DECEMBER 31, 2018

The Audit Committee has reappointed EisnerAmper LLP as our independent registered public accounting firm to audit the financial statements of the Company for the fiscal year ending December 31, 2018, and has further directed that management submit their selection of independent registered public accounting firm for ratification by our stockholders at the Annual Meeting. Neither the accounting firm nor any of its members has any direct or indirect financial interest in or any connection with us in any capacity other than as public registered accounting firm.

Principal Accountant Fees and Services

The following table represents aggregate fees billed to the Company for the fiscal years ended December 31, 2017 and December 31, 2016, by EisnerAmper LLP, the Company's independent registered public accounting firm.

	Year Ended December 31,	
	2017	2016
	(in thousands)	
Audit Fees	\$ 182	\$ 120
Tax Fees	—	8
Total Fees	<u>\$ 182</u>	<u>\$ 128</u>

Audit Fees consist of fees for professional services and expenses relating to the audit of our annual financial statements, the audit of our internal control over financial reporting and the review of our quarterly financial information.

Tax Fees are for tax-related services related primarily to tax consulting and tax planning.

The Audit Committee pre-approves all auditing services and any non-audit services that the independent registered public accounting firm is permitted to render under Section 10A (h) of the Exchange Act. The Audit Committee may delegate the pre-approval to one of its members, provided that if such delegation is made, the full Audit Committee must be presented at its next regularly scheduled meeting with any pre-approval decision made by that member.

The Audit Committee has considered whether the provision of Tax Fees as described above is compatible with maintaining EisnerAmper, LLP's independence and has determined that such services for fiscal year 2016 were compatible. All such services were approved by the Audit Committee pursuant to Rule 2-01 of Regulation S-X under the Exchange Act to the extent that rule was applicable.

The Audit Committee is responsible for reviewing and discussing the audit financial statements with management, discussing with the independent registered public accountants the matters required in Auditing Standard No. 1301, receiving written disclosures from the independent registered public accountants required by the applicable requirements of the Public Company Accounting Oversight Board regarding the independent registered public accountants' communications with the Audit Committee concerning independence and discussing with the independent registered public accountants their independence, and recommending to the Board of Directors that the audit financial statements be included in our annual report on Form 10-K.

Attendance at Annual Meeting

Representatives of EisnerAmper LLP are expected to be present at the Annual Meeting and available to respond to appropriate questions from stockholders.

Vote Required

The affirmative vote of a majority of the total votes cast in person or by proxy is required to approve this proposal. As a result, abstentions and broker non-votes, if any, will not affect the outcome of the vote on these proposals.

**THE BOARD OF DIRECTORS RECOMMENDS THAT THE STOCKHOLDERS VOTE FOR THE
RATIFICATION OF THE INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM.**

STOCKHOLDER PROPOSALS

Stockholder Proposals for 2019 Annual Meeting

Any stockholder proposals submitted for inclusion in the Company's proxy statement and form of proxy for our 2019 Annual Meeting of Stockholders must be received by the Company no later than May 27, 2019 in order to be considered for inclusion in our proxy statement and form of proxy. Such proposal 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. Any such proposal shall be mailed to: Matinas BioPharma Holdings, Inc., 1545 Route 206 South, Suite 302, Bedminster, New Jersey 07921 Attn.: Secretary.

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. For our 2019 Annual Meeting of Stockholders, a stockholder's notice shall be timely received by the Company at our principal executive office no later than August 2, 2019 no earlier than July 3, 2019; 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. 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.: Corporate Secretary.

ANNUAL REPORT

Copies of our Annual Report on Form 10-K (including audited financial statements), as amended, 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.: Corporate 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 and/or Series A Preferred Stock on September 12, 2018. 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, 2017 and certain other related financial and business information are contained in our 2017 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) 443-1860. 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

September 24, 2018
Bedminster, New Jersey

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

Investor Address Line 1
Investor Address Line 2
Investor Address Line 3
Investor Address Line 4
Investor Address Line 5
John Sample
1234 ANYWHERE STREET
ANY CITY, ON A1A 1A1

VOTE BY INTERNET - www.proxyvote.com
Use the Internet to transmit your voting instructions and for electronic delivery of information up until 11:59 P.M. Eastern Time the day before the cut-off date or meeting date. Have your proxy card in hand when you access the web site and follow the instructions to obtain your records and to create an electronic voting instruction form.

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

VOTE BY PHONE - 1-800-690-6903
Use any touch-tone telephone to transmit your voting instructions up until 11:59 P.M. Eastern Time the day before the cut-off date or meeting date. 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.

1 OF 2
1 1 2

NAME

THE COMPANY NAME INC. - COMMON
THE COMPANY NAME INC. - CLASS A
THE COMPANY NAME INC. - CLASS B
THE COMPANY NAME INC. - CLASS C
THE COMPANY NAME INC. - CLASS D
THE COMPANY NAME INC. - CLASS E
THE COMPANY NAME INC. - CLASS F
THE COMPANY NAME INC. - 401 K

CONTROL # → 0000000000000000

SHARES

123,456,789,012.12345
123,456,789,012.12345
123,456,789,012.12345
123,456,789,012.12345
123,456,789,012.12345
123,456,789,012.12345
123,456,789,012.12345
123,456,789,012.12345

PAGE 1 OF 2

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.

The Board of Directors recommends you vote FOR the following:

For All Withhold All For All Except

To withhold authority to vote for any individual nominee(s), mark "For All Except" and write the number(s) of the nominee(s) on the line below.

1. Election of Directors

Nominees

01 Herbert Conrad 02 Patrick Lepore 03 Jerome Jabbour 04 Eric Ende 05 James Scibetta
06 Adam Stern 07 Matthew Wikler

The Board of Directors recommends you vote FOR the following proposal:

2. To ratify the appointment of EisnerAmper LLP as our independent registered public accounting firm for the year ending December 31, 2018 For Against Abstain

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.

Investor Address Line 1
Investor Address Line 2
Investor Address Line 3
Investor Address Line 4
Investor Address Line 5
John Sample
1234 ANYWHERE STREET
ANY CITY, ON A1A 1A1

Signature [PLEASE SIGN WITHIN BOX] Date JOB # Signature (Joint Owners) Date SHARES CUSIP # SEQUENCE #

0000388548_1 R11.0.1.17

02 0000000000



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



**MATINAS BIOPHARMA HOLDINGS INC.
Annual Meeting of Stockholders
November 1, 2018 9:00 AM
This proxy is solicited by the Board of Directors**

The stockholder hereby appoints Jerome Jabbour and Raphael Mannino, 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 09:00 AM, EDT on November 1, 2018, at the offices of Lowenstein Sandler LLP, located at One Lowenstein Drive, Roseland, NJ 07068, 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.

0000388548_2 R11.0.1.17

Continued and to be signed on reverse side

