

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

SCHEDULE 14A

Proxy Statement Pursuant to Section 14(a) of
the Securities Exchange Act of 1934 (Amendment No.)

Filed by the Registrant

Filed by a Party other than the Registrant

Check the appropriate box:

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

Moleculin Biotech, Inc.

(Name of Registrant as Specified In Its Charter)

(Name of Person(s) Filing Proxy Statement, if other than the Registrant)

Payment of Filing Fee (Check the appropriate box):

No fee required.

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

- (1) Title of each class of securities to which transaction applies: _____
- (2) Aggregate number of securities to which transaction applies: _____
- (3) Per unit price or other underlying value of transaction computed pursuant to Exchange Act Rule 0-11 (set forth the amount on which the filing fee is calculated and state how it was determined): _____
- (4) Proposed maximum aggregate value of transaction: _____
- (5) Total fee paid: _____

Fee paid previously with preliminary materials.

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

- (1) Amount Previously Paid: _____
- (2) Form, Schedule or Registration Statement No.: _____
- (3) Filing Party: _____
- (4) Date Filed: _____

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Moleculin Biotech, Inc.
5300 Memorial Drive, Suite 950
Houston, TX 77007
(713) 300-5160

To the Stockholders of Moleculin Biotech, Inc.:

You are cordially invited to attend the Annual Meeting of Stockholders of Moleculin Biotech, Inc. on May 26, 2021. The Annual Meeting will begin at 1:30 p.m. local time at the corporate offices of Moleculin Biotech, Inc., 5300 Memorial Drive, Suite 950, Houston, TX 77007.

Information regarding each of the matters to be voted on at the Annual Meeting is contained in the attached Proxy Statement and Notice of Annual Meeting of Stockholders. We urge you to read the proxy statement carefully. The proxy statement and proxy card are being mailed to all stockholders of record as of March 29, 2021.

Because it is important that your shares be voted at the Annual Meeting, we urge you to complete, date and sign the enclosed proxy card and return it as promptly as possible in the accompanying envelope, whether or not you plan to attend in person. Even after returning your proxy, if you are a stockholder of record and do attend the meeting and wish to vote your shares in person, you still may do so.

We look forward to seeing you on May 26, 2021.

We intend to hold our Annual Meeting in person and we look forward to seeing you on May 26, 2021. However, due to the uncertainties surrounding the impact of the coronavirus (COVID-19), it may not be possible or advisable to hold our Annual Meeting in person and we are planning for the possibility that the Annual Meeting may be held by means of remote communication. If we decide to take such step, we will announce the decision to do so in advance of the Annual Meeting. If we elect to hold our Annual Meeting by remote communication, details on how to participate will be issued by press release, posted on our website at <http://ir.moleculin.com> and filed with the U.S. Securities and Exchange Commission as additional proxy material.

Very truly yours,

MOLECULIN BIOTECH, INC.

By: /s/ Walter V. Klemp
Walter V. Klemp
Chairman of the Board and Chief Executive Officer

**Important Notice Regarding the Availability of Proxy Materials
for the Annual Shareholder Meeting to be Held on May 26, 2021:**
Electronic Copies of the Proxy Statement and our 2020 Annual Report on Form 10-K are available at
<https://materials.proxyvote.com/60855D>

Moleculin Biotech, Inc.
5300 Memorial Drive, Suite 950
Houston, TX 77007
(713) 300-5160

NOTICE OF ANNUAL MEETING OF STOCKHOLDERS

To Be Held May 26, 2021

TO THE STOCKHOLDERS OF MOLECULIN BIOTECH, INC.:

NOTICE IS HEREBY GIVEN that the 2021 Annual Meeting of Stockholders of Moleculin Biotech, Inc. (the "Company") will be held at the corporate offices at 5300 Memorial Drive, Suite 950, Houston, TX 77007, on May 26, 2021 at 1:30 p.m., local time, for the following purposes, as described in the accompanying Proxy Statement:

1. To elect five Board nominees to the Board of Directors of the Company, each to serve until the 2022 annual meeting of stockholders of the Company or until such person's successor is qualified and elected.
2. To ratify the appointment of Grant Thornton, LLP as the Company's independent registered public accounting firm for the year ending December 31, 2021.
3. To transact any other business that is properly brought before the Annual Meeting or any adjournment or postponement thereof.

Only stockholders of record of the Company at the close of business on March 29, 2021 are entitled to notice of and to vote at the Annual Meeting or any adjournment or postponement thereof. A complete list of these stockholders will be open for the examination of any stockholder of record at the Company's principal executive offices located at 5300 Memorial Drive, Suite 950, Houston, TX 77007 for a period of ten days prior to the Annual Meeting. The list will also be available for the examination of any stockholder of record present at the Annual Meeting. The Annual Meeting may be adjourned or postponed from time to time without notice other than by announcement at the meeting.

The Company intends to hold the Annual Meeting in person. However, due to the uncertainties surrounding the impact of the coronavirus (COVID-19), it may not be possible or advisable to hold the Annual Meeting in person and the Company is planning for the possibility that the Annual Meeting may be held by means of remote communication. If the Company decides to take such step, it will announce the decision to do so in advance of the Annual Meeting. If the Company elects to hold the Annual Meeting by remote communication, details on how to participate will be issued by press release, posted on the Company's website at <http://ir.moleculin.com> and filed with the U.S. Securities and Exchange Commission as additional proxy material.

WHETHER OR NOT YOU PLAN TO ATTEND THE MEETING, PLEASE SIGN AND DATE THE ENCLOSED PROXY AND RETURN IT IN THE ENVELOPE PROVIDED.

By Order of the Board of Directors,

MOLECULIN BIOTECH, INC.

/s/ Walter V. Klemm

Walter V. Klemm

Chairman of the Board and Chief Executive Officer

Houston, Texas
April 1, 2021

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MOLECULIN BIOTECH, INC.
PROXY STATEMENT
FOR
ANNUAL MEETING OF STOCKHOLDERS
To Be Held May 26, 2021

INFORMATION ABOUT THE ANNUAL MEETING AND VOTING

WHY DID YOU SEND ME THIS PROXY STATEMENT?

This proxy statement and the enclosed proxy card are furnished in connection with the solicitation of proxies by the Board of Directors of Moleculin Biotech, Inc., a Delaware corporation, for use at the Annual Meeting of Moleculin Biotech Inc.'s stockholders to be held at the 5300 Memorial Drive, Suite 950, Houston, TX 77007, on May 26, 2021 at 1:30 p.m., local time, and at any adjournments or postponements of the Annual Meeting. This proxy statement summarizes the information you need to make an informed vote on the proposals to be considered at the Annual Meeting. However, you do not need to attend the Annual Meeting to vote your shares. Instead, you may simply complete, sign and return the enclosed proxy card using the envelope provided. The terms "Moleculin," "Company," "we," or "our" refer to Moleculin Biotech, Inc.

On January 29, 2021, pursuant to authority granted by our stockholders, our board of directors approved a one-for-six reverse stock split of our common stock and the filing of an amendment to our amended and restated certificate of incorporation to effectuate the reverse stock split. The amendment was filed with the Secretary of State of the State of Delaware and the reverse stock split became effective in accordance with the terms of the amendment at 5:00 p.m. Eastern Time on January 29, 2021 (the "Effective Time"). The amendment provides that, at the Effective Time, every six shares of our issued and outstanding common stock will automatically be combined into one issued and outstanding share of common stock, without any change in par value per share, which will remain \$0.001. This proxy statement gives retroactive effect to the reverse stock split for all periods presented.

WHAT PROPOSALS WILL BE ADDRESSED AT THE ANNUAL MEETING?

We will address the following proposals at the Annual Meeting:

1. To elect five Board nominees to the Board of Directors of the Company, each to serve until the 2022 annual meeting of stockholders of the Company or until such person's successor is qualified and elected.
2. To ratify the appointment of Grant Thornton, LLP as the Company's independent registered public accounting firm for the year ending December 31, 2021.
3. To transact any other business that is properly brought before the Annual Meeting or any adjournment or postponement thereof.

WHO MAY VOTE ON THESE PROPOSALS?

We will send this proxy statement, the attached Notice of Annual Meeting and the enclosed proxy card on or about April 1, 2021 to all stockholders as of March 29, 2021 (the "Record Date"). Stockholders who owned shares of our common stock at the close of business on the Record Date are entitled to vote at the Annual Meeting on all matters properly brought before the Annual Meeting.

On the Record Date, we had 28,444,425 shares of issued and outstanding common stock entitled to vote at the Annual Meeting.

HOW MANY VOTES DO I HAVE?

Each share of common stock is entitled to one vote on each matter presented at the Annual Meeting. Cumulative voting is not permitted.

WHY WOULD THE ANNUAL MEETING BE POSTPONED?

The Annual Meeting will be postponed if a quorum is not present on May 26, 2021. The presence in person or by proxy of at least a majority of our common stock outstanding as of the Record Date will constitute a quorum and is required to transact business at the Annual Meeting. If a quorum is not present, the Annual Meeting may be adjourned until a quorum is obtained.

Abstentions and broker non-votes are treated as shares present or represented at the meeting, but are not counted as votes cast. Shares held by brokers who do not have discretionary authority to vote on a particular matter and who have not received voting instructions from their customers are not counted or deemed to be present or represented for the purpose of determining whether stockholders have approved that matter, but they are counted as present for the purposes of determining the existence of a quorum at the Annual Meeting.

HOW DO I VOTE BY PROXY?

Whether you plan to attend the Annual Meeting or not, we urge you to complete, sign and date the enclosed proxy card and return it promptly in the envelope provided. Returning the proxy card will not affect your right to attend the Annual Meeting and vote in person.

If you properly fill in your proxy card and send it to us in time to vote, your proxy (one of the individuals named on your proxy card) will vote your shares as you have directed. If you sign the proxy card but do not make specific choices, your proxy will vote your shares as recommended by the Board of Directors (the "Board") as follows:

1. FOR the election of the Board's five nominees to our Board of Directors.
2. FOR ratification of the appointment of Grant Thornton, LLP as our independent registered public accounting firm for the year ending December 31, 2021.
3. In their discretion, upon such other matters as may properly come before the meeting.

If any other matters are presented, your proxy will vote in accordance with his or her best judgment. At the time this proxy statement was printed, we knew of no matters that needed to be acted on at the Annual Meeting other than those discussed in this proxy statement.

HOW DO I VOTE IN PERSON?

If you plan to attend the Annual Meeting and vote in person on May 26, 2021, or at a later date if the meeting is adjourned or postponed, we will give you a ballot when you arrive. However, if your shares are held in the name of your broker, bank or other nominee, you must bring a power of attorney executed by the broker, bank or other nominee that owns the shares of record for your benefit and authorizing you to vote the shares.

MAY I REVOKE MY PROXY?

If you give a proxy, you may revoke it at any time before it is exercised. You may revoke your proxy in three ways:

1. You may send in another proxy with a later date.
2. You may notify us in writing (or if the stockholder is a corporation, under its corporate seal, by an officer or attorney of the corporation) at our principal executive offices before the Annual Meeting that you are revoking your proxy.
3. You may vote in person at the Annual Meeting.

WHAT VOTE IS REQUIRED TO APPROVE EACH PROPOSAL?

Proposal 1: Election of Directors.

A plurality of the eligible votes cast is required to elect director nominees, and as such, the five nominees who receive the greatest number of "For" votes cast by stockholders, entitled to vote at the meeting, will be elected. A nominee who receives a plurality means he or she has received more "For" votes than any other nominee for the same director's seat. Broker non-votes will have no effect on this proposal.

Proposal 2: Ratification of Appointment of Independent Registered Public Accounting Firm.

The approval of Proposal 2 requires the affirmative vote of a majority of the shares present in person or by proxy and entitled to vote on the matter. Broker non-votes will not be taken into account in determining the outcome of the proposal, and abstentions will be counted as votes against the proposal.

Other Business That Is Properly Brought Before the Annual Meeting

If you do not give instructions to your bank or brokerage firm, it will nevertheless be entitled to vote your shares in its discretion on routine matters. However, absent your instructions, the record holder will not be permitted to vote your shares on a non-routine matter, which are referred to as "broker non-votes", properly brought before the meeting. Broker non-votes (shares held by brokers that do not have discretionary authority to vote on the matter and have not received voting instructions from their clients) are not counted or deemed to be present or represented for the purpose of determining whether stockholders have approved that proposal, but will be counted in determining whether there is a quorum present.

ARE THERE ANY RIGHTS OF APPRAISAL?

The Board of Directors is not proposing any action for which the laws of the State of Delaware, our certificate of incorporation or our bylaws provide a right of a stockholder to obtain appraisal of or payment for such stockholder's shares.

WHO BEARS THE COST OF SOLICITING PROXIES?

We will bear the cost of soliciting proxies in the accompanying form and will reimburse brokerage firms and others for expenses involved in forwarding proxy materials to beneficial owners or soliciting their execution.

WHERE ARE MOLECULIN'S PRINCIPAL EXECUTIVE OFFICES?

The principal executive offices of Moleculin are located at 5300 Memorial Drive, Suite 950, Houston, TX 77007 and our telephone number is (713) 300-5160.

HOW CAN I OBTAIN ADDITIONAL INFORMATION ABOUT MOLECULIN?

We are subject to the informational requirements of the Securities Exchange Act of 1934, as amended, which requires that we file reports, proxy statements and other information with the SEC. The SEC maintains a website that contains reports, proxy and information statements and other information regarding companies, including Moleculin, that file electronically with the SEC. The SEC's website address is www.sec.gov. In addition, our filings may be inspected and copied at the public reference facilities of the SEC located at 100 F Street, N.E. Washington, DC 20549.

STOCK OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

The following table sets forth information, as of March 29, 2021, regarding beneficial ownership of our common stock by:

- each of our directors;
- each of our executive officers;
- all directors and executive officers as a group; and
- each person, or group of affiliated persons, known by us to beneficially own more than five percent of our shares of common stock.

Beneficial ownership is determined according to the rules of the SEC, and generally means that person has beneficial ownership of a security if he or she possesses sole or shared voting or investment power of that security and includes options that are currently exercisable or exercisable within 60 days. Each director or officer, as the case may be, has furnished us with information with respect to beneficial ownership. Except as otherwise indicated, we believe that the beneficial owners of common stock listed below, based on the information each of them has given to us, have sole investment and voting power with respect to their shares, except where community property laws may apply. Except as otherwise noted below, the address for each person or entity listed in the table is c/o Moleculin Biotech, Inc., 5300 Memorial Drive, Suite 950, Houston, Texas 77007.

Name of Beneficial Owner	As of March 29, 2021	
	Shares beneficially owned	Percent of Class (1)
Walter V. Klemp	501,664 (2)	1.8 %
Donald Picker	196,090 (3)	Less than 1%
Jonathan P. Foster	124,669 (4)	Less than 1%
Robert George	14,266 (5)	Less than 1%
Michael Cannon	14,099 (6)	Less than 1%
John Climaco	11,599 (6)	Less than 1%
Elizabeth Cermak	-	Less than 1%
Directors and Named Executive Officers as a Group (7 persons)	862,387 (7)	3.0 %

(1) Based on 28,444,425 shares of common stock outstanding as of March 29, 2021.

(2) Includes 238,500 shares held by AnnaMed, Inc. that have been included in the amount for Mr. Klemp. Mr. Klemp has voting and dispositive power over the shares held by AnnaMed, Inc. Includes 107,862 shares underlying options exercisable within 60 days of March 29, 2021.

(3) Of the amount in the table, 105,000 shares held by IntertechBio Corp. have been included in the amounts for Dr. Picker. Dr. Picker shares voting and dispositive power over the shares held by IntertechBio Corp. Includes 17,917 shares underlying options exercisable within 60 days of March 29, 2021.

(4) Includes 123,002 shares underlying options exercisable within 60 days of March 29, 2021.

(5) Includes 14,099 shares underlying options exercisable within 60 days of March 29, 2021.

(6) Consists solely of shares underlying options exercisable within 60 days of March 29, 2021.

(7) Consists of the shares identified in footnotes (2)-(6).

INFORMATION ABOUT DIRECTORS AND EXECUTIVE OFFICERS

Directors and Executive Officers

The following table sets forth the names and ages of all of our directors and executive officers as of March 6, 2021. Our officers are appointed by, and serve at the pleasure of, the Board of Directors.

Name	Age	Position
Walter V. Klemp	61	Chairman of the Board, President and Chief Executive Officer
Jonathan P. Foster	57	Chief Financial Officer and Executive Vice President
Donald Picker	75	Chief Scientific Officer
Robert Shepard	68	Chief Medical Officer - Annamycin
Sandra L. Silberman	66	Chief Medical Officer - New Products
Robert E. George	70	Director
Michael D. Cannon	75	Director
John Climaco	52	Director
Elizabeth A. Cermak	63	Director

Set forth below is biographical information about each of the individuals named in the tables above:

Walter V. Klemp - Chairman of the Board, President and Chief Executive Officer

Mr. Klemp is a co-founder of our company, and has served as our chairman of the board and chief executive officer since July 2015 and as president since August 2017. Since July 2018, Mr. Klemp has served as executive chairman on the board of directors of Soliton, Inc., a medical device company focused on developing new technology for use in aesthetics. From November 2011 to July 2018, Mr. Klemp served as chief executive officer of Soliton. Mr. Klemp served as president and chief executive officer of Zeno Corporation from 2004 to April 2011, where he developed and marketed dermatology devices and drugs from concept through FDA approval and market launch. From 1987 to 2000, Mr. Klemp served as chief executive officer and chairman of Drypers Corporation, a publicly traded multinational consumer products company that was listed as #1 on the INC 500 List of America's Fastest Growing Companies. We believe that Mr. Klemp's history with our company and background, coupled with his extensive experience in the medical field, provide him with the qualifications to serve as a Chairman of the Board and CEO.

Jonathan P. Foster - Chief Financial Officer and Executive Vice President

Mr. Foster has served as our chief financial officer and executive vice president since August 2016. Mr. Foster brings more than 30 years in financial experience holding a variety of executive and senior financial positions with public, private, start-up to large corporate and international companies. From February 2012 to August 2016, Mr. Foster served as Chief Financial Officer and Executive Vice President of InfuSystem Holdings, Inc., a national provider of infusion pumps and related services to the healthcare industry. From May 2011 to January 2012, Mr. Foster served as a consultant to the Chief Financial Officer of LSG Sky Chefs, USA, Inc., a subsidiary of Deutsche Lufthansa AG.

Prior to that Mr. Foster served in various C-suite capacities with public and private companies with his start beginning as Manager at Deloitte & Touche, LLP. Mr. Foster served on the Board of Financial Institutions for the State of South Carolina from 2006 to 2012 and since June 2018 serves on the Board of Directors of Soliton, Inc., a medical device company focused on developing new technology for use in aesthetics, where he is the current chair of the Audit and Compensation Committees and is the past chair of the Nominating & Governance Committee. Mr. Foster is a Certified Public Accountant (South Carolina) and holds the designation of Chartered Global Management Accountant from the American Institute of Certified Public Accountants. He received his BS in Accounting from Clemson University in 1985.

Donald Picker, PhD - Chief Scientific Officer

Dr. Picker has served as our chief scientific officer since August 2017 after serving as our chief operating officer from July 2015 until August 2017 and as our president from January 2016 to August 2017. From 2006 through 2007, Dr. Picker was the President of Tapestry Pharmaceuticals. From 1998 to 2003, Dr. Picker was CEO of Synergy Pharmaceuticals. Synergy was merged into Callisto Pharmaceuticals where he was vice president of research and development until 2006. Dr. Picker led the development of carboplatin and cisplatin from concept to FDA approval. From 2018 to 2019, Dr. Picker served on the board of directors of CNS Pharmaceuticals, Inc., and Dr. Picker currently serves as the Chief Science Officer of CNS Pharmaceuticals, Inc. on a part-time basis. Dr. Picker received his BS degree from Brooklyn Polytechnic University and his PhD from SUNY Albany in 1975. Dr. Picker is currently devoting only part of his work time to us, and provides services as needed to us.

Robert Shepard, MD, FACP - Chief Medical Officer - Annamycin

Dr. Shepard has served as our chief medical officer, on a part-time basis, since June 2016. From 2013 until 2014, Dr. Shepard served as vice president of scientific and medical affairs for Accelovance. Dr. Shepard has extensive research credentials in hematology and oncology and is board certified in oncology, hematology and internal medicine. He has a wide array of experience in translational medicine and clinical research and has been actively involved in oncology research since 1970, responsible for the clinical development of several drugs and immune therapies for biopharmaceutical companies. Dr. Shepard is a Magna Cum Laude graduate of Harvard University in biochemical sciences and molecular biophysics and studied in the Harvard-M.I.T. Health Sciences program. He held fellowships in hematology and oncology at the Tufts-New England Medical Center where he conducted laboratory research in leukemias, myeloma and myelodysplasia, as well as fellowship in pharmacology and molecular genetics at the Dana-Farber Cancer Center and Harvard Medical School. Dr. Shepard holds academic appointments at Harvard University, Tufts University and the University of Virginia. Dr. Shepard is currently devoting only part of his work time to us, and provides services as needed to us.

Sandra L. Silberman, MD PhD - Chief Medical Officer - New Products

Dr. Silberman has served as our chief medical officer, on a part-time basis, for new products since November 2017. Dr. Silberman has served as chief medical officer of CNS Pharmaceuticals, Inc. since December 2017 on a part-time basis. Dr. Silberman advanced several original, proprietary compounds into Phases I through III during her work with leading biopharmaceutical companies, including BristolMyers Squibb, AstraZeneca, Imclone and Roche. Dr. Silberman is a Hematologist/Oncologist who earned her B.A., Sc.M. and Ph.D. from the Johns Hopkins University School of Arts and Sciences, School of Public Health and School of Medicine, respectively, and her M.D. from Cornell University Medical College, and then completed both a clinical fellowship in Hematology/Oncology as well as a research fellowship in tumor immunology at the Brigham & Women's Hospital and the Dana Farber Cancer Institute in Boston, MA. Dr. Silberman is currently devoting only part of her work time to us, and provides services as needed to us.

Robert E. George - Director

Mr. George joined our board of directors upon our IPO. He was a partner with the international accounting firm of PricewaterhouseCoopers (PWC) for 27 years until 2010, where his client service sectors included healthcare, among others. Mr. George currently serves as Chairman of the Audit Committee for The University of Texas Health Science Center at Houston and, since June 2011, has been a member of The University of Texas at Austin, McCombs Graduate School of Business accounting faculty. Mr. George has a B.B.A. - Accounting (cum laude) from the University of North Texas. We believe Mr. George's deep and broad level of expertise in financial accounting and reporting matters, particularly in the healthcare sector, as a former audit partner at PricewaterhouseCoopers provide him with the qualifications to serve as a director.

Michael D. Cannon - Director

Mr. Cannon joined our board of directors upon our IPO. Between 1997 and 2004, Mr. Cannon was the Chief Science Officer, EVP and a Director of SICOR, Inc., a U.S. public pharmaceutical company, until its acquisition by Teva Pharmaceutical Industries, Inc. SICOR focused on generic finished dosage injectable pharmaceuticals, active pharmaceutical ingredients and generic biopharmaceuticals. While at SICOR, he oversaw the acquisition and development of the biological business, including initiation and management of international partnerships, as well as on the design, construction, and licensure of protein manufacturing facilities. From July 2005 to December 2009, Mr. Cannon was a member of the scientific advisory board of Trevi Health Ventures LP, a New York investment fund specializing in health care investments. From May 2005 until December 2011, Mr. Cannon was a partner in a private partnership formed to evaluate and perform preliminary development of intellectual property in the healthcare sector. Since 2005, Mr. Cannon has served as a board member for several private companies. Mr. Cannon currently serves on the boards of directors of three privately held biotech companies. He previously served on the board of directors of Athenex, Inc., a public company traded on the NASDAQ. Mr. Cannon has a degree in chemistry from Fordham College. We believe Mr. Cannon's distinguished career in the biotechnology field, particularly as Chief Science Officer, EVP and a Director of SICOR, a publicly traded company, provide him with the qualifications to serve as a director.

John M. Climaco, Esq. - Director

Mr. Climaco joined our board of directors in July 2017. Mr. Climaco has served as the chief executive officer of CNS Pharmaceuticals, Inc. since September 2017. Mr. Climaco has served in leadership roles in a variety of healthcare companies. From 2014 until 2017, Mr. Climaco served as the Executive Vice President of PermaFix Medical S.A. From 2002 until 2012, Mr. Climaco served as President and CEO of Axial Biotech, Inc., a DNA diagnostics company. Mr. Climaco previously served as a director of Digirad, Inc., a leading national provider of imaging services; PDI, Inc., a provider of outsourced commercial services to pharma companies; InfuSystem Holdings, Inc., the largest supplier of infusion services to oncologists in the United States; and Birner Dental Management Services, Inc., a provider of practice management services to the dental industry. Mr. Climaco obtained his Juris Doctorate Degree from University of California Hastings College of Law, San Francisco, CA and a Bachelors of Philosophy from Middlebury College, Middlebury, VT. Mr. Climaco is active with the State Bar of Utah. We believe Mr. Climaco's vast experience with development stage companies and his legal background provides him with the qualifications to serve as a director.

Elizabeth Cermak - Director

Ms. Cermak joined our board of directors in October 2020. Ms. Cermak has held numerous board positions in the healthcare space, including currently at both Que Oncology and Clarus Therapeutics, Inc., where she serves as an Independent Board Director. In addition, Ms. Cermak was formerly an Independent Board Director at SteadyMed Therapeutics. From 2009 to 2013, Ms. Cermak was the Chief Commercial Officer and Executive Vice President at POZEN, now Aralez Pharmaceuticals. As Chief Commercial Officer at POZEN, Ms. Cermak developed the commercial strategy and launch Plans for the Company's first self-marketed product, and signed licensing deals with Johnson & Johnson, Desitin, and Sanofi. Prior to joining POZEN, Ms. Cermak worked at Johnson & Johnson for 25 years, serving most recently as World-Wide Vice President Personal Products Franchise and Vice President Professional Sales & Marketing. We believe Ms. Cermak's extensive experience in the healthcare industry provides her with the qualifications to serve as a director.

No director is related to any other director or executive officer of our company or our subsidiaries, and, there are no arrangements or understandings between a director and any other person pursuant to which such person was elected as director.

GOVERNANCE OF THE COMPANY

Our Board of Directors

Our Board of Directors oversees the business affairs of Moleculin and monitors the performance of management. Pursuant to our Bylaws, the Board of Directors shall consist of no less than one director. Members of the Board of Directors discussed various business matters informally on numerous occasions throughout the year 2020. The Board held 21 meetings during 2020. In addition to meetings of the full Board of Directors, our Board has established an Audit Committee, Compensation Committee, and Nominating and Corporate Governance Committee. During 2020, these Board committees held an additional 28 meetings during the year. Specifically, the breakdown of the committee meetings for 2020 are as follows: 7 for the Audit Committee, 13 for the Compensation Committee, and 8 for the Governance Committee. We believe that such interaction between fellow Board members and with management provided proper oversight of the Company. Each incumbent director attended at least 75% of the total number of meetings of the Board of Directors and committee meetings of which such director was a member (held during the period for which such director was in office).

Director Independence

The rules of the Nasdaq Stock Market, or the Nasdaq Rules, require a majority of a listed company's board of directors to be composed of independent directors. In addition, the Nasdaq Rules require that, subject to specified exceptions, each member of a listed company's audit, compensation and nominating and governance committees be independent. Under the Nasdaq Rules, a director will only qualify as an independent director if, in the opinion of our Board of Directors, that person does not have a relationship that would interfere with the exercise of independent judgment in carrying out the responsibilities of a director. The Nasdaq Rules also require that audit committee members satisfy independence criteria set forth in Rule 10A-3 under the Securities Exchange Act of 1934, as amended, or the Exchange Act. In order to be considered independent for purposes of Rule 10A-3, a member of an audit committee of a listed company may not, other than in his or her capacity as a member of the audit committee, the board of directors, or any other board committee, accept, directly or indirectly, any consulting, advisory, or other compensatory fee from the listed company or any of its subsidiaries or otherwise be an affiliated person of the listed company or any of its subsidiaries. In considering the independence of compensation committee members, the Nasdaq Rules require that our board of directors must consider additional factors relevant to the duties of a compensation committee member, including the source of any compensation we pay to the director and any affiliations with our company.

Our board of directors undertook a review of the composition of our board of directors and its committees and the independence of each director. Based upon information requested from and provided by each director concerning his background, employment and affiliations, including family relationships, our board of directors has determined that each of our directors, with the exception of Mr. Klemp, are independent as defined under the Nasdaq Rules.

Board Committees

We established a Nominating and Corporate Governance Committee, an Audit Committee and a Compensation Committee. Our Board of Directors has adopted and approved a charter for each of these standing committees. The charters, which include the functions and responsibilities of each of the committees, can be found in the "Investors - Corporate Governance" section on our web site at www.moleculin.com.

Audit Committee. The members of the Audit Committee are Robert George (Chairperson), Michael Cannon, John Climaco, and Elizabeth Cermak. Each member of the Audit Committee is independent as defined by the Nasdaq Rules. In addition, each member of the Audit Committee satisfies the additional requirements of the SEC and Nasdaq Rules for audit committee membership, including the additional independence requirements and the financial literacy requirements. The Board has determined that at least one member of the Audit Committee, Mr. George, is an "audit committee financial expert" as defined in the SEC's rules and regulations. The primary purpose of the Audit Committee is to oversee the quality and integrity of our accounting and financial reporting processes and the audit of our financial statements. The Audit Committee is responsible for selecting, compensating, overseeing and terminating the selection of our independent registered public accounting firm.

Nominating and Corporate Governance Committee. The members of the Nominating and Corporate Governance Committee are Robert George (Chairperson), Michael Cannon, John Climaco, and Elizabeth Cermak. Each member of the Nominating and Corporate Governance Committee is independent as defined by Nasdaq Rules. The primary functions and responsibilities of the Nominating and Corporate Governance Committee are to: (a) determine the qualifications, qualities, skills, and other expertise required to be a director; (b) identify and screen individuals qualified to become members of the Board; (c) make recommendations to the Board regarding the selection and approval of the nominees for director; and (d) review and assess the adequacy of our corporate governance policies and procedures.

Compensation Committee. The members of the Compensation Committee are Michael Cannon (Chairperson), Robert George, John Climaco, and Elizabeth Cermak. Each member of the Compensation Committee is independent as defined by Nasdaq Rules.

The Compensation Committee is responsible for, among other things, reviewing and making recommendations to the Board of Directors with respect to the annual compensation for our Chief Executive Officer. The Compensation Committee also is responsible for reviewing and making recommendations to the Board of Directors the annual compensation and benefits for our other executive officers. The Compensation Committee also, among other things, reviews compensation of the Board, reviews and makes recommendations on all new executive compensation programs that are proposed for adoption and administers the Company's equity incentive plans. The Compensation Committee is responsible for, among other things, reviewing and making recommendations to the Board of Directors with respect to the annual compensation for our Chief Executive Officer and Chief Financial Officer.

Our Chief Executive Officer and Chief Financial Officer review the performance of our other executive officers (other than himself) and, based on that review, they then make recommendations to the Compensation Committee about the compensation of executive officers (other than themselves). Our Chief Executive Officer does not participate in any deliberations or approvals by the Board or the Compensation Committee with respect to his own compensation.

Board Member Attendance at Annual Meetings

We do not have a formal policy regarding Board attendance at our annual meetings, however, all of our directors are invited to the annual meeting and all of our directors at the time attended our prior annual meeting.

Board Leadership Structure and Role in Risk Oversight

Walter V. Klemp serves as both our Chief Executive Officer and Chairman of the Board. Our Board of Directors has no policy with regard to the separation of the offices of Chairman of the Board and Chief Executive Officer, and believes, given the size of our company, it is appropriate for Mr. Klemp to serve in both roles.

John Climaco serves as the Lead Independent Director of our Board. As Lead Independent Director, Mr. Climaco is responsible for, among other things,

- leading executive sessions of the Board's independent directors;
- serving as the principal liaison between the Chairman and the independent directors; and
- approving all information sent to the Board of Directors and approving the agendas for all Board meetings.

Our Board believes that by maintaining a Lead Independent Director position, it has designed a governance structure that best advances Moleculin's objectives, while maintaining proper checks and balances on senior management, and providing the independent members of the Board with open and transparent communication regarding our strategic planning activities.

Our management is responsible for managing risks in our business, including developing processes to manage and monitor risks. The Board views its role as one of oversight. The Board focuses on understanding management's risk management systems, the effectiveness of those systems, and the way in which management proactively manages risks. In addition, the Board utilizes the Nominating and Corporate Governance Committee, the Audit Committee and the Compensation Committee to manage risks that arise under each committee's area of focus.

Nomination of Director Candidates

We receive suggestions for potential director nominees from many sources, including members of the Board, advisors, and stockholders. Any such nominations, together with appropriate biographical information, should be submitted to the Chairperson of the Nominating and Corporate Governance Committee in the manner discussed below. Any candidates submitted by a stockholder or stockholder group are reviewed and considered in the same manner as all other candidates.

Qualifications for consideration as a Board nominee may vary according to the particular areas of expertise being sought as a complement to the existing board composition. However, minimum qualifications include high level leadership experience in business activities, breadth of knowledge about issues affecting the Company, experience on other boards of directors, preferably public company boards, and time available for meetings and consultation on Company matters. Our Nominating and Corporate Governance Committee does not have a formal policy with regard to the consideration of diversity in identifying director candidates, but seeks a diverse group of candidates who possess the background, skills and expertise to make a significant contribution to the Board, to the Company and our stockholders. Candidates whose evaluations are favorable are recommended by our Nominating and Corporate Governance Committee to the full Board for consideration. The full Board selects and recommends candidates for nomination as directors for stockholders to consider and vote upon at the annual meeting.

A stockholder wishing to nominate a candidate for election to our Board of Directors at any annual meeting at which the Board of Directors has determined that one or more directors will be elected must submit a written notice of his or her nomination of a candidate to the Chairperson of the Nominating and Corporate Governance Committee (c/o the Corporate Secretary), providing the candidate's name, biographical data and other relevant information together with a consent from the nominee. Pursuant to our Bylaws, the submission must be received at our principal executive offices 120 days prior to the anniversary date of the mailing date of our previous year's proxy statement so as to permit the Board of Directors time to evaluate the qualifications of the nominee.

During 2020, our Nominating and Corporate Governance Committee retained a third-party search firm to conduct a search to recruit a director. Ms. Cermak was recommended to our Nominating and Corporate Governance Committee by the third-party search firm. Except as set forth above, we have not employed an executive search firm, or paid a fee to any other third party, to locate qualified candidates for director positions.

Stockholder Communications with Directors

Persons wishing to write to our Board of Directors, or to a specified director or committee of the Board, should send correspondence to the Corporate Secretary at 5300 Memorial Drive, Suite 950, Houston, Texas 77007. Electronic submissions of stockholder correspondence will not be accepted.

The Corporate Secretary will forward to the directors all communications that, in his or her judgment, are appropriate for consideration by the directors. Examples of communications that would not be appropriate for consideration by the directors include commercial solicitations and matters not relevant to the stockholders, to the functioning of the Board or to the affairs of Moleculin. Any correspondence received that is addressed generically to the Board of Directors will be forwarded to the Chairman of the Board.

Anti-Hedging Policy

Our policies prohibit directors, officers and other employees from purchasing financial instruments (including prepaid variable forward contracts, equity swaps, collars, and exchange funds), or otherwise engaging in transactions, that hedge or offset, or are designed to hedge or offset, any decrease in the market value of our equity securities without our prior approval.

Code of Ethics

We have adopted a written code of ethics that applies to our directors, principal executive officer, principal financial officer, principal accounting officer or controller and any persons performing similar functions. The code of ethics is on the “Investors - Corporate Governance - Governance Documents” section of our web site at www.moleculin.com. We intend to disclose any future amendments to, or waivers from, the code of ethics within four business days of the waiver or amendment through a website posting or by filing a Current Report on Form 8-K with the SEC.

COMPENSATION OF DIRECTORS AND EXECUTIVE OFFICERS

Executive Officer Compensation

Our named executive officers for the years ended December 31, 2020 and 2019, which consist of our principal executive officer and our two other most highly compensated executive officers, are: (i) Walter V. Klemp, our chairman, president and chief executive officer; (ii) Jonathan P. Foster, our chief financial officer and executive vice president; and (iii) Donald Picker, our chief scientific officer.

Name and Principal Position	Year	Salary (\$)	Non-Equity Incentive Plan Compensation (\$)	Stock Awards (\$) (5)	Option awards (\$) (1)	All other compensation (\$) (2)	Total (\$)
Walter V. Klemp, Chairman, President - Chief Executive Officer (3)(4)	2020	500,000	242,500	327,783	410,852	35,644	1,516,779
	2019	625,000	215,380	415,148	525,000	21,188	1,801,716
Jonathan P. Foster, Executive Vice President and Chief Financial Officer	2020	375,000	145,500	—	377,982	48,112	946,594
	2019	360,417	121,040	—	330,750	26,734	838,941
Donald Picker, Chief Scientific Officer	2020	300,000	117,875	—	82,171	20,281	520,327
	2019	289,583	100,125	—	105,000	27,481	522,189

(1) Represents the full grant date fair value of the option grant calculated in accordance with FASB ASC Topic 718. These amounts do not necessarily correspond to the actual value that may be realized by the named executive officer. For a summary of the assumptions made in the valuation of the awards, please see Note 6 to our financial statements as of and for the period ended December 31, 2020 included in the Form 10-K provided to you along with this proxy statement.

(2) Represents payments made by us for medical coverage, term life, dental vision, short and long-term disability, voluntary AD&D and Voluntary life.

(3) Mr. Klemp's employment agreement provided that Mr. Klemp would defer 50% of his salary for 12 months, or until June 1, 2017, which deferred salary was payable upon the earlier of Mr. Klemp's termination or on June 1, 2019. The deferred compensation of \$150,000 was paid in 2019.

(4) Mr. Klemp's equity awards in 2020 consisted of 83,334 stock options with a grant date fair value of \$410,852, and 58,869 restricted stock units with a grant date fair value of \$327,783. Mr. Klemp's equity awards in 2019 consisted of 83,334 stock options with a grant date fair value of \$525,000, and 52,818 restricted stock units, with a grant date fair value of \$415,148.

(5) Represents the full grant date fair value of the restricted stock unit calculated in accordance with FASB ASC Topic 718. These amounts do not necessarily correspond to the actual value that may be realized by the named executive officer. For a summary of the assumptions made in the valuation of the awards, please see Note 6 to our financial statements as of and for the period ended December 31, 2020 included in the Form 10-K provided to you along with this proxy statement.

Narrative to Summary Compensation Table

During 2017, we established for compensation purposes a compensation year from June 1 until May 31 of each year. In June of each year, our compensation committee completes its annual review of executive compensation and determines, after researching comparable companies and using a leading industry survey, the compensation arrangements for the next compensation year.

We review compensation annually for all employees, including our executives. In setting executive base salaries and bonuses and granting equity incentive awards, we consider compensation for comparable positions in the market, the individual executive's performance as compared to our expectations and objectives, our desire to motivate our employees to achieve short and long-term results that are in the best interests of our stockholders and a long-term commitment to our company. We do not target a specific competitive position or a specific mix of compensation among base salary, bonus or long-term incentives. Our Compensation Committee typically reviews and discusses management's proposed compensation with the Chief Executive Officer and Chief Financial Officer for all executives other than the Chief Executive Officer. Based on those discussions and its discretion, the Compensation Committee then determines the compensation for each executive officer. Our Compensation Committee, without members of management present, discusses and ultimately approves the compensation of our executive officers. In April 2018, the Compensation Committee retained Pay Governance, a compensation consulting firm, to evaluate our executive compensation program. Pay Governance's engagement included assisting the Compensation Committee with the selection of a peer group of companies for benchmarking purposes, and an analysis of our existing executive compensation. The consultant serves at the pleasure of the Compensation Committee rather than us, and the consultant's fees are approved by the Compensation Committee.

Annual Base Salary

For the 2019/2020 compensation year, the base salaries for Mr. Klemp, Mr. Foster, and Dr. Picker were \$500,000, \$375,000, and \$300,000, respectively. No change was made to the base salaries for the 2020/2021 compensation year for Mr. Klemp, Mr. Foster, and Dr. Picker.

Annual Bonus and Non-Equity Incentive Plan Compensation

We seek to motivate and reward our executives for achievements relative to our corporate goals and objectives, and with respect to their respective individual goals, for each fiscal year. For the 2019/2020 compensation year, the target bonus for Mr. Klemp, Mr. Foster and Dr. Picker were 50%, 40%, and 38.3%, respectively, of their base salary. For the 2020/2021 compensation year, the target bonus for Mr. Klemp, Mr. Foster and Dr. Picker are 71%, 51%, and 51%, respectively, of their base salary.

The actual performance-based annual bonus paid is calculated by multiplying the executive's annual base salary, target bonus percentage, the percentage attainment of the corporate goals established by the Board for such year, which represents 100% of the potential bonus payable to our Chief Executive Officer and Chief Financial Officer, and the percentage attainment of the individual goals approved by our Compensation Committee, which represents 25% of the potential bonus payable to our other officers. However, the Compensation Committee is not required to calculate bonuses in this manner and retains discretion in the amounts it awards and the factors it takes into consideration in determining bonus amounts. At the end of the year, the Compensation Committee reviews our performance against our goals and objectives and approves the extent to which we achieved each of our corporate and individual goals and objectives, and, for each named executive officer, the amount of the bonus awarded.

For the 2019/2020 compensation year, bonuses were awarded based on our achievement of specified corporate goals, including the progress of our clinical trials, the improvement of our internal controls and our ability to maintain sufficient funding, and individual goals, as applicable. Based on the level of achievement, our Compensation Committee awarded Mr. Klemp, Mr. Foster and Dr. Picker 97%, 97%, and 103%, respectively, of their potential bonuses for the 2019/2020 compensation year. These actual bonus amounts are reflected in the "Non-Equity Incentive Plan Compensation" column of the Summary Compensation Table above.

For the 2020/2021 compensation year, bonuses will be awarded based on our achievement of specified corporate goals, including the progress of our clinical trials, the improvement of our internal controls and our ability to maintain sufficient funding, and individual goals, as applicable.

Long-Term Incentives

Our 2015 Stock Plan provides for the grant of stock options, stock awards, stock unit awards and stock appreciation rights to key employees, non-employee directors and consultants.

Each year our Compensation Committee establishes a value for the expected equity grant issuable to each of our named executive officers. For the 2019/2020 compensation year, the fair value of the equity grants for Mr. Klemp, Mr. Foster and Dr. Picker were \$900,000, \$470,000 and \$100,000, respectively. For the 2020/2021 compensation year, the fair value of the equity grants for Mr. Klemp, Mr. Foster and Dr. Picker were established at \$955,000, \$430,000 and \$150,000, respectively, although the final determination for any equity grants remain at the discretion of the Compensation Committee. For options, we set the option exercise price, and grant date fair value based on the closing price of our common stock on Nasdaq on the date of grant. The shares underlying options typically vest in four equal annual installments. For other equity awards, the grant date fair value is based on the closing price of our common stock on Nasdaq on the date of grant.

Equity Awards

The following table sets forth certain information concerning our outstanding equity awards for our named executive officers at December 31, 2020.

Outstanding Equity Awards At Fiscal Year-End

Name	Grant Date of Equity Award	Option Awards		Option Exercise Price (\$)	Option Expiration Date	Stock Awards	
		Number of Securities Underlying Unexercised Options (#) Exercisable (1)	Number of Securities Underlying Unexercised Options (#) Unexercisable (1)			Number of shares or units of stock that have not vested (#)	Market value of shares of units of stock that have not vested (\$) (3)
Walter V. Klemp, Chairman, President - Chief Executive Officer (2)	7/2/2020	—	83,334	5.56	7/2/2030	58,869	281,394
	7/11/2019	20,834	62,500	7.86	7/11/2029	39,613	189,350
	6/6/2018	44,527	38,806	10.92	6/6/2028	—	—
	10/3/2017	42,501	14,166	14.94	10/3/2027	—	—
Jonathan P. Foster, Chief Financial Officer and Executive Vice President	7/2/2020	—	76,667	5.56	7/2/2030	—	—
	7/11/2019	13,125	39,375	7.86	7/11/2029	—	—
	6/6/2018	25,084	25,083	10.92	6/6/2028	—	—
	10/3/2017	18,126	6,041	14.94	10/3/2027	—	—
Donald Picker, Chief Scientific Officer	8/19/2016	66,667	—	35.10	8/19/2026	—	—
	7/2/2020	—	16,667	5.56	7/2/2030	—	—
	7/11/2019	4,167	12,500	7.86	7/11/2029	—	—
	6/6/2018	6,250	6,250	10.92	6/6/2028	—	—
	10/3/2017	7,500	2,500	14.94	10/3/2027	—	—

- (1) The shares underlying the options vest in equal annual installments over a four-year period (i.e., one-quarter of each grant vests on the first, second, third and fourth anniversary of the grant date).
- (2) Restricted stock unit award vests in four equal annual installments through July 2, 2024, subject to continued service with us through each applicable vesting date.
- (3) Based on the closing price of our common stock on December 31, 2020 of \$4.78.

Employment Agreements

Klemp Employment Agreement

On October 13, 2016, we entered into an employment agreement with Mr. Walter V. Klemp pursuant to which Mr. Klemp agreed to serve as our Chief Executive Officer commencing on such date. The agreement provided for an initial annual salary of \$300,000, which is reviewed. We paid the deferred salary on June 1, 2019. If Mr. Klemp's employment is terminated at our election without "cause" (as defined in the agreement), which requires 30 days advanced notice, or by Mr. Klemp for "good reason" (as defined in the agreement), Mr. Klemp shall be entitled to receive severance payments equal to 12 months of Mr. Klemp's base salary. Mr. Klemp has agreed not to compete with us for 12 months after the termination of his employment.

Foster Employment Agreement

On August 19, 2016, we entered into an employment agreement with Mr. Jonathan P. Foster pursuant to which Mr. Foster agreed to serve as our Chief Financial Officer and Executive Vice President commencing on such date for an initial term of three years, which is automatically renewed for additional one-year terms unless either party chooses not to renew the agreement. The agreement provided for an initial annual salary of \$250,000, which is reviewed annually. Mr. Foster may receive an annual bonus, provided that the final determination on the amount of the annual bonus, if any, will be made by the Compensation Committee of the Board of Directors, based on criteria established by the Compensation Committee.

Under the agreement, Mr. Foster was granted a ten-year option to purchase 66,667 shares at an exercise price per share equal to the closing price of our common stock on the date of execution of his employment agreement, which was \$35.10. The option vested in four equal installments on each of the succeeding four anniversary dates of the execution of the agreement, provided Mr. Foster was Chief Financial Officer on such vesting date.

If Mr. Foster's employment is terminated at our election without "cause" (as defined in the agreement), which requires 90 days advance notice, or by Mr. Foster for "good reason" (as defined in the agreement), Mr. Foster shall be entitled to receive severance payments equal to nine months of Mr. Foster's base salary and a pro rata portion of the target bonus, if any, for the year in which such termination occurs. In addition, if Mr. Foster's employment is terminated prior to the end of the term of the agreement by us without cause or by Mr. Foster for good reason, and such termination occurs within three months prior to a change in control, in contemplation of a change in control or within six months after a change in control, Mr. Foster shall be entitled to receive, in addition to the severance discussed above, an acceleration of the vesting of the option grant described in the prior paragraph. Mr. Foster agreed not to compete with us until nine months after the termination of his employment.

Director Compensation

Our compensation committee has engaged Pay Governance LLC, an independent compensation consultant, to advise them on matters relating to our non-employee director compensation program. Based on a review of a compensation study prepared by Pay Governance, our compensation committee recommended to our Board and our Board approved the following policy for compensating non-employee members of the Board:

- Each non-employee director shall receive annual cash compensation of \$40,000. In addition, the chairperson of the Audit Committee, Compensation Committee and Nominating and Governance Committee shall receive an annual compensation of \$15,000, \$10,000 and \$7,500, respectively; the other members of such committees shall receive an annual compensation of \$7,500, \$5,000 and \$3,750, respectively; and the Lead Independent Director shall receive an annual compensation of \$15,000. All payments will be made within 15 days after calendar quarter end.
- Upon the initial appointment (or election) of non-employee directors to the Board, the director will be issued a 10-year option to purchase 6,667 shares of our common stock, under our 2015 Stock Plan, with 3-year annual vesting and an exercise price equal the closing price of our common stock on the date of the appointment (or election).
- Annually, on the date of our annual meeting, each non-employee director that is re-elected at the annual meeting will be issued, upon a motion and approval of the Board of Directors, a 10-year option to purchase 3,334 shares of our common stock, under our 2015 Stock Plan, with 1-year annual vesting and an exercise price equal the closing price of our common stock on the date of the annual meeting.

The following table sets forth the total compensation earned by our non-employee directors in 2020 (Mr. Klemp does not earn additional compensation for his services on the Board, and his compensation is fully reflected in the "--Summary Compensation Table" above):

Name	Year	Fees earned or paid in cash (\$)	Option awards (\$) (1)	Total (\$)
Michael D. Cannon	2020	\$ 59,039	\$ 14,910	\$ 73,949
Robert E. George	2020	\$ 65,297	\$ 14,910	\$ 80,207
John Climaco	2020	\$ 69,051	\$ 14,910	\$ 83,961
Elizabeth Cermak	2020	\$ 14,139	\$ 28,183	\$ 42,322

(1) Represents the full grant date fair value of the option award our board approved and granted to each non-employee director, calculated in accordance with FASB ASC Topic 718. These amounts do not necessarily correspond to the actual value that may be realized by the director. For a summary of the assumptions made in the valuation of the awards, please see Note 6 to our financial statements as of and for the period ended December 31, 2020 included in the Form 10-K provided to you along with this proxy statement. As of December 31, 2020, the aggregate number of shares outstanding under all options to purchase our common stock held by our non-employee directors were: Mr. Cannon - 16,668 shares; Mr. George - 16,668 shares; Mr. Climaco - 14,168 shares, and Ms. Cermak - 6,667 shares. None of our non-employee directors held stock awards other than options as of December 31, 2020.

Securities Authorized for Issuance under Equity Compensation Plans

The following table sets forth information regarding our equity compensation plans at December 31, 2020:

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)
Equity compensation plans approved by security holders (1)	903,487	\$11.24	726,493
Equity compensation plans not approved by security holders (2)	109,639	\$17.32	—

(1) Represents shares of common stock issuable upon exercise of outstanding stock options under our current 2015 Stock Plan.

(2) Consists of warrants issued to consultants for services.

Scientific Advisory Board

Our executive team is supported by our scientific advisory board, the members of which include scientists experienced in the fields in which we pursue.

Dr. Waldemar Priebe, Ph.D., Chair of Scientific Advisory Board (SAB) Waldemar Priebe is a founder of and one of the founding scientists at Moleculin, LLC and serves as Chairman of our Scientific Advisory Board. Dr. Priebe is also a Professor of Medicinal Chemistry at the Department of Experimental Therapeutics at The University of Texas MD Anderson Cancer Center. Dr. Priebe led the discovery of the molecules that form the basis for our lead drug candidates. As a founder or founding scientist at a number of successful biotechnology firms such as Aronex Pharmaceuticals, Houston Pharmaceuticals, Reata Pharmaceuticals, and IntertechBio, Dr. Priebe has been integral in advancing several drugs through the pipeline, three of which are currently in clinical development. He has also developed several new small molecule compounds that have been licensed as potential drugs.

Dr. John Paul Waymack, M.D., ScD, SAB Member. Dr. Waymack served as Chairman of the Board of Directors, and Chief Medical Officer of Kitov Pharmaceuticals from its founding in 2013 through his retirement in 2019. Dr. Waymack brings over 20 years' experience in the biopharma field. A former academic transplant surgeon and FDA medical officer, he has over 20+ years' experience as a drug development consultant for major pharmaceutical companies, including Pfizer, Roche, Pharmacia, Warner Lambert and Searle. During his 10-year academic career, Dr. Waymack published over 100 scientific essays, mainly in the fields of prostaglandins and immunology. In addition, he was commissioned and served as a Major in the US Army Medical Corps in the position of Chief of Surgical Research at the Institute for Surgical Research. Dr. Waymack was also an Associate Professor of Surgery at the University of Texas Medical Branch and at the University of Medicine and Dentistry of New Jersey.

Dr. Jorge Cortes, M.D., SAB Member. Dr. Cortes is Director of the Georgia Cancer Center at Augusta University after serving for 23 years in the Department of Leukemia at MD Anderson Cancer Center where he served as deputy chair and directed the CML and AML Programs. Dr. Cortes received his medical degree in 1986 from the Universidad Nacional Autonoma de Mexico, and completed his medical oncology fellowship at MD Anderson. Dr. Cortes, whose clinical interest focuses on new drug development and the management of patients with myelodysplastic syndromes, acute and chronic leukemias, and myeloproliferative disorders has authored over 1000 peer-reviewed medical publications in top-tier journals including New England Journal of Medicine, Lancet Oncology, Lancet Hematology, Journal of Clinical Oncology, Leukemia, Blood and many others. He has authored several books and book chapters in prestigious publications such as Cancer Medicine and Harrison's Principles of Internal Medicine. He has received numerous awards including the Faculty Scholar Award from MD Anderson in 2003, the Annual Celgene Young Investigator Achievement Award for Clinical Research in Hematology in 2005, The Dr. John J. Kenny Award from The Leukemia & Lymphoma Society in 2007, the Otis W. and Pearl L. Walters Faculty Achievement Award in Clinical Research from MD Anderson in 2007, The Professor David Galton Lecture from the Imperial College of London Hammersmith Hospital in London, UK in 2011, the William Randolph Hearst Foundations Faculty Achievement Award in Education in 2013, and The Gerald P. Bodey Award for Excellence in Education in 2014. He is currently the Cecil F. Whitaker Jr. Georgia Research Academy Eminent Scholar Chair in Cancer.

Dr. Elihu Estey, M.D., SAB Member. Dr. Estey is a Professor of Medicine in the Division of Hematology at the University of Washington School of Medicine and a Full Member and Director of AML Clinical Research (non-transplant) Clinical Research Division, Fred Hutchinson Cancer Research Center. Dr. Estey has built a distinguished career in cancer research approaching 40 years of active clinical practice with Acute Myeloid Leukemia ("AML") patients, providing mentorships for many physicians that have risen to prominence in AML, lectured globally to professional audiences on cancer research and published more than 700 articles on hematologic malignancies, specifically on AML. Additionally, Dr. Estey serves on the European Leukemia Net (ELN) guidelines committee for AML and has served as an advisor for AML studies to the Oncology Drugs Advisory Committee ("ODAC") of the U.S. Food and Drug Administration. Dr. Estey's contribution to science include: developed ATRA and Arsenic without chemotherapy for APL newly diagnosed patients, at MD Anderson; subsequently found to be superior to chemotherapy +ATRA, and now the widely accepted treatment for the disease; the first to develop and use FLAG-IDA (fludarabine containing regimen) in AML; and extensive reviewer of AML publications (Blood and JCO) and current Associate Editor of Leukemia. Dr. Estey's education includes an A.B. in Mathematics from Yale University in 1968 and an M.D. from Johns Hopkins University, Baltimore, MD in 1972. Additionally, Dr. Estey's training includes serving as an Intern in Medicine, New York University, Bellevue Medical Center, New York, NY from 1972-73; a Resident in Medicine, New York University, Bellevue Medical Center, New York, NY from 1973-76; a Chief Resident in Neurology, New York University, Bellevue Medical Center, New York, NY from 1976-78; and as a Fellow, Department of Developmental Therapeutics, University of Texas M.D. Anderson Hospital, Houston, TX from 1978-80.

Dr. James L. Abbruzzese, M.D., SAB Member. Dr. Abbruzzese is the Chief of the Division of Medical Oncology at Duke University, and Member of the Duke Cancer Institute at Durham, North Carolina. Abbruzzese earned his medical degree with honors from the University of Chicago Pritzker School of Medicine and completed his residency in Internal Medicine at Johns Hopkins Hospital. He also completed clinical fellowships in Infectious Diseases at the Johns Hopkins and in Medical Oncology and Medical Oncology Research Laboratory of Neoplastic Disease Mechanisms at the Dana-Farber Cancer Institute of Harvard Medical School.

Abbruzzese has spent most of his professional career at M.D. Anderson, where he rose through the ranks to his current leadership positions as Chairman of the Department of Gastrointestinal Medical Oncology and Associate Vice-Provost for Clinical Research. Among his many accomplishments, Abbruzzese is a Fellow of the American College of Physicians and Fellow of the American Society of Clinical Oncology. He has co-authored more than 400 research publications and currently serves as Chair of the Clinical Trials and Translational Research Advisory Committee of the National Cancer Institute.

Dr. Hongbo Zhai, SAB Member. Dr. Zhai former Senior Faculty and Supervisor of Postdoctoral Fellows at University of California San Francisco, has joined Moleculin's Science Advisory Board. Dr. Zhai has over 20 years research and development experience in pharmaceuticals and biotechnology. He has worked in oncology, dermatology and virology within China for three drug technologies. Dr. Zhai has contributed to the development of products in collaboration with global Fortune 500 companies such as Procter & Gamble, Pfizer, Johnson & Johnson, 3M Pharmaceuticals, and L'Oreal and has published more than 120 scientific articles in his research areas.

Prof. Dominique Schols, Ph.D. - Since 2013 Dr. Schols has been Head of the Laboratory of Virology and Chemotherapy, Department of Microbiology, Immunology and Transplantation, KULeuven; Head of the subdivision Rega General and head of the Subdivision Chemotherapy. Chairman of the Rega Foundation. Dr. Schols is also a member of the board of directors of the Rega Institute; member of the board and the council of the Department Microbiology, Immunology and Transplantation. His main research interests: Chemotherapy of retroviral diseases with special emphasis on HIV/AIDS; Cellular (chemokine) receptors as targets for specific and broad-spectrum anti-viral therapy for HIV, herpes virus, dengue virus and zika virus; Molecular mechanisms of antiviral drug resistance and viral escape mechanisms; Potential role of modified chemokines/ chemokine receptor inhibitors in diseases such HIV, cancer, inflammation and imaging applications; Development of microbicidal agents to inhibit sexual transmission of HIV and herpes virus. Prof. Dominique Schols is author or co-author of ~480 publications in peer-reviewed journals and according to the ISI Web of Science > 10,100 times cited with an h-index of 73.

Dr. Martin Tallman - Dr. Tallman is a board-certified hematologist and oncologist and Chief of the Leukemia Service at Memorial Sloan Kettering Cancer Center. Before joining Memorial Sloan Kettering, Dr. Tallman was on the faculty of Northwestern University Feinberg School of Medicine and the Robert H. Lurie Comprehensive Cancer Center for more than 20 years. There he directed the Leukemia Program, was Co-Director of the Hematologic Malignancy Program at the Robert H. Lurie Comprehensive Cancer Center, and was Associate Chief of the Division of Hematology-Oncology. Dr. Tallman completed fellowship training at the Fred Hutchinson Cancer Center and University of Washington at Seattle. Dr. Tallman is an Associate Editor for the journal *Blood*, the major periodical publishing new information regarding leukemias and other blood disorders. He is currently Chair of the Leukemia Committee of the Eastern Cooperative Oncology Group (ECOG), one of only three large cooperative oncology groups in the US responsible for coordinating large clinical trials of new therapies for patients with all of the acute and chronic leukemias, myelodysplastic syndromes, and myeloproliferative neoplasms. The ECOG, in collaboration with other cooperative oncology groups in the US and around the world, has carried out many important clinical trials which have set the standard of care for the most effective treatment of many of the leukemias and related disorders.

Richard Whitley, M.D. - Richard Whitley, M.D., is a Distinguished Professor of Pediatrics, Professor of Microbiology, Medicine and Neurosurgery; Loeb Eminent Scholar Chair in Pediatrics; Co-Director, Division of Pediatric Infectious Diseases; Vice-Chair, Department of Pediatrics; Senior Scientist, Department of Gene Therapy; Scientist, Cancer Research and Training Center; Faculty, Gene Therapy Center; Associate Director for Drug Discovery and Development and Senior Leader, Pediatric Oncology Program, O'Neal Comprehensive Cancer Center at the University of Alabama at Birmingham (UAB); and Co-Founder and Co-Director, Alabama Drug Discovery Alliance. Dr. Whitley is responsible for the National Institute of Allergy and Infectious Diseases (NIAID) Collaborative Antiviral Study Group whose role is to perform clinical trials of antiviral therapies directed against medically important viral diseases of children and adults including viruses considered as threats to human health. He has published more than 347 articles. He participates in numerous Data Safety and Monitoring Boards for ongoing clinical studies. He is a past President of the Infectious Diseases Society of America and received the UAB President's Medal in 2007. In 2013, he was named as the inaugural recipient of the Distinguished Clinical Research Scholar and Educator in Residence at the NIH Clinical Center.

We compensate the members of our Scientific Advisory Board, or SAB, based on our utilization of their time. As of the date hereof, we have entered into compensatory agreements with Drs. Waymack, Estey, Cortes, Abbruzzese, and Tallman pursuant to which we made a one-time grant of a 10-year option to purchase 1,667 shares of our common stock, under the Company's 2015 Stock Plan, with 4-year annual vesting and an exercise price equal to the closing price of our common stock on the date of the grant. In addition, we agreed to pay Dr. Waymack a fee of \$4,000 per month. We entered into a SAB agreement with Dr. Priebe in March 2020, as described in the "Related Party Transactions" section below.

RELATED PARTY TRANSACTIONS

In connection with the acquisition of Moleculin, LLC, we also negotiated on behalf of Moleculin, LLC two agreements with HPI. Waldemar Priebe and Don Picker are shareholders of HPI, and Dr. Priebe has the voting and dispositive power over our shares held by HPI. Under the first agreement, HPI's option to obtain an exclusive sublicense was terminated in exchange for a payment of \$100,000 and the issuance of 104,834 shares of our common stock, valued at \$36 per share. Under the second agreement (HPI Out-Licensing Agreement), HPI received a non-exclusive technology rights and development sublicense under which it continued its ongoing work to develop the WP1066 Portfolio related to treatment of non-skin cancer. Pursuant to this HPI Out-Licensing Agreement, we agreed to make payments to HPI totaling \$750,000 over a three-year period. Of this amount, all has been paid as of December 31, 2020. We expensed such costs as incurred as research and development expense, commencing after the IPO offering in exchange for HPI allowing us to access any data, information or know-how resulting from the research and development conducted by HPI. Pursuant to the HPI Out-Licensing Agreement, we had the right within three years of the effective date to buy-out from HPI all rights granted to HPI under the agreement for a payment of \$1.0 million. The option repurchase payment was paid on April 30, 2019 for \$1.0 million and, accordingly, the HPI Out-Licensing Agreement was terminated.

In August 2019, we entered into a sublease with HPI, pursuant to which we granted HPI access to our lab space in exchange for HPI agreeing to pay us 50% of the rent payable under our lease for such lab space. In March 2020, we entered into an agreement with HPI pursuant to which we were permitted to utilize the lab equipment owned or leased by HPI that is located in our lab space in exchange for paying \$15,000 to HPI each quarter plus a one-time payment of \$20,000. In March 2020, we entered into a consulting agreement, which is terminable on ten days' notice by either party, with HPI pursuant to which HPI will continue to assist us with research and development. Pursuant to the consulting agreement, we made a one-time payment to HPI of \$50,000 and we pay HPI \$43,500 per quarter for services.

In March 2020, we entered into a scientific advisory board member agreement with Dr. Priebe pursuant to which we agreed to pay Dr. Priebe an annual amount of \$68,500.

We currently employ Lindsay Picker, the daughter of Don Picker, our president and chief operating officer, as a clinical research assistant on an at-will basis at an annual salary of \$77,251.

In February 2019, we entered into sublicense agreements with WPD Pharmaceuticals, Inc. and Animal Lifesciences, LLC. Dr. Priebe is affiliated with both WPD Pharmaceuticals, Inc. and Animal Lifesciences, LLC. For more information on the terms of these agreements, please see Item 1 - Business-Our Licensing Agreements in the Form 10-K you received along with this proxy statement. As part of our agreement with WPD Pharmaceuticals, we have the right to appoint a member to the board of directors of WPD Pharmaceuticals. We have appointed Mr. Klemp to serve in such capacity. In addition, Dr. Picker and Dr. Silberman have in the past performed consulting work for WPD Pharmaceuticals.

In August 2018, CNS Pharmaceuticals, Inc. entered into sublicense agreements with WPD Pharmaceuticals, Inc. and Animal Lifesciences, LLC pursuant to which CNS Pharmaceuticals, Inc. licensed the rights to their lead drug candidate, Berubicin, an anthracycline. Mr. Climaco is the chief executive officer of CNS Pharmaceuticals, Inc. and Drs. Picker and Silberman are the part-time chief science officer and chief medical officer for CNS Pharmaceuticals, Inc. In addition, Dr. Picker was previously a director of CNS Pharmaceuticals, Inc. Dr. Priebe is the founder of CNS Pharmaceuticals, Inc.

We have entered, and intend to continue to enter, into separate indemnification agreements with our directors and executive officers, in addition to the indemnification provided for in our amended and restated certificate of incorporation and bylaws. These agreements, among other things, require us to indemnify our directors and executive officers for certain expenses, including attorneys' fees, judgments, fines and settlement amounts incurred by a director or executive officer in any action or proceeding arising out of their services as one of our directors or executive officers or as a director or executive officer of any other company or enterprise to which the person provides services at our request. We believe that these charter provisions and indemnification agreements are necessary to attract and retain qualified persons as directors and officers.

The limitation of liability and indemnification provisions in our amended and restated certificate of incorporation and amended and restated bylaws may discourage stockholders from bringing a lawsuit against directors for breach of their fiduciary duties. They may also reduce the likelihood of derivative litigation against directors and officers, even though an action, if successful, might benefit us and our stockholders. A stockholder's investment may decline in value to the extent we pay the costs of settlement and damage awards against directors and officers pursuant to these indemnification provisions.

Policies and Procedures for Related Party Transactions

Our audit committee charter provides that our audit committee is responsible for reviewing and approving in advance any related party transaction. This will cover, with certain exceptions set forth in Item 404 of Regulation S-K under the Securities Act, any transaction, arrangement or relationship, or any series of similar transactions, arrangements or relationships in which we were or will be a participant to, where the amount involved exceeds \$120,000 and a related person had or will have a direct or indirect material interest, including, without limitation, purchases of goods or services by or from the related person or entities in which the related person has a material interest, indebtedness, guarantees of indebtedness and employment by us of a related person. In determining whether to approve a proposed transaction, our audit committee will consider all relevant facts and circumstances including: (i) the materiality and character of the related party's direct or indirect interest; (ii) the commercial reasonableness of the terms; (iii) the benefit or perceived benefit, or lack thereof, to us; (iv) the opportunity cost of alternate transactions; and (v) the actual or apparent conflict of interest of the related party.

**PROPOSAL 1:
ELECTION OF DIRECTORS**

Our Board of Directors currently consists of five members: Walter V. Klemp, Robert George, John Climaco, Michael Cannon, and Elizabeth Cermak. The Nominating and Governance Committee nominated and the Board approved and recommended all of the current members of our Board for re-election. All nominees have consented to being named herein and have indicated their intention to serve as our directors, if elected. The Board has no reason to believe that any nominee would be unable or unwilling to serve if elected. Unless authority to do so is withheld, the persons named as proxies will vote the shares represented by such proxies for the election of the named director nominees. In case any of the nominees becomes unavailable for election to the Board the persons named as proxies will have full discretion and authority to vote or refrain from voting for any other nominees in accordance with their judgment. The Board nominees, if elected, will serve until the next annual meeting of shareholders or until each successor is duly elected and qualified.

Biographical information for our directors is provided above in the section entitled “Information About Directors and Executive Officers.”

Vote Required and Recommendation of the Board of Directors

A plurality of the eligible votes cast is required to elect director nominees, and as such, the five nominees who receive the greatest number of votes cast by stockholders, entitled to vote at the meeting, will be elected. A nominee who receives a plurality means he or she has received more votes than any other nominee for the same director’s seat. Broker non-votes will have no effect on this proposal. **The Board recommends that stockholders vote FOR each of the five nominees for election to our Board of Directors.**

**PROPOSAL 2:
TO RATIFY THE APPOINTMENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM**

Our Audit Committee has selected Grant Thornton LLP as our independent registered public accounting firm to audit our financial statements for the fiscal year ending December 31, 2021. Our stockholders are being asked to ratify this appointment. In the event that ratification of this selection of auditors is not approved by the stockholders, we will reassess our selection of auditors. Representatives of Grant Thornton LLP are expected to be present at the Annual Meeting, will be available to respond to appropriate questions, and will have the opportunity to make a statement at the Annual Meeting.

Aggregate fees for professional services rendered by Grant Thornton, LLP for their services for the fiscal years ended December 31, 2020 and 2019, respectively, were as follows:

	2020	2019
Audit Fees	\$ 325,200	\$ 346,371
Audit-related fees	—	—
Tax fees	—	—
All other fees	—	—
TOTAL	\$ 325,200	\$ 346,371

Audit Fees

Audit fees represent the aggregate fees billed for professional services rendered by our independent accounting firm for the audit of our annual financial statements, review of financial statements included in our quarterly reports, review of registration statements or services that are normally provided in connection with statutory and regulatory filings or engagements for those fiscal years.

Audit-Related Fees

Audit-related fees represent the aggregate fees billed for assurance and related services that are reasonably related to the performance of the audit or review of our financial statements and are not reported under Audit Fees.

Tax Fees

Tax fees represent the aggregate fees billed for professional services rendered by our principal accountants for tax compliance, tax advice, and tax planning for such years.

All Other Fees

All other fees represent the aggregate fees billed for products and services other than the services reported in the other categories.

Audit Committee Pre-Approval Policies and Procedures

The Audit Committee on an annual basis reviews audit and non-audit services performed by the independent auditors. All audit and non-audit services are pre-approved by the Audit Committee, which considers, among other things, the possible effect of the performance of such services on the auditors' independence.

Vote Required and Recommendation of the Board of Directors

The approval of Proposal 2 requires the affirmative vote of a majority of the shares present in person or by proxy and entitled to vote on the matter. Broker non-votes will not be taken into account in determining the outcome of the proposal, and abstentions will be counted as votes against the proposal. **The Board recommends that stockholders vote FOR the ratification of the appointment of Grant Thornton, LLP as our independent registered public accounting firm for the fiscal year ending December 31, 2021.**

AUDIT COMMITTEE REPORT

The Audit Committee assists the Board of Directors with its oversight responsibilities regarding the Company's financial reporting process. The Company's management is responsible for the preparation, presentation and integrity of the Company's financial statements and the reporting process, including the Company's accounting policies, internal control over financial reporting and disclosure controls and procedures. Grant Thornton LLP, the Company's independent registered public accounting firm, is responsible for performing an audit of the Company's financial statements.

We have reviewed and discussed with management and Grant Thornton LLP the Company's audited financial statements. We discussed with Grant Thornton LLP the overall scope and plans of their audit. We met with Grant Thornton LLP, with and without management present, to discuss the results of its examinations, its evaluation of the Company's internal controls, and the overall quality of the Company's financial reporting.

With regard to the fiscal year ended December 31, 2020, the Audit Committee (i) reviewed and discussed with management the Company's audited financial statements as of December 31, 2020, and for the year then ended; (ii) discussed with Grant Thornton LLP the matters required by Public Company Accounting Oversight Board (PCAOB) and the Securities and Exchange Commission; (iii) received the written disclosures and the letter from Grant Thornton LLP required by applicable requirements of the PCAOB regarding Grant Thornton LLP's communications with the Audit Committee regarding independence; and (iv) discussed with Grant Thornton LLP their independence.

Based on the review and discussions described above, the Audit Committee recommended to the Company's Board of Directors that the Company's audited financial statements be included in the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2020, for filing with the Securities and Exchange Commission.

Robert George (Chairperson)
Michael Cannon
John Climaco
Elizabeth Cermak

AVAILABILITY OF ANNUAL REPORT ON FORM 10-K

A copy of our 2020 Annual Report on Form 10-K has been mailed concurrently with this proxy statement to stockholders entitled to notice of and to vote at the Annual Meeting, provided that we have not included the exhibits to the Form 10-K. We will provide copies of these exhibits without cost upon request by eligible stockholders. Requests for copies of such exhibits should be mailed to Moleculin Biotech, Inc., 5300 Memorial Drive, Suite 950, Houston, TX 77007, Attention: Corporate Secretary.

OTHER PROPOSED ACTION

Our Board of Directors does not intend to bring any other matters before the Annual Meeting, nor does it know of any matters which other persons intend to bring before the Annual Meeting. If, however, other matters not mentioned in this proxy statement properly come before the Annual Meeting, the persons named in the accompanying form of proxy will vote thereon in accordance with the recommendation of the Board of Directors.

HOUSEHOLDING OF PROXY MATERIALS

The SEC has adopted rules that permit companies and intermediaries (e.g., brokers) to satisfy the delivery requirements for proxy materials with respect to two or more stockholders sharing the same address by delivering a single proxy statement addressed to those stockholders. This process, which is commonly referred to as "householding," potentially means extra convenience for stockholders and cost savings for companies.

A number of brokers with account holders who are the Company's stockholders may be "householding" our proxy materials. A single copy of the proxy materials may be delivered to multiple stockholders sharing an address unless contrary instructions have been received from the affected stockholders. Once you have received notice from your broker that they will be householding communications to your address, householding will continue until you are notified otherwise or until you revoke your consent. If, at any time, you no longer wish to participate in householding and would prefer to receive a separate copy of the proxy materials, please (1) notify your broker, or (2) direct your written request to Moleculin Biotech, Inc., 5300 Memorial Drive, Suite 950, Houston, TX 77007, Attention: Corporate Secretary. Stockholders who currently receive multiple copies of the proxy materials at their address and would like to request householding of their communications should contact their brokers. In addition, upon written request to the address set forth above, we will promptly deliver a separate copy of the proxy materials to any stockholder at a shared address to which a single copy of the documents was delivered.

STOCKHOLDER PROPOSALS AND SUBMISSIONS

In order to be eligible for inclusion in our proxy statement and form of proxy for our 2022 Annual Meeting, a proposal of a stockholder, including the submission of a stockholder nominee for election to our Board of Directors, must be received at our principal executive offices located in Houston, Texas no later than December 6, 2021 (the "Deadline"). For any proposal that a stockholder wishes to propose for consideration at the 2022 Annual Meeting but does not wish to include in the proxy materials for that meeting, our Amended and Restated Bylaws require a notice of the proposal to be delivered not less than 120 days prior to the anniversary of the mailing date of our proxy materials for the preceding annual meeting of stockholders. The notice of the proposal also must comply with the content requirements for such notices set forth in our Amended and Restated Bylaws.

Whether or not you expect to be present at the Annual Meeting, please sign and return the enclosed proxy promptly. Your vote is important. If you are a stockholder of record and attend the Annual Meeting and wish to vote in person, you may withdraw your proxy at any time prior to the vote.

By Order of the Board of Directors
MOLECULIN BIOTECH, INC.

/s/ WALTER V. KLEMP

Walter V. Klempe
Chairman of the Board, President and Chief Executive Officer

Houston, Texas
April 1, 2021

MOLECULIN BIOTECH, INC.
5300 MEMORIAL DRIVE, SUITE 950
HOUSTON, TEXAS 77007

VOTE BY INTERNET - www.proxyvote.com

Use the internet to transmit your voting instructions and for electronic delivery of information. Vote by 11:59 P.M. ET on 05/25/2021. 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. Vote by 11:59 P.M. ET on 05/25/2021. Have your proxy card in hand when you call and then follow the instructions.

VOTE BY MAIL

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

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

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

THIS PROXY CARD IS VALID ONLY WHEN SIGNED AND DATED.

<p>The Board of Directors recommends you vote FOR the following:</p> <p>1. Election of Directors</p> <p>Nominees</p> <p>01) Walter V. Klomp 02) Robert George 03) Michael Cannon 04) John Climaco 05) Elizabeth Cernak</p> <p>The Board of Directors recommends you vote FOR proposals 2 and 3.</p> <p>2. To ratify the appointment of Grant Thornton, LLP as the Company's independent registered public accounting firm for the year ending December 31, 2021.</p> <p>3. In their discretion, upon such other matters as may properly come before the meeting.</p>	<p>For All Withhold All For All Except</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p>	<p>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.</p> <p>_____</p>	<p>For Against Abstain</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p>
<p>Please sign exactly as your name(s) appear(s) hereon. When signing as attorney, executor, administrator, or other fiduciary, please give full title as such. Joint owners should each sign personally. All holders must sign. If a corporation or partnership, please sign in full corporate or partnership name by authorized officer.</p>	<p>Signature [PLEASE SIGN WITHIN BOX] Date</p>	<p>Signature (Joint Owners) Date</p>	

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

**MOLECULIN BIOTECH, INC.
Annual Meeting of Stockholders
May 26, 2021 1:30 PM CT
This proxy is solicited by the Board of Directors**

The undersigned stockholder acknowledges receipt of the Notice of Annual Meeting of Stockholders and the Proxy Statement, each dated March 31, 2021, and hereby appoints Walter V. Klemp and Jonathan P. Foster, or either of them, proxies for the undersigned, each with full power of substitution, to vote all of the undersigned's shares of Common Stock of Moleculin Biotech, Inc. (the "Company"), at the Annual Meeting of Stockholders of the Company to be held at 5300 Memorial Drive, Suite 950, Houston, Texas 77007, on May 26, 2021 at 1:30 PM, CT, and at any adjournments or postponements 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.

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Continued and to be signed on reverse side