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

SCHEDULE 14A INFORMATION

**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 under §240.14a-12

AVENUE THERAPEUTICS, 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:

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- (1) Amount Previously Paid:

- (2) Form, Schedule or Registration Statement No.:

- (3) Filing Party:

- (4) Date Filed:

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AVENUE THERAPEUTICS, INC.
2 Gansevoort Street, 9th Floor
New York, New York 10014

Dear Stockholder:

You are cordially invited to the Annual Meeting of Stockholders (the "Annual Meeting") of Avenue Therapeutics, Inc. ("Avenue" or the "Company"), to be held at 2:00 p.m. local time, on Wednesday, June 13, 2018, at the offices of our legal counsel, Alston & Bird LLP, located at 90 Park Avenue, New York, New York 10016. At the meeting, the stockholders will be asked to (i) elect seven directors for a term of one year, (ii) ratify the appointment of BDO USA, LLP as our independent registered public accounting firm for the year ending December 31, 2018, and (iii) approve an amendment to our Third Amended and Restated Certificate of Incorporation to amend the Annual Stock Dividend payment date from February 17 to January 1 of each year. You will also have the opportunity to ask questions and make comments at the meeting.

In accordance with the rules and regulations of the Securities and Exchange Commission, we are furnishing our proxy statement and annual report to stockholders for the year ended December 31, 2017 on the Internet. You may have already received our "Important Notice Regarding the Availability of Proxy Materials," which was mailed on or about April 30, 2018. That notice described how you can obtain our proxy statement and annual report. You can also receive paper copies of our proxy statement and annual report upon request.

It is important that your stock be represented at the meeting regardless of the number of shares you hold. You are encouraged to specify your voting preferences by marking our proxy card and returning it as directed. If you do attend the meeting and wish to vote in person, you may revoke your proxy at the meeting.

If you have any questions about the proxy statement or the accompanying 2017 Annual Report, please contact Joseph Vazzano, our Vice President, Finance and Accounting at (781) 652-4500.

We look forward to seeing you at the Annual Meeting.

Sincerely,

A handwritten signature in black ink, appearing to read "Lucy Lu".

Lucy Lu, M.D.
President, Chief Executive Officer and Director
April 30, 2018
New York, New York



AVENUE THERAPEUTICS, INC.
2 Gansevoort Street, 9th Floor
New York, New York 10014

NOTICE OF ANNUAL MEETING OF STOCKHOLDERS

The Annual Meeting of Stockholders of Avenue Therapeutics, Inc. will be held at the offices of our legal counsel, Alston & Bird LLP, located at 90 Park Avenue, New York, New York 10016, on Wednesday, June 13, 2018, at 2:00 p.m., local time. At the meeting, stockholders will consider and act on the following items:

1. Elect seven directors for a term of one year;
2. Ratify the appointment of BDO USA, LLP as our independent registered public accounting firm for the year ending December 31, 2018;
3. Approve an amendment to our Third Amended and Restated Certificate of Incorporation to amend the Annual Stock Dividend payment date from February 17 to January 1 of each year; and
4. Transact any other business that may properly come before the Annual Meeting or any adjournment of the Annual Meeting.

Only those stockholders of record as of the close of business on April 16, 2018, are entitled to vote at the Annual Meeting or any postponements or adjournments thereof. A complete list of stockholders entitled to vote at the Annual Meeting will be available for your inspection beginning June 1, 2018, at our offices located at 2 Gansevoort Street, New York, New York 10014, between the hours of 10:00 a.m. and 5:00 p.m., local time, each business day.

YOUR VOTE IS IMPORTANT!

Instructions on how to vote your shares via the Internet are contained on the "Important Notice Regarding the Availability of Proxy Materials," which was mailed on or about April 30, 2017. Instructions on how to obtain a paper copy of our proxy statement and annual report to stockholders for the year ended December 31, 2017 are listed on the "Important Notice Regarding the Availability of Proxy Materials." These materials can also be viewed online by following the instructions listed on the "Important Notice Regarding the Availability of Proxy Materials."

If you choose to receive a paper copy of our proxy statement and annual report, you may vote your shares by completing and returning the proxy card that will be enclosed.

Submitting your proxy does not affect your right to vote in person if you decide to attend the Annual Meeting. You are urged to submit your proxy as soon as possible, regardless of whether or not you expect to attend the Annual Meeting. You may revoke your proxy at any time before it is voted at the Annual Meeting by (i) delivering written notice to our Corporate Secretary, Joseph Vazzano, at our address above, (ii) submitting a later dated proxy card, (iii) voting again via the Internet as described in the "Important Notice Regarding the Availability of Proxy Materials," or (iv) attending the Annual Meeting and voting in person. No revocation under (i) or (ii) will be effective unless written notice or the proxy card is received by our Corporate Secretary at or before the Annual Meeting.

When you submit your proxy, you authorize Lucy Lu, M.D., and Joseph Vazzano to vote your shares at the Annual Meeting and on any adjournments of the Annual Meeting in accordance with your instructions.

By Order of the Board of Directors,



Joseph Vazzano
Corporate Secretary
April 30, 2018
New York, New York

AVENUE THERAPEUTICS, INC.
2 Gansevoort Street, 9th Floor
New York, New York 10014
Phone: (781) 652-4500
Fax: (646) 619-4950

PROXY STATEMENT

This proxy statement is being made available via Internet access, beginning on or about April 30, 2018, to the owners of shares of common stock of Avenue Therapeutics, Inc. (the “Company,” “our,” “we,” or “Avenue”) as of April 16, 2018, in connection with the solicitation of proxies by our Board of Directors for our 2018 Annual Meeting of Stockholders (the “Annual Meeting”). On or about April 30, 2018, we sent an “Important Notice Regarding the Availability of Proxy Materials” to our stockholders. If you received this notice by mail, you will not automatically receive by mail our proxy statement and annual report to stockholders for the year ended December 31, 2017. If you would like to receive a printed copy of our proxy statement, annual report and proxy card, please follow the instructions for requesting such materials in the notice. Upon request, we will promptly mail you paper copies of such materials free of charge.

The Annual Meeting will take place at the offices of our legal counsel, Alston & Bird LLP, located at 90 Park Avenue, New York, New York 10016 on Wednesday, June 13, 2018, at 2:00 p.m., local time. Our Board of Directors encourages you to read this document thoroughly and take this opportunity to vote, via proxy, on the matters to be decided at the Annual Meeting. As discussed below, you may revoke your proxy at any time before your shares are voted at the Annual Meeting.



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QUESTIONS AND ANSWERS

Q: *Why did I receive an “Important Notice Regarding the Availability of Proxy Materials”?*

- A. In accordance with Securities and Exchange Commission (“SEC”) rules, instead of mailing a printed copy of our proxy materials, we may send an “Important Notice Regarding the Availability of Proxy Materials” to stockholders. All stockholders will have the ability to access the proxy materials on a website referred to in the notice or to request a printed set of these materials at no charge. You will not receive a printed copy of the proxy materials unless you specifically request one from us. Instead, the notice instructs you as to how you may access and review all of the important information contained in the proxy materials via the Internet and submit your vote via the Internet.

Q: *What is the purpose of the Annual Meeting?*

- A. At the Annual Meeting, our stockholders will act upon the matters outlined in the Notice of Annual Meeting of Stockholders accompanying this proxy statement, including (i) the election of seven directors for a term of one year, (ii) ratifying the appointment of BDO USA, LLP as our independent registered public accounting firm for the year ending December 31, 2018, (iii) amend the Annual Stock Dividend payment date from February 17 to January 1 of each year, and (iv) transacting any other business that may properly come before the 2018 Annual Meeting or any adjournment thereof.

Q: *Who is entitled to vote at our Annual Meeting?*

- A. The record holders of our common stock at the close of business on the record date, April 16, 2018, may vote at the Annual Meeting. Each share of common stock is entitled to one vote. There were 10,553,045 shares of common stock and 250,000 shares of Class A Preferred Stock outstanding on the record date and entitled to vote at the Annual Meeting. A list of stockholders entitled to vote at the Annual Meeting, including the address of and number of shares held by each stockholder of record, will be available for your inspection beginning June 1, 2018, at our offices located at 2 Gansevoort Street, New York, New York 10014, between the hours of 10:00 a.m. and 5:00 p.m., local time, each business day.

Stockholders of Record: Shares Registered in Your Name. If on the Record Date your shares were registered directly in your name with our transfer agent, VStock Transfer, LLC, then you are a stockholder of record. As a stockholder of record, you may vote in person at the Annual Meeting or vote by proxy. Whether or not you plan to attend the Annual Meeting, we urge you to fill out and return the enclosed proxy card, to ensure your vote is counted.

Beneficial Owner: Shares Registered in the Name of a Broker, Bank, Custodian or Other Nominee. If on the Record Date your shares were held in an account at a brokerage firm, bank, custodian or other nominee, then you are the beneficial owner of shares held in “street name” and these proxy materials are being forwarded to you by that organization. The organization holding your account is considered the stockholder of record for purposes of voting at the Annual Meeting. As a beneficial owner, you have the right to direct your broker, bank, custodian or other nominee on how to vote the shares in your account. You are also invited to attend the Annual Meeting. However, because you are not the stockholder of record, you may not vote your shares in person at the Annual Meeting unless you request and obtain a valid proxy from your broker, bank, custodian or other nominee.

Q: *How do I vote?*

- A. You may vote in person at the Annual Meeting, by use of a proxy card if you receive a printed copy of our proxy materials, via Internet as directed in our “Important Notice Regarding the Availability of Proxy Materials,” or by telephone as indicated in the proxy card.

Q: *What is a proxy?*

- A. A proxy is a person you appoint to vote your shares on your behalf. If you are unable to attend the Annual Meeting, our Board of Directors is seeking your appointment of a proxy so that your shares

may be voted. If you vote by proxy, you will be designating Lucy Lu, M.D., our President and Chief Executive Officer, and Joseph Vazzano, our Vice President, Finance and Accounting, as your proxies. Dr. Lu and/or Mr. Vazzano may act on your behalf and have the authority to appoint a substitute to act as your proxy.

Q: How will my shares be voted if I vote by proxy?

- A. Your proxy will be voted according to the instructions you provide. If you complete and submit your proxy but do not otherwise provide instructions on how to vote your shares, your shares will be voted (i) “FOR” the individuals nominated to serve as members of our Board of Directors, (ii) “FOR” the ratification of BDO USA, LLP as our independent registered public accounting firm for the year ending December 31, 2018, and (iii) “FOR” the approval of amending the Annual Stock Dividend payment date from February 17 to January 1 of each year. Presently, our Board does not know of any other matter that may come before the Annual Meeting. However, your proxies are authorized to vote on your behalf, using their discretion, on any other business that properly comes before the Annual Meeting.

Q: How do I revoke my proxy?

- A. You may revoke your proxy at any time before your shares are voted at the Annual Meeting by:
- delivering written notice to our Corporate Secretary, Joseph Vazzano, at our address above;
 - submitting a later dated proxy card or voting again via the Internet as described in the “Important Notice Regarding the Availability of Proxy Materials”; or
 - attending the Annual Meeting and voting in person.

Q: Is my vote confidential?

- A. Yes. All votes remain confidential.

Q: How are votes counted?

- A. Before the Annual Meeting, our Board of Directors will appoint one or more inspectors of election for the meeting. The inspector(s) will determine the number of shares represented at the meeting, the existence of a quorum and the validity and effect of proxies. The inspector(s) will also receive, count, and tabulate ballots and votes and determine the results of the voting on each matter that comes before the Annual Meeting. Broker non-votes occur when shares are held indirectly through a broker, bank or other intermediary on behalf of a beneficial owner (referred to as held in “street name”) and the broker submits a proxy but does not vote for a matter because the broker has not received voting instructions from the beneficial owner and (i) the broker does not have discretionary voting authority on the matter or (ii) the broker chooses not to vote on a matter for which it has discretionary voting authority. Under the rules of the New York Stock Exchange (the “NYSE”) which govern voting matters at the Annual Meeting, brokers are permitted to exercise discretionary voting authority only on “routine” matters when voting instructions have not been timely received from a beneficial owner.
- Under NYSE rules the following matters are considered to be “routine” matters: (i) the ratification of BDO USA, LLP as our independent registered public accounting firm for the year ending December 31, 2018 and (ii) the approval of an amendment to our Third Amended and Restated Certificate of Incorporation to amend the Annual Stock Dividend payment date from February 17 to January 1 of each year. Brokers that hold your shares therefore have discretionary authority to vote your shares without receiving instructions from you on such matters.

Q: What constitutes a quorum at the Annual Meeting?

- A. In accordance with Delaware law (the law under which we are incorporated) and our Bylaws, the presence at the Annual Meeting, by proxy or in person, of the holders of a majority of the outstanding shares of the capital stock entitled to vote at the Annual Meeting constitutes a quorum, thereby

permitting the stockholders to conduct business at the Annual Meeting. Abstentions, votes withheld, and broker or nominee non-votes will be included in the calculation of the number of shares considered present at the Annual Meeting for purposes of determining the existence of a quorum.

If a quorum is not present at the Annual Meeting, a majority of the stockholders present in person and by proxy may adjourn the meeting to another date. If an adjournment is for more than 30 days or a new record date is fixed for the adjourned meeting by our Board, we will provide notice of the adjourned meeting to each stockholder of record entitled to vote at the adjourned meeting. At any adjourned meeting at which a quorum is present, any business may be transacted that might have been transacted at the originally called meeting.

Q: What vote is required to elect our directors for a one-year term?

- A. The affirmative vote of a plurality of the votes of the shares present, in person or by proxy, at the Annual Meeting is required for the election of each of the nominees for director. “Plurality” means that the nominees receiving the largest number of votes up to the number of directors to be elected at the Annual Meeting will be duly elected as directors. Abstentions, votes withheld, and broker or nominee non-votes will not affect the outcome of director elections; provided, however, our Class A Preferred Stock has the right to elect a majority of our directors.

Q: What vote is required to ratify BDO USA, LLP as our independent registered public accounting firm for the year ending December 31, 2018?

- B. The affirmative vote of a majority of the shares present, in person or by proxy, and entitled to vote at the Annual Meeting is required to approve the ratification of BDO USA, LLP as our independent registered public accounting firm for the year ending December 31, 2018. Abstentions will have the same effect as a negative vote. However, broker non-votes, if any, as this is a “routine” matter under NYSE rules, will not have the effect of a vote against this proposal as they are not considered to be present and entitled to vote on this matter and, therefore, have no effect on the result of this vote (see “How are Votes Counted?” above).

Q: What vote is required to amend our Third Amended and Restated Certificate of Incorporation to amend the Annual Stock Dividend payment date from February 17 to January 1 of each year?

- A. The affirmative vote of a majority of our common stock outstanding is required to approve the amendment to our Third Amended and Restated Certificate of Incorporation. The effect of an abstention or a broker non-vote, if any, as this is a “routine” matter under NYSE rules, is the same as that of a vote against the proposal (see “How are Votes Counted?” above).

Q: What percentage of our outstanding common stock do our directors, executive officers, and 5% beneficial owners own?

- A. As of April 16, 2018, our directors, executive officers, and 5% beneficial owners owned, or have the right to acquire, approximately 46% of our outstanding common stock and 100% of our Class A Preferred Stock. See the discussion under the heading “Stock Ownership of Our Directors, Executive Officers, and 5% Beneficial Owners” on page 25 for more details.

Q: Who was our independent public accountant for the year ending December 31, 2017? Will they be represented at the Annual Meeting?

- A. BDO USA, LLP is the independent registered public accounting firm that audited our financial statements for the year ending December 31, 2017. We expect a representative of BDO USA, LLP to be present at the Annual Meeting. The representative will have an opportunity to make a statement and will be available to answer your questions.

Q: How can I obtain a copy of our annual report on Form 10-K?

- A. We have filed our annual report on Form 10-K for the year ended December 31, 2017, with the SEC. The annual report on Form 10-K is also included in the 2017 Annual Report to Stockholders. **You may obtain, free of charge, a copy of our annual report on Form 10-K, including financial statements, by writing to our Corporate Secretary, Joseph Vazzano, or by email at info@avenuetx.com. Upon request, we will also furnish any exhibits to the annual report on Form 10-K as filed with the SEC.**

CORPORATE GOVERNANCE

Our Board of Directors

Our bylaws provide that our Board shall consist of between one to nine directors, and such number of directors within this range may be determined from time to time by resolution of our board of directors or our stockholders. Currently, we have seven directors. The following individuals are being nominated to serve on our Board (See “Proposal 1 — Election of Directors; Nominees”):

Name	Age	Position	Director Since
Lindsay A. Rosenwald, M.D.	62	Chairman of the Board of Directors	2015
Lucy Lu, M.D.	43	President, Chief Executive Officer, and Director	2015
Neil Herskowitz	61	Director	2015
Jay Kranzler, M.D., PhD	60	Director	2017
Jeffrey Paley, M.D.	50	Director	2015
Akhtar Samad, M.D., PhD	58	Director	2015
Michael S. Weiss	52	Director	2015

The Board does not have a formal policy regarding the separation of the roles of Chief Executive Officer and Chairman, as the Board believes that it is in the best interests of the Company to make that determination based on the direction of the Company and the current membership of the Board. The Board has determined that at present having Dr. Rosenwald serve as Executive Chairman is in the best interest of the Company’s stockholders.

Avenue has a risk management program overseen by Lucy Lu, M.D., our President and Chief Executive Officer, and the Board. Dr. Lu and management identify material risks and prioritize them for our Board. Our Board regularly reviews information regarding our credit, liquidity, operations, and compliance as well as the risks associated with each.

The following biographies set forth the names of our directors and director nominees, their ages, the year in which they first became directors, their positions with us, their principal occupations and employers for at least the past five years, any other directorships held by them during the past five years in companies that are subject to the reporting requirements of the Securities Exchange Act of 1934 (the “Exchange Act”), or any company registered as an investment company under the Investment Company Act of 1940, as well as additional information, all of which we believe sets forth each director nominee’s qualifications to serve on the Board. There is no family relationship between and among any of our executive officers or directors. There are no arrangements or understandings between any of our executive officers or directors and any other person pursuant to which any of them are elected as an officer or director, except as disclosed below.

Avenue adheres to the corporate governance standards adopted by The Nasdaq Stock Market (“Nasdaq”). Nasdaq rules require our Board to make an affirmative determination as to the independence of each director. Consistent with these rules, our Board undertook its annual review of director independence on March 23, 2018. During the review, our Board considered relationships and transactions during 2017 and since inception between each director or any member of his immediate family, on the one hand, and the Company and our subsidiaries and affiliates, on the other hand. The purpose of this review was to determine whether any such relationships or transactions were inconsistent with a determination that the director is independent. Based on this review, our Board determined that Neil Herskowitz, Jay Kranzler, M.D., Jeff Paley, M.D. and Akhtar Samad, M.D. are independent under the criteria established by Nasdaq and our Board.

Lindsay A. Rosenwald, M.D. — Executive Chairman of the Board of Directors

Dr. Rosenwald has served as our Executive Chairman of the Board of Directors since inception. Dr. Rosenwald also serves as Chairman, President and Chief Executive Officer of Fortress Biotech, Inc., a director of Mustang Bio, Inc., and a director of Checkpoint Therapeutics, Inc. Since November 2008, Dr. Rosenwald has served as Co-Portfolio Manager and Partner of Opus Point Partners Management, LLC

(“Opus Point”), an asset management firm in the life sciences industry, which he joined in 2009. Prior to that, from 1991 to 2008, he served as the Chairman of Paramount BioCapital, Inc. Over the last 23 years, Dr. Rosenwald has acted as a biotechnology entrepreneur and has been involved in the founding and recapitalization of numerous public and private biotechnology and life sciences companies. Dr. Rosenwald received his B.S. in finance from Pennsylvania State University and his M.D. from Temple University School of Medicine.

Lucy Lu, M.D. — President, Chief Executive Officer, and Director

Dr. Lu has been our President and Chief Executive Officer since inception. From February 2012 to June 2017, Dr. Lu was the Executive Vice President and Chief Financial Officer of Fortress Biotech, Inc. Prior to working in the biotech industry, Dr. Lu had 10 years of experience in healthcare-related equity research and investment banking. From February 2007 through January 2012, Dr. Lu was a senior biotechnology equity analyst with Citigroup Investment Research. From 2004 until joining Citigroup, she was with First Albany Capital, serving as Vice President from April 2004 until becoming a Principal of the firm in February 2006. Dr. Lu holds an M.D. degree from the New York University School of Medicine and an M.B.A. from the Leonard N. Stern School of Business at New York University. Dr. Lu obtained a B.A. from the University of Tennessee’s College of Arts and Science.

Neil Herskowitz

Mr. Herskowitz joined our Board of Directors in August 2015 and has served as the Chairman of our Audit Committee since September 2016. Mr. Herskowitz has served as the managing member of the ReGen Group of companies, located in New York, since 1998, which include ReGen Capital Investments LLC and Riverside Claims Investments LLC. He has also served as the President of its affiliate, Riverside Claims LLC, since June 2004. Mr. Herskowitz received a B.B.A. in Finance from Bernard M. Baruch College in 1978.

Jay Kranzler, M.D., PhD

Dr. Kranzler joined our Board of Directors in February 2017. Dr. Kranzler has been a Founder, CEO, Board Member, and Advisor to leading life science companies for over 30 years. He is currently acting as Chief Executive Officer of Regenation, a regenerative medicine company, and is a Board Member of Methylation Sciences, Pastorius, and ImmunoBrain Checkpoint, all companies focused on developing therapeutics for psychiatric or neurological disorders. Dr. Kranzler started his career at McKinsey & Company where he established the Firm’s pharmaceutical practice. He served as Chief Executive Officer (CEO) of Cytel Corporation, a company focused on the development of immunomodulatory drugs. Following Cytel, Dr. Kranzler became the CEO of Cypress Bioscience, where he was credited for the development of Savella™ (milnacipran) for the treatment of fibromyalgia. Dr. Kranzler was also Vice President, Head of External R&D Innovation and Worldwide R&D Strategic Investments at Pfizer. During his career, Dr. Kranzler has developed drugs, medical devices, as well as diagnostics, and is the inventor on over 30 patents. Dr. Kranzler graduated from Yale University School of Medicine with MD and PhD degrees with a focus in psychopharmacology.

Jeffrey Paley, M.D.

Dr. Paley joined our Board of Directors in December 2015. Dr. Jeffrey Paley has been an Active Clinician and Consultant in the healthcare industry for the past 18 years, during which time Dr. Paley has consulted for over 30 analysts and portfolio managers in the biotechnology, pharmaceutical, specialty pharmaceutical and medical technology arenas, reviewing the clinical, preclinical and regulatory pedigrees of numerous therapeutics and devices. Prior to his work for the buy-side, Dr. Paley consulted directly for several biotechnology and specialty pharmaceutical companies. Dr. Paley founded Access Medical Associates in 2003, after spending five years on the full-time academic faculty of Weill Cornell Medical College, where he served as a Director of Clinical Research at the Cornell Internal Medicine Associates. At Weill Cornell, Dr. Paley was a Principal or Co-Principal Investigator on several studies of diabetes, hypertension, and cholesterol disorders, including the landmark ACCORD study of intensive hyperglycemia, hypertension and hyperlipidemia management. He has served as a Director of Kellbenx,

Retrophin and Remote Radiology Inc., and currently serves as a Director of Caelum Biosciences, Immune Pharmaceuticals and Kalytera Therapeutics. Dr. Paley trained at Harvard Medical School and completed a residency in Internal Medicine at Massachusetts General Hospital.

Akhtar Samad, M.D., PhD

Dr. Samad joined our Board of Directors in December 2015. Dr. Samad established Symbios Partners in 2008 to address what he perceived as an unmet need in the advisory space – a hybrid strategic advisory and IR consultancy, offering a variety of proprietary services across such areas as clinical and business development, investment thesis and positioning, market intelligence, investor/analyst outreach and financing strategies. He works closely with senior members of client management teams, including CEO, CBO, CMO/CSO, CFO and Director of Communications, to formulate and revise client corporate strategy. Prior to launching Symbios, Dr. Samad was a Managing Director at Bear Stearns where he directed the small/mid-cap biotechnology equity research team from 2000-2008. He is a former academic cancer and genomics researcher, who trained with the co-discoverer of VEGF at Harvard, and completed his medical residency and fellowship at Cornell and the National Cancer Institute. He has been an invited moderator at the Annual Cancer Progress Conferences, and has moderated other oncology and genomics conferences. He received his MD/PhD training at NYU Medical School.

Michael S. Weiss

Mr. Weiss has served as a member of our Board of Directors since February 2015. Mr. Weiss also serves as a director and Executive Vice Chairman, Strategic Development of Fortress Biotech, Inc., Chairman of the Board of Directors and Executive Chairman of Mustang Bio, Inc., Chairman of the Board of Directors of Checkpoint Therapeutics, Inc., and Chairman of the Board of Directors of National Holdings Corporation. Additionally, he serves as Executive Chairman, President and Chief Executive Officer of TG Therapeutics, Inc., a company he founded in 2011. Mr. Weiss is currently Co-Portfolio Manager and Partner of Opus Point Partners, LLC, which he co-founded in 2009. From 2002 to 2009, Mr. Weiss was the Chairman and Chief Executive Officer of Keryx Biopharmaceuticals, Inc., where he helped the company acquire and develop its lead drug, Auryxia, as well as executed a strategic alliance for Auryxia with Japan Tobacco, Inc. and Torii Pharmaceutical Co., Ltd. worth more than \$100 million. Mr. Weiss served as Chairman of the board of directors of National Holdings Corporation from 2011 to 2012. Mr. Weiss began his professional career as a lawyer with Cravath, Swaine & Moore LLP. He earned his J.D. from Columbia Law School and his B.S. in Finance from The University at Albany.

During 2017, our Board held two meetings and took three actions by unanimous written consent. During 2017, each incumbent director who served their full term and are standing for election attended the meeting of the Board of Directors and the meetings of those committees on which each incumbent director served, in each case during the period that such person was a director. The permanent committees established by our Board of Directors are the Audit Committee and the Compensation Committee, descriptions of which are set forth in more detail below. Our directors are expected to attend each Annual Meeting of Stockholders, and it is our expectation that all of the directors standing for election will attend this year's Annual Meeting. This will be our first Annual Meeting of Stockholders since we became a public reporting company in June 2017.

Communicating with the Board of Directors

Our Board has established a process by which stockholders can send communications to the Board. You may communicate with the Board as a group, or to specific directors, by writing to Joseph Vazzano, our Corporate Secretary, at our offices located at 2 Gansevoort Street, 9th Floor, New York, NY 10014. The Corporate Secretary will review all such correspondence and regularly forward to our Board a summary of all correspondence and copies of all correspondence that, in the opinion of the Corporate Secretary, deals with the functions of the Board or committees thereof or that he otherwise determines requires their attention. Directors may at any time review a log of all correspondence we receive that is addressed to members of our Board and request copies of any such correspondence. Concerns relating to accounting, internal controls, or auditing matters may be communicated in this manner, or may be submitted on an anonymous basis via e-mail at BOD@avenuetx.com. These concerns will be immediately brought to the attention of our Board and handled in accordance with procedures established by our Board.

Audit Committee

The Audit Committee currently consists of Neil Herskowitz, Jeffrey Paley, M.D. and Akhtar Samad, M.D., Ph.D. Mr. Herskowitz serves as the Chairperson of the Audit Committee.

The Audit Committee was formed on May 15, 2017 and held two meetings during the fiscal year ended December 31, 2017. The duties and responsibilities of the Audit Committee are set forth in the Charter of the Audit Committee which was recently reviewed by our Audit Committee. Our Audit Committee determined that no revisions needed to be made to the charter at this time. A copy of the Charter of the Audit Committee is available on our website, located at www.avenuetx.com. Among other matters, the duties and responsibilities of the Audit Committee include reviewing and monitoring our financial statements and internal accounting procedures, the selection of our independent registered public accounting firm and consulting with and reviewing the services provided by our independent registered public accounting firm. Our Audit Committee has sole discretion over the retention, compensation, evaluation and oversight of our independent registered public accounting firm.

The SEC and Nasdaq have established rules and regulations regarding the composition of audit committees and the qualifications of audit committee members. Our Board of Directors has examined the composition of our Audit Committee and the qualifications of our Audit Committee members in light of the current rules and regulations governing audit committees. Based upon this examination, our Board of Directors has determined that each member of our Audit Committee is independent and is otherwise qualified to be a member of our Audit Committee in accordance with the rules of the SEC and Nasdaq.

Additionally, the SEC requires that at least one member of the Audit Committee have a “heightened” level of financial and accounting sophistication. Such a person is known as the “audit committee financial expert” under the SEC’s rules. Our Board has determined that Neil Herskowitz is an “audit committee financial expert,” as the SEC defines that term, and is an independent member of our Board of Directors and our Audit Committee. Please see Neil Herskowitz’s biography on page 6 for a description of his relevant experience.

The report of the Audit Committee can be found on page 13 of this proxy statement.

Compensation Committee

The Compensation Committee was formed on May 15, 2017 and did not hold any meetings during the fiscal year ended December 31, 2017. The Compensation Committee currently consists of Jay Kranzler, M.D., Jeffrey Paley, M.D. and Akhtar Samad, M.D., Ph.D., with Jay Kranzler, M.D. as chairman. The duties and responsibilities of the Compensation Committee are set forth in the Charter of the Compensation Committee. A copy of the Charter of the Compensation Committee is available on our website, located at www.avenuetx.com. As discussed in its charter, among other things, the duties and responsibilities of the Compensation Committee include annually reviewing and approving corporate goals and objectives relevant to the compensation of our Chief Executive Officer, reviewing and approving, or making recommendations to our Board of Directors with respect to, the compensation of our Chief Executive Officer and our other executive officers, overseeing and the evaluation of our senior executives, and overseeing and administering our cash and equity incentive plans. The Compensation Committee applies discretion in the determination of individual executive compensation packages to ensure compliance with the Company’s compensation philosophy. The Chief Executive Officer makes recommendations to the Compensation Committee with respect to the compensation packages for officers other than herself. The Compensation Committee may delegate its authority to grant awards to certain employees, and within specified parameters under the Company’s 2015 Incentive Plan, to a special committee consisting of one or more directors who may but need not be officers of the Company. As of April 16, 2018, however, the Compensation Committee had not delegated any such authority. The Board may engage a compensation consultant to conduct a review of its executive compensation programs in 2018. The Committee did not engage a compensation consultant in 2017.

Nasdaq has established rules and regulations regarding the composition of compensation committees and the qualifications of compensation committee members. Our Board of Directors has examined the composition of our Compensation Committee and the qualifications of our Compensation Committee

members in light of the current rules and regulations governing compensation committees. Based upon this examination, our Board of Directors has determined that each member of our Compensation Committee is independent and is otherwise qualified to be a member of our Compensation Committee in accordance with such rules.

Nominating Process

We do not currently have a nominating committee or any other committee serving a similar function. Director nominations are approved by a vote of a majority of our independent directors as required under the Nasdaq rules and regulations. Although we do not have a written charter in place to select director nominees, our Board of Directors has adopted resolutions regarding the director nomination process. We believe that the current process in place functions effectively to select director nominees who will be valuable members of our Board of Directors.

We identify potential nominees to serve as directors through a variety of business contacts, including current executive officers, directors, community leaders and stockholders. We may, to the extent they deem appropriate, retain a professional search firm and other advisors to identify potential nominees.

We will also consider candidates recommended by stockholders for nomination to our Board. A stockholder who wishes to recommend a candidate for nomination to our Board must submit such recommendation to our Corporate Secretary, Joseph Vazzano, at our offices located at 2 Gansevoort Street, 9th Floor, New York, New York 10014. Any recommendation must be received not less than 50 calendar days nor more than 90 calendar days before the anniversary date of the previous year's annual meeting. All stockholder recommendations of candidates for nomination for election to our Board must be in writing and must set forth the following: (i) the candidate's name, age, business address, and other contact information, (ii) the number of shares of common stock beneficially owned by the candidate, (iii) a complete description of the candidate's qualifications, experience, background and affiliations, as would be required to be disclosed in the proxy statement pursuant to Schedule 14A under the Exchange Act, (iv) a sworn or certified statement by the candidate in which he or she consents to being named in the proxy statement as a nominee and to serve as director if elected, and (v) the name and address of the stockholder(s) of record making such a recommendation.

We believe that our Board as a whole should encompass a range of talent, skill, and expertise enabling it to provide sound guidance with respect to our operations and interests. Our independent directors evaluate all candidates to our Board by reviewing their biographical information and qualifications. If the independent directors determine that a candidate is qualified to serve on our Board, such candidate is interviewed by at least one of the independent directors and our Chief Executive Officer. Other members of the Board also have an opportunity to interview qualified candidates. The independent directors then determine, based on the background information and the information obtained in the interviews, whether to recommend to the Board that the candidate be nominated for approval by the stockholders to fill a directorship. With respect to an incumbent director whom the independent directors are considering as a potential nominee for re-election, the independent directors review and consider the incumbent director's service during his or her term, including the number of meetings attended, level of participation, and overall contribution to the Board. The manner in which the independent directors evaluate a potential nominee will not differ based on whether the candidate is recommended by our directors or stockholders.

We consider the following qualifications, among others, when making a determination as to whether a person should be nominated to our Board: the independence of the director nominee; the nominee's character and integrity; financial literacy; level of education and business experience, including experience relating to biopharmaceutical companies; whether the nominee has sufficient time to devote to our Board; and the nominee's commitment to represent the long-term interests of our stockholders. We review candidates in the context of the current composition of the Board and the evolving needs of our business. We believe that each of the current members of our Board (who are also our director nominees) has the requisite business, biopharmaceutical, financial or managerial experience to serve as a member of the Board, as described above in their biographies under the heading "Our Board of Directors." We also believe that each of the current members of our Board has other key attributes that are important to an effective board, including integrity, high ethical standards, sound judgment, analytical skills, and the commitment to devote significant time and energy to service on the Board and its committees.

We do not have a formal policy in place with regard to diversity in considering candidates for our Board, but the Board strives to nominate candidates with a variety of complementary skills so that, as a group, the Board will possess the appropriate talent, skills and expertise to oversee our business.

Code of Business Conduct and Ethics

We have adopted a Code of Ethics, or the Code, which applies to all of our directors and employees, including our principal executive officer and principal financial officer. The Code includes guidelines dealing with the ethical handling of conflicts of interest, compliance with federal and state laws, financial reporting, and our proprietary information. The Code also contains procedures for dealing with and reporting violations of the Code. We have posted our Code of Ethics on our website, located at www.avenuetx.com.

INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM FEES AND OTHER MATTERS

BDO USA, LLP, the independent registered public accounting firm that audited our financial statements for the years ended December 31, 2017 and 2016 has served as our independent registered public accounting firm since 2016. We expect a representative of BDO USA, LLP to be present at the Annual Meeting. The representative will have an opportunity to make a statement and will be available to answer your questions.

Our Board has asked the stockholders to ratify the selection of BDO USA, LLP as our independent registered public accounting firm. See “Proposal Two: Ratification of Appointment of BDO USA, LLP as Our Independent Registered Public Accounting Firm” on page 27 of this proxy statement. The Board has reviewed the fees described below and concluded that the payment of such fees is compatible with maintaining BDO USA, LLP’s independence. All proposed engagements of BDO USA, LLP, whether for audit services, audit-related services, tax services, or permissible non-audit services, were pre-approved by our Audit Committee.

Audit Fees

For the fiscal years ended December 31, 2017 and 2016, BDO USA, LLP billed us an aggregate of \$286,500 and \$135,000 respectively, in fees for the professional services rendered in connection with the audit of our annual financial statements included in our Annual Report on Form 10-K and Form 10 for those two fiscal years, the review of our financial statements included in our Quarterly Reports on Form 10-Q during those two fiscal years, and other services provided in connection with registration statements.

Audit-Related Fees

During the fiscal years ended December 31, 2017 and 2016, we were not billed by BDO USA, LLP for any fees for audit-related services reasonably related to the performance of the audits and reviews for those two fiscal years, in addition to the fees described above under the heading “Audit Fees.”

Tax Fees

During the fiscal years ended December 31, 2017 and 2016, we were not billed by BDO USA, LLP for any fees for professional services rendered for tax compliance, tax advice, and tax planning services.

All Other Fees

During the fiscal years ended December 31, 2017 and 2016, we were not billed by BDO USA, LLP for any fees for services, other than those described above, rendered to us for those two fiscal years.

Pre-Approval of Services

Our Audit Committee has established a policy setting forth the procedures under which services provided by our independent registered public accounting firm will be pre-approved by our Audit Committee. The potential services that might be provided by our independent registered public accounting firm fall into two categories:

- Services that are permitted, including the audit of our annual financial statements, the review of our quarterly financial statements, related attestations, benefit plan audits and similar audit reports, financial and other due diligence on acquisitions, and federal, state, and non-US tax services; and
- Services that may be permitted, subject to individual pre-approval, including compliance and internal-control reviews, indirect tax services such as transfer pricing and customs and duties, and forensic auditing.

Services that our independent registered public accounting firm may not legally provide include such services as bookkeeping, certain human resources services, internal audit outsourcing, and investment or investment banking advice.

All proposed engagements of our independent registered public accounting firm, whether for audit services or permissible non-audit services, are pre-approved by the Audit Committee. We jointly prepare a schedule with our independent registered public accounting firm that outlines services which we reasonably expect we will need from our independent registered public accounting firm, and categorize them according to the classifications described above. Each service identified is reviewed and approved or rejected by the Audit Committee.

REPORT OF THE AUDIT COMMITTEE

In monitoring the preparation of our financial statements, the Audit Committee met with both management and BDO USA, LLP, our independent registered public accounting firm for the year ended December 31, 2017, to review and discuss all financial statements prior to their issuance and to discuss any and all significant accounting issues. Management and our independent registered public accounting firm advised the Audit Committee that each of the financial statements were prepared in accordance with generally accepted accounting principles. The Audit Committee's review included a discussion of the matters required to be discussed pursuant to Auditing Standard No. 1301, *Communications with Audit Committees*, issued by the Public Company Accounting Oversight Board ("PCAOB"). Auditing Standard No. 1301 required our independent registered public accounting firm to discuss with the Audit Committee, among other things, the following:

- Methods used to account for significant or unusual transactions;
- The effect of any accounting policies in controversial or emerging areas for which there is a lack of authoritative guidance or consensus;
- The process used by management to formulate sensitive accounting estimates and the basis for the independent registered public accounting firm's conclusion regarding the reasonableness of any such estimates; and
- Any disagreements with management over the application of accounting principles, the basis for management's accounting estimates and the disclosures necessary in the financial statements.

The Audit Committee has discussed the independence of BDO USA, LLP, our independent registered public accounting firm for the year ended December 31, 2017, including the written disclosures made by BDO USA, LLP to the Audit Committee, as required by PCAOB Rule 3526, "Communication with Audit Committees Concerning Independence." PCAOB Rule 3526 requires the independent registered public accounting firm to (i) disclose in writing all relationships that, in the independent registered public accounting firm's professional opinion, may reasonably be thought to bear on independence, (ii) confirm their perceived independence, and (iii) engage in a discussion of independence with the Audit Committee.

Finally, the Audit Committee continues to monitor the scope and adequacy of our internal controls and other procedures, including any and all proposals for adequate staffing and for strengthening internal procedures and controls where appropriate and necessary.

On the basis of these reviews and discussions, the Audit Committee recommended to the Board that it approve the inclusion of our audited financial statements in our Annual Report on Form 10-K for the fiscal year ended December 31, 2017, for filing with the SEC.

The Audit Committee reviewed its written charter previously adopted by our Board of Directors. Following this review, the Audit Committee determined that no changes needed to be made with respect to the Audit Committee charter at this time.

By the Audit Committee of the Board of Directors

Neil Herskowitz
Jeffrey Paley, M.D.
Akhtar Samad, M.D., PhD

Dated April 25, 2018

OUR EXECUTIVE OFFICERS

Executive Officers

Our current executive officers are as follows:

Name	Age	Position
Lindsay A. Rosenwald, M.D.	62	Executive Chairman
Lucy Lu, M.D.	43	President, Chief Executive Officer and Director
Joseph Vazzano	34	Vice President, Finance and Accounting and Principal Financial Officer
Scott A. Reines, M.D., PhD	71	Interim Chief Medical Officer

No executive officer is related by blood, marriage or adoption to any other director or executive officer. To read more about our Drs. Rosenwald and Lu, please see pages 5 and 6 of this proxy statement.

Joseph Vazzano — Vice President, Finance and Accounting and Principal Financial Officer

Mr. Vazzano joined the Company in August 2017 from Intercept Pharmaceuticals, Inc., a publicly-traded biotechnology company, which he joined in 2016, and where he served as Assistant Corporate Controller, helping grow the finance and accounting department during Intercept's transition from a development-stage company to a fully integrated commercial organization. Prior to joining Intercept, Mr. Vazzano served as the Assistant Controller at Pernix Therapeutics, a publicly-traded specialty pharmaceutical company, where he successfully built an accounting and finance team after the closure of the South Carolina office location. From 2010 to 2015, he held various roles of increasing responsibility in finance and accounting at NPS Pharmaceuticals, a publicly-traded biotechnology company acquired by Shire Pharmaceuticals in 2015. He began his professional career with KPMG, LLP, where he served as a senior auditor. Mr. Vazzano has a Bachelor of Science degree in Accounting from Lehigh University and is a Certified Public Accountant in the State of New Jersey.

Scott A. Reines, M.D., Ph.D. — Interim Chief Medical Officer

Dr. Reines has served as our Interim Chief Medical Officer since January 2016. Dr. Reines been an independent consultant to the pharmaceutical industry since 2008. As Senior Vice President for CNS, Pain, and Translational Medicine at Johnson & Johnson from 2003 to 2008, he oversaw the development and approval of INVEGA and INVEGA SUSTENNA for schizophrenia, NUCYNTA for moderate to severe pain, REMINYL ER for Alzheimer's disease, RISPERDAL CONSTA for schizophrenia and bipolar disorder, RISPERDAL for treatment of the autism, and TOPAMAX for prevention of migraine and seizures. At Johnson & Johnson, he was responsible for all CNS and Pain products, as well as for Clinical Pharmacology and Pharmacogenomics, and was a member of the Johnson & Johnson Pharmaceutical R&D Board of Directors.

Previously, Dr. Reines was Vice President, Clinical Research at Merck from 1988 to 2003, with responsibilities for Psychopharmacology, Neuropharmacology, Gastroenterology, and Ophthalmology. There he led the development of EMEND for prevention of chemotherapy-induced nausea and vomiting, MAXALT for treatment of migraine headache, SINEMET-CR for Parkinson's disease, and TRUSOPT, COSOPT, and TIMOPTIC-XE for prevention of glaucoma. Currently, Dr. Reines consults for biotech, pharmaceutical, and venture firms, is a member of two Scientific Advisory Boards, and Chair of a Data Safety Monitoring Board. He is also a member of two non-profit boards, serving as Vice Chair of the Board of Directors of KidsPeace, a large children's psychiatric healthcare provider, and as a member of the Board of Directors of Heritage Conservancy, which is directed toward land preservation. Dr. Reines also served for two years as co-chair of the Neuroscience Steering Committee, Foundation for NIH Biomarkers Consortium, and spent five years on the National Drug Abuse Advisory Council. He holds a bachelor's degree in chemistry from Cornell University, a PhD in chemistry/molecular biology from Columbia University, and an MD from Albert Einstein College of Medicine. He is Board Certified in Psychiatry and Neurology.

EXECUTIVE COMPENSATION

As an emerging growth company, we are eligible to take advantage of certain exemptions from various reporting requirements that are applicable to other public companies that are not emerging growth companies. These include, but are not limited to, reduced disclosure obligations regarding executive compensation in our proxy statements, including the requirement to include a Compensation Discussion and Analysis, as well as an exemption from the requirement to hold a non-binding advisory vote on executive compensation. We have elected to comply with the scaled disclosure requirements applicable to emerging growth companies. As an emerging growth company, we are permitted to limit reporting of compensation disclosure to our principal executive officer and our two other most highly compensated executive officers, which we refer to as our “named executive officers” or our “NEOs.”

Summary Compensation Table

The following table sets forth information concerning compensation paid by us to our NEOs for their services rendered to us in all capacities during the years ended December 31, 2016 and 2017.

Name and Principal Position	Year	Salary (\$)	Bonus (\$)	Stock Awards (\$) ⁽¹⁾	Total (\$)
Lucy Lu⁽²⁾	2017	294,940 ⁽²⁾	282,625 ⁽⁵⁾	1,455,550	2,033,115
Chief Executive Officer	2016	181,132 ⁽²⁾	135,800 ⁽⁶⁾	27,875	344,807
Joseph Vazzano					
Vice President of Finance and Corporate Controller	2017	74,756 ⁽³⁾	48,630	203,100	326,486
	2016	38,100 ⁽⁴⁾	—	126,700	164,800
Scott A. Reines					
Interim Chief Medical Officer	2016	43,175 ⁽⁴⁾	—	—	43,175

- (1) Reflects the aggregate grant date fair value of restricted stock and restricted stock units granted during the fiscal year calculated in accordance with FASB ASC Topic 718. See Note 9 to our audited financial statements for the year ended December 31, 2017, included elsewhere in this prospectus, for a discussion of the assumptions made by us in determining the grant date fair value of our equity awards.
- (2) Prior to June 26, 2017, Dr. Lu was employed by Fortress and served as our Interim Chief Executive Officer. Dr. Lu’s employment with Avenue commenced on June 26, 2017. The amounts reported for periods prior to June 26, 2017 represent the pro rata portion of Dr. Lu’s annual salary at Fortress based on the percentage of her time devoted to us. From January 1, 2016 through December 31, 2016, Dr. Lu spent approximately 53% of her time devoted to us, and from January 1, 2017 through June 26, 2017, Dr. Lu. spent approximately 68% of her time devoted to us.
- (3) Mr. Vazzano’s employment commenced on July 24, 2017.
- (4) The amount reported represents the amount paid to Dr. Reines during 2016 through 2017 pursuant to our Consulting Agreement with him, at an hourly rate of \$400 per hour. He provided us with approximately 95 hours of work in 2017 and approximately 106 hours of work in 2016.
- (5) The amount reported represents the bonus amount paid to Dr. Lu during 2018, earned in 2017 pursuant to her Employment Agreement with Fortress. Her 2017 bonus goals were all in connection with the development of IV Tramadol. As such, 100% of her bonus was charged to us.
- (6) The amount reported represents the bonus amount paid to Dr. Lu during 2017, earned in 2016 pursuant to her Employment Agreement with Fortress. Her 2016 bonus goals were all in connection with the development of IV Tramadol. As such, 100% of her bonus was charged to us.

Narrative to Summary Compensation Table

Employment Agreement with Dr. Lu

On June 10, 2015, we entered into an Employment Agreement with Lucy Lu, M.D. to serve as our Interim President and Chief Executive Officer upon the completion of our initial public offering. Dr. Lu's Employment Agreement became effective on June 26, 2017. Under the terms of Dr. Lu's Employment Agreement, Dr. Lu's base salary is equal to \$395,000 per year. Dr. Lu's base salary may be reduced only in connection with a company-wide decrease in executive compensation. Dr. Lu is also eligible to receive an annual discretionary bonus, not to exceed 50% of her base salary, if certain financial, clinical development, and/or business milestones are met in the discretion of Board of Directors. Such milestones are established annually by mutual agreement between Dr. Lu and the Board of Directors. Dr. Lu's bonuses for 2017 and 2016 were paid in connection with her employment by Fortress. Prior to her execution of the Employment Agreement, Ms. Lu was awarded 333,333 shares of our common stock pursuant to a Restricted Stock Issuance Agreement dated May 28, 2015. One-half of these restricted shares vest annually over four years and the remaining half vest upon the achievement of goals and objectives relating to the development of IV Tramadol, in each case subject to her continued employment and otherwise upon the terms and conditions of the Company's 2015 Incentive Plan and the applicable award agreement. On August 8, 2017, we granted Dr. Lu 215,000 restricted stock units that vest in equal installments on each of the first four anniversaries of the grant date, subject to her continued employment.

Dr. Lu's employment with us is at will and may be terminated by us at any time and for any reason. However, under the terms of the Employment Agreement, if we terminate Dr. Lu's employment without cause (as defined in the Employment Agreement) or if Dr. Lu resigns her employment for good reason (as defined in the Employment Agreement), Dr. Lu will be entitled to receive the following:

- cash severance equal to her annual salary, paid over a period of twelve months;
- payment of the premiums to continue health care coverage for Dr. Lu and her eligible dependents under COBRA for up to twelve months;
- a pro rata share of her annual bonus, to be paid when and if such bonus would have been paid under the Employment Agreement; and
- immediate vesting of the portion of her unvested equity awards with respect to the number of shares that would have vested if Dr. Lu had remained employed for one year after the termination date, or full vesting of all unvested equity awards if such termination occurs on or within six months following a Change of Control (as defined in the Employment Agreement).

If Dr. Lu's employment is terminated due to her Death or Complete Disability (as defined in the Employment Agreement), she shall be entitled to receive the following:

- cash severance equal to her annual salary, paid over a period of ninety days;
- a pro rata share of her annual bonus, to be paid when and if such bonus would have been paid under the Employment Agreement; and
- immediate vesting of the portion of her unvested equity awards with respect to the number of shares that would have vested if Dr. Lu had remained employed for one year after the termination date.

Employment Agreement with Mr. Vazzano

As described in our letter agreement with Mr. Vazzano, Mr. Vazzano's annual base salary is \$170,000 and after one month of service, he received a sign-on bonus of \$30,000, subject to repayment in the event that Mr. Vazzano's employment terminates prior to August 24, 2018 due to his resignation or termination by the Company for "cause". Mr. Vazzano is eligible to receive an annual bonus of up to 25% of his base salary, as determined by the Company in its discretion based upon factors including corporate and individual performance. Mr. Vazzano also was granted an award of 30,000 restricted stock units, which will vest ratably over four years, subject to his continued employment and otherwise upon the terms and conditions of the Company's 2015 Incentive Plan and the applicable award agreement. If Mr. Vazzano's

employment is terminated by the Company without “cause” or by Mr. Vazzano following the relocation of his primary place of work to a different location that is greater than 40 miles from his home in Morristown, New Jersey, then he will be entitled to receive severance pay equal to six months’ salary, payable over a six-month period. Mr. Vazzano is eligible to participate in the Company’s employee benefit plans and programs, subject to the terms and conditions thereof.

Employment Arrangement with Dr. Reines

On January 25, 2016, we entered into a First Amendment to our Consulting Agreement with Dr. Reines, which we originally entered into on July 22, 2015. The original agreement provided that Dr. Reines would provide general consulting services relating to statistical, clinical and other strategic issues. Under the agreement, as amended, Dr. Reines serves as our Interim Chief Medical Officer and remains an independent contractor. Pursuant to the agreement, we pay Dr. Reines \$400.00 per hour for all services he provides to us. We entered into a Second Amendment with Dr. Reines in August 2016 that extends the agreement for a period of two years, followed by automatic renewal for successive one-year periods, unless earlier terminated. We entered into a Third Amendment with Dr. Reines in February 2017 that added language concerning confidential information and inventions surrounding Dr. Reines’ work with us.

Annual Incentive Bonus

In 2017, Dr. Lu was eligible to earn a target annual bonus equal to 50% of her base salary per the terms of her employment agreement and Mr. Vazzano was eligible to earn a prorated target annual bonus equal to 25% of his base salary. Dr. Lu’s bonus was based upon the Company’s performance against pre-established corporate goals and objectives, which included a combination of clinical and regulatory goals related to our products as well as other corporate goals, and her individual performance based upon subjective performance reviews. Mr. Vazzano’s prorated bonus was paid on a 100% achievement basis based upon the number of days worked in the year since his hire on July 24, 2017, pursuant to his employment agreement with us.

The corporate performance goals and objectives used to determine Dr. Lu’s bonus in 2017 were as follows:

- Various clinical and nonclinical goals — 50% maximum potential weighting (50% achieved);
- Various goals related to intellectual property — 30% maximum potential weighting (30% achieved);
- Various goals related to corporate development — 20% maximum potential weighting (15% achieved).

These goals and objectives were achieved at an aggregate level of 95%, and accordingly Dr. Lu was paid 95% of her target bonus amount. The actual amounts paid to the executives pursuant to their annual cash incentive awards and bonuses are reported in the “Summary Compensation Table” as bonus.

Equity Awards

The Compensation Committee has granted each of Dr. Lu, Mr. Vazzano and Dr. Reines the following equity awards under our Avenue Therapeutics, Inc. 2015 Incentive Plan (the “2015 Plan”).

- On June 10, 2015 Dr. Lu received 333,333 Restricted Stock Awards, which vest as described in Footnote 2 to the Outstanding Equity Awards Table below.
- On August 8, 2017, Dr. Lu received 215,000 Restricted Stock Units, which vest as described in Footnote 3 to the Outstanding Equity Awards Table below.
- On August 8, 2017, Mr. Vazzano received 30,000 Restricted Stock Units, which vest as described in Footnote 3 to the Outstanding Equity Awards Table below.
- On August 8, 2017, Dr. Reines received 35,000 Restricted Stock Units, which vest as described in Footnote 3 to the Outstanding Equity Awards Table below.

Outstanding Equity Awards at 2017 Fiscal Year End

Name	Grant Date	Number of Shares or Units of Stock that Have Not Vested	Market Value of Shares or Units of Stock that Have Not Vested (\$) ⁽¹⁾	Equity Incentive Plan Awards: Number of Unearned Shares, Units or Other Rights that Have Not Vested	Equity Incentive Plan Awards: Market Value or Payout Value of Unearned Shares, Units or Other Rights that Have Not Vested (\$) ⁽¹⁾
Lucy Lu	6/10/2015	83,332 ⁽²⁾	301,662	116,667 ⁽²⁾	422,335
Lucy Lu	8/8/2017	215,000 ⁽³⁾	778,300	—	—
Joseph Vazzano	8/8/2017	30,000 ⁽³⁾	108,600	—	—
Scott Reines	8/8/2017	35,000 ⁽³⁾	126,700	—	—

- (1) The market value of unvested restricted stock awards/units was calculated by multiplying the number of units by \$3.62, the closing sales price of our common stock on December 29, 2017 (the last business day of 2017).
- (2) Represents 166,666 restricted stock awards vesting annually in equal installments on June 10, 2016 – 2019, of which 83,332 remained unvested as of December 31, 2017. Also represents an additional 166,667 restricted stock awards vesting upon achievement of goals and objectives relating to the development of IV Tramadol of which 116,667 remained unvested as of December 31, 2017.
- (3) Represents restricted stock units vesting annually in equal installments on August 8, 2018 – 2021.

Potential Payments upon Termination or Change in Control

As detailed above, we have an employment agreement with Dr. Lu that provides certain compensation and benefits in the event of a termination of her employment or change in control under certain conditions. In addition, Dr. Lu's employment agreement and our equity plan provides certain equity award benefits in connection with a termination or change in control.

Dr. Lu's Restricted Shares

- If we terminate Dr. Lu's employment without "cause" or Dr. Lu resigns for "good reason," at any time other than at the time of, or within six (6) months following, a change in control, then her unvested equity awards that would have vested if she had continued employment for one year after her date of termination will become fully vested.
- If we terminate Dr. Lu's employment without "cause" or Dr. Lu resigns for "good reason" upon the occurrence of, or within 18 months following, a change in control, then all of her unvested equity awards will become fully vested and she will have 12 months following the date of termination to exercise any outstanding stock options.
- If Dr. Lu's employment terminates as a result of her death or "disability," then her unvested equity awards that would have vested if she had continued employment for one year after her date of termination will become fully vested and she will have 12 months following the date of termination to exercise any outstanding stock options.

Other Awards Granted under the 2015 Incentive Plan

- Unless otherwise provided in an award certificate or any special plan document governing an award, upon the occurrence of a change in control of our company, (i) all outstanding options, SARs and other awards in the nature of rights that may be exercised will become fully exercisable, (ii) all time-based vesting restrictions on outstanding awards will lapse; and (iii) the payout opportunities attainable under all outstanding performance-based awards will vest based on target performance and the awards will pay out on a pro rata basis, based on the time elapsed prior to the change in control.

- The Compensation Committee may, in its discretion, accelerate the vesting and/or payment of any awards for any reason, subject to certain limitations under Section 409A of the Internal Revenue Code. The Compensation Committee may discriminate among participants or among awards in exercising such discretion.

DIRECTOR COMPENSATION

Director Compensation Program

In January 2017, our directors adopted a Non-Employee Directors Compensation Plan for our non-employee directors pursuant to our 2015 Incentive Plan. Our non-employee directors receive the following compensation:

Cash Compensation:

- \$50,000 annual retainer;
- \$10,000 additional annual retainer for the Executive Chairman of the Board; and
- \$10,000 additional annual retainer for the Audit Committee Chair.

Equity Compensation:

- Initial Equity Grant: 50,000 shares of restricted stock, which shares shall vest and become non-forfeitable in equal annual installments over three years, beginning on the third (3rd) anniversary of the grant date, subject to the director's continued service on the board of directors on such date.
- Re-Election Equity Grant: The greater of (i) a number of shares of restricted stock having a fair market value on the grant date of \$50,000, or (ii) 10,000 shares of restricted stock, which shares shall vest and become non-forfeitable on the third (3rd) anniversary of the grant date, subject to the director's continued service on the board of directors on such date.

In addition, each non-employee director receives reimbursement for reasonable travel expenses incurred in attending meetings of our board of directors and meetings of committees of our board of directors.

2017 Director Compensation Table

The following table sets forth the cash and other compensation we paid to the non-employee members of our Board of Directors for all services in all capacities during 2017.

Name	Fees Earned or Paid in Cash ⁽¹⁾	Stock Awards (\$) ⁽²⁾	Total (\$)
Lindsay A. Rosenwald	30,000	67,700	97,700
Michael S. Weiss	25,000	67,700	92,700
Neil Herskowitz	30,000	338,500	368,500
Jeffrey Paley	25,000	338,500	363,500
Akhtar Samad	25,000	338,500	363,500
Jay Kranzler	25,000	338,500	363,500

(1) Represents cash retainer for serving on our Board and committees of the Board.

(2) Reflects the aggregate grant date fair value of restricted stock granted during the fiscal year calculated in accordance with FASB ASC Topic 718. See Note 9 to our audited financial statements in our Form 10-K for the year ended December 31, 2017 filed with the SEC on March 1, 2018 for a discussion of the assumptions made by us in determining the grant date fair value of our equity awards.

COMPENSATION COMMITTEE INTERLOCKS AND INSIDER PARTICIPATION

The current members of our Compensation Committee are Jay Kranzler, M.D., PhD, Jeffrey Paley, M.D. and Akhtar Samad, M.D., PhD. No member of our Compensation Committee during fiscal year 2017 or as of the date of this proxy statement, is or has been an officer or employee of Avenue, nor has any member of our Compensation Committee had any relationship with Avenue requiring further disclosure.

During the last fiscal year, none of our executive officers served as a director or member of the Compensation Committee (or other committee serving an equivalent function) of any other entity, whose executive officers either served as a member of our Compensation Committee or our Board of Directors.

SECTION 16(a) BENEFICIAL OWNERSHIP REPORTING COMPLIANCE

Section 16(a) of the Exchange Act requires our directors, executive officers and persons who own more than 10% of the shares of our common stock to file an initial report of ownership on Form 3 and changes in ownership on Form 4 or Form 5 with the SEC. Such officers, directors and 10% stockholders are also required by SEC rules to furnish us with copies of any Forms 3, 4 or 5 that they file. The SEC rules require us to disclose late filings of initial reports of stock ownership and changes in stock ownership by our directors, executive officers and 10% stockholders. Based solely on a review of copies of the Forms 3, 4 and 5 furnished to us by reporting persons and any written representations furnished by certain reporting persons, we believe that during the fiscal year ended December 31, 2017, all Section 16(a) filing requirements applicable to our directors, executive officers and 10% stockholders were completed in a timely manner, except for the Form 3 filings by each of Akhtar Samad, Jeffrey Paley, Lindsay Rosenwald, Lucy Lu, Michael Weiss, Neil Herskowitz, Joseph Vazzano, Scott Reines, Jay Kranzler, and Fortress Biotech, Inc, and one Form 4 filing related to four transactions by Lindsay Rosenwald.

RELATED-PERSON TRANSACTIONS

The following is a summary of each transaction or series of similar transactions since the inception of Avenue to which it was or is a party and that:

- the amount involved exceeded or exceeds \$120,000 or is greater than 1% of our total assets; and
- any of our directors or executive officers, any holder of 5% of our capital stock or any member of their immediate family had or will have a direct or indirect material interest.

Founders Agreement and Management Services Agreement with Fortress

Effective as of February 17, 2015, we entered into a Founders Agreement with Fortress, pursuant to which Fortress assigned to us all of its right and interest under Fortress' license agreement with Revogenex for IV Tramadol. As consideration for the Founders Agreement, we assumed \$3.0 million in debt that Fortress accumulated under the NSC Note for the IV Tramadol license, of which \$2.0 million represents the initial payment in February 2015 and \$1.0 million the payment made in June 2015. As additional consideration for the transfer of rights under the Founders Agreement, we will also: (i) issue annually to Fortress, on the anniversary date of the Founders Agreement, shares of common stock equal to 2.50% of our fully-diluted outstanding equity at the time of issuance; (ii) pay an equity fee in shares of common stock, payable within five business days of the closing of any equity or debt financing that occurs after the effective date of the Founders Agreement and ending on the date when Fortress no longer has majority voting control of our voting equity, equal to 2.50% of the gross amount of any such equity or debt financing; and (iii) pay a cash fee equal to 4.5% of our annual net sales, payable on an annual basis, within 90 days of the end of each calendar year. In the event of a change in control (as it is defined in the Founders Agreement), we will pay a one-time change in control fee equal to five times the product of (i) monthly net sales for the 12 months immediately preceding the change in control and (ii) 4.5%.

On September 13, 2016, we entered into an Amended and Restated the Founders Agreement, or the A&R Founders Agreement, with Fortress. The A&R Founders Agreement eliminated the annual equity fee in connection with the original agreement and added a term of 15 years, which upon expiration automatically renews for successive one-year periods unless terminated by Fortress or a change in control occurs. Concurrently with the A&R Founders Agreement, we entered into an Exchange Agreement whereby we exchanged Fortress's 2.3 million Class A common shares for approximately 2.5 million common shares and 250,000 Class A Preferred shares. In connection with the issuance of Class A Preferred shares, Fortress will receive an annual stock dividend.

Effective as of February 17, 2015, Fortress entered into a Management Services Agreement (the "MSA") with us and each of our current directors and officers who are directors or officers of Fortress, excluding services provided by Dr. Lucy Lu, our current Chief Executive Officer as of June 26, 2017 and the former Chief Financial Officer of Fortress (resigned as of June 26, 2017), to provide services to us pursuant to the terms of the MSA. Pursuant to the terms of the MSA, for a period of five (5) years, Fortress will render advisory and consulting services to us. Services provided under the MSA may include, without limitation, (i) advice and assistance concerning any and all aspects of our operations, clinical trials, financial planning and strategic transactions and financings and (ii) conducting relations on behalf of us with accountants, attorneys, financial advisors and other professionals (collectively, the "Services"). We are obligated to utilize clinical research services, medical education, communication and marketing services and investor relations/public relation services of companies or individuals designated by Fortress, provided those services are offered at market prices. However, we are not obligated to take or act upon any advice rendered from Fortress and Fortress shall not be liable for any of our actions or inactions based upon their advice. Fortress and its affiliates, including all members of our Board of Directors, have been contractually exempt from fiduciary duties to us relating to corporate opportunities. In consideration for the Services, we will pay Fortress an annual consulting fee of \$0.5 million (the "Annual Consulting Fee"), payable in advance in equal quarterly installments on the first business day of each calendar quarter in each year, provided, however, that such Annual Consulting Fee shall be increased to \$1.0 million for each calendar year in which we have net assets in excess of \$100.0 million at the beginning of the calendar year.

On May 15, 2017, we and Fortress amended the MSA to allow for payment of the Annual Consulting Fee in our common stock in increments of \$0.5 million, prior to the launch of our IPO. On June 26, 2017, we repaid \$1.0 million of the outstanding 2015 and 2016 Annual Consulting fees by issuing 166,666 shares of our common stock at the offering price of \$6.00 per share.

For the years ended December 31, 2017 and 2016 and the period from February 9, 2015 (Inception) to December 31, 2015, we had expenses related to the MSA of approximately \$0.5 million, \$0.5 million and \$0.4 million, respectively.

Awards to Fortress

Pursuant to the Founders Agreement, on February 17, 2016, we issued 76,250 shares of common stock to Fortress, which equaled to 2.5% of the fully diluted outstanding equity of Avenue at the time of issuance for the annual equity fee. We recorded an expense of approximately \$40,000, in research and development licenses-acquired related to this stock grant during the period from February 9, 2015 (Inception) to December 31, 2015.

Pursuant to our Second Amended and Restated Certificate of Incorporation, on February 17, 2017, we issued 83,532 shares of common stock to Fortress, which equaled to 2.5% of the fully diluted outstanding equity of Avenue at the time of issuance for the annual stock dividend. We recorded an expense of approximately \$49,000, in research and development licenses-acquired related to this stock grant during the year ended December 31, 2016.

Pursuant to our Third Amended and Restated Certificate of Incorporation, on February 17, 2018 we issued 273,837 shares of common stock to Fortress, which equaled to 2.5% of the fully diluted outstanding equity of Avenue at the time of issuance for the annual stock dividend. We recorded an expense of approximately \$1.1 million in research and development licenses-acquired related to this stock grant during the year ended December 31, 2017.

On June 26, 2017, pursuant to the terms of the Founders Agreement with Fortress, we issued to Fortress 158,125 shares of common stock at \$6.00 per share, representing the 2.5% financing fee Fortress receives on third-party financings. We recorded expense of approximately \$0.9 million related to the financing fee in general and administrative expenses in the Statement of Operations for the year ended December 31, 2017.

On June 26, 2017, we repaid \$1.0 million of the outstanding 2015 and 2016 Annual Consulting fees by issuing 166,666 shares of our common stock at the offering price of \$6.00 per share. The 2017 Annual Consulting fee of \$0.5 million was paid in cash in the year ended December 31, 2017.

Fortress Note

Effective March 15, 2015, we entered into a future advance promissory note with Fortress (the "Fortress Note"), in which Fortress agreed to provide a working capital line of credit until we have a third-party financing. Interest on the Fortress Note accrued at 8% per annum and shall be payable to Fortress on the day after the end of each calendar quarter following the first third-party financing. All principal and accrued interest under the Fortress Note is payable on demand following the first third-party financing. This Fortress Note can be pre-paid at any time in cash or through the assumption of Fortress' indebtedness NSC or other similar indebtedness.

In May 2017, in anticipation of our IPO, the Company and Fortress amended the FBIO Note (the "FBIO Note Amendment"), to reduce interest on the FBIO Note from 8% to 2% from inception, effective the closing date of our IPO. Accordingly, on June 26, 2017, the interest rate was reduced and resulted in a reduction of interest of approximately \$0.3 million (\$0.4 million at 8% versus \$0.1 million at 2%). In accordance with ASC 470-50, Debt, Modifications and Extinguishments, we determined that since the change in interest rate did not materially change the nature of the note, it was accounted for as a modification and recorded as a reduction in interest expense of \$0.3 million in additional paid in capital on the Statement of Stockholders' Equity (Deficit).

On July 25, 2017, we repaid the outstanding principal and interest balance of the Fortress Note of approximately \$3.5 million and \$0.1 million, respectively. For the years ended December 31, 2017 and 2016 and the period from February 9, 2015 (Inception) to December 31, 2015, we had interest expense related to the Fortress Note of approximately \$74,000, \$0.2 million and \$0.2 million, respectively.

NSC Note and Financings

In September 2016, Fortress acquired through a tender offer 56.6% of National Holdings, Inc. (“National” or “NHLD”). The Company held an approximate \$3.0 million NSC Note (“NSC Note”) for which NSC, a subsidiary of National, received a 10% placement fee upon issuance of the Note to Fortress. On June 26, 2017, we completed an IPO and NSC acted as co-manager in this offering and earned commissions and fees of approximately \$2.3 million. On July 5, 2017, we repaid the outstanding NSC Note of approximately \$3.0 million and accrued interest of approximately \$2,000.

On June 26, 2017, pursuant to the terms of our \$3.0 million NSC Note, upon the closing of our IPO, we issued to National the Contingently Issuable Warrants for 125,000 common shares at par, relating to its aggregate gross proceeds from its third-party offerings exceeding five times the value of the debt. Upon the issuance of the Contingently Issuable Warrants, Fortress was removed as the guarantor on the note.

**STOCK OWNERSHIP OF OUR DIRECTORS, EXECUTIVE OFFICERS, AND
5% BENEFICIAL OWNERS**

The following table shows information, as of March 31, 2018, concerning the beneficial ownership of our common stock by:

- each person we know to be the beneficial owner of more than 5% of our common stock;
- each of our current directors;
- each of our NEOs shown in our Summary Compensation Table; and
- all current directors and NEOs as a group.

As of March 31, 2018, there were 10,552,045 shares of our common stock outstanding. Beneficial ownership is determined according to the rules of the SEC and generally means that a person has beneficial ownership of a security if he, she or it possesses sole or shared voting or investment power of that security, including options and warrants that are currently exercisable or exercisable within 60 days of March 31, 2018. Shares of our common stock issuable pursuant to stock options are deemed outstanding for computing the percentage of the person holding such options and the percentage of any group of which the person is a member but are not deemed outstanding for computing the percentage of any other person. Except as indicated by the footnotes below, we believe, based on the information furnished to us, that the persons named in the table below have sole voting and investment power with respect to all shares of common stock shown that they beneficially own, subject to community property laws where applicable. The information does not necessarily indicate beneficial ownership for any other purpose, including for purposes of Section 13(d) and 13(g) of the Securities Act.

Unless otherwise indicated, the address for each director and executive officer listed is: c/o Avenue Therapeutics, Inc., 2 Gansevoort Street, 9th Floor, New York, NY 10014.

Name of Beneficial Owner	Number of Shares Beneficially Owned	Percentage of Shares Beneficially Owned	
		Before Offering	After Offering
Lucy Lu	337,333	3%	
Joseph Vazzano	—	*	
Scott A. Reines	—	*	
Lindsay A. Rosenwald	186,667 ⁽¹⁾	2%	
Michael S. Weiss	176,667 ⁽¹⁾	2%	
Neil Herskowitz	51,500	*	
Jeffrey Paley	50,000	*	
Akhtar Samad	50,000	*	
Jay Kranzler	50,000	*	
All Executive officers and directors as a group (9 persons)	568,833 ⁽²⁾	5%	
5% or Greater Stockholders:			
Fortress Biotech, Inc.	3,590,096 ⁽³⁾	34%	

* Less than 1%

(1) Dr. Rosenwald and Mr. Weiss each have warrants convertible into 166,667 shares of our common stock. These warrants were issued by Fortress and are convertible into shares of our common stock that are owned by Fortress. These do not represent equity compensation by us to either Dr. Rosenwald or Mr. Weiss.

(2) The total calculation for all executive officers and directors as a group does not include Dr. Rosenwald's and Mr. Weiss' warrants, which have not yet been exercised.

(3) Excludes 250,000 Class A Preferred shares owned by Fortress. See "Relationships and Related Transactions" for a description of Fortress' ownership.

PROPOSAL ONE

ELECTION OF DIRECTORS; NOMINEES

Our Bylaws provide that the Board shall consist of not more than nine nor less than one member, as determined from time to time by resolution of the Board. Our Board currently consists of seven members. The nominated directors are: Lindsay A. Rosenwald, M.D., Lucy Lu, M.D., Neil Herskowitz, Jay Kranzler, M.D., Ph.D., Jeffrey Paley, M.D., Akhtar Samad, M.D., Ph.D., and Michael S. Weiss. For information about each of the nominees and our Board generally, please see “Corporate Governance-Our Board of Directors” beginning on page 5. If elected, the nominees will hold office until the next annual meeting and until a respective successor is elected and has been qualified, or until such director resigns or is removed from office. Management expects that each of the nominees will be available for election, but if any of them is unable to serve at the time the election occurs, your proxy will be voted for the election of another nominee to be designated by a majority of the independent directors serving on our Board.

THE BOARD OF DIRECTORS UNANIMOUSLY RECOMMENDS A VOTE “FOR” THE ELECTION OF ALL OF THE NOMINEES FOR DIRECTOR. IF A CHOICE IS SPECIFIED ON THE PROXY BY THE STOCKHOLDER, THE SHARES WILL BE VOTED AS SPECIFIED. IF NO SPECIFICATION IS MADE, THE SHARES WILL BE VOTED “FOR” ALL OF THE NOMINEES. THE AFFIRMATIVE VOTE OF THE HOLDERS OF A PLURALITY OF THE SHARES OF COMPANY COMMON STOCK REPRESENTED AND ENTITLED TO VOTE AT THE ANNUAL MEETING AT WHICH A QUORUM IS PRESENT IS REQUIRED FOR THE ELECTION OF THE NOMINEES.

PROPOSAL TWO

RATIFICATION OF APPOINTMENT OF BDO USA, LLP AS OUR INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Board is submitting the selection of BDO USA, LLP as our independent registered public accounting firm to the stockholders for ratification at our Annual Meeting. Stockholder ratification of our independent registered public accounting firm is not required by our Bylaws or otherwise. If BDO USA, LLP is not ratified as our independent registered public accounting firm by a majority of the shares present or represented by proxy, the Audit Committee will review its future selection of an independent registered public accounting firm. BDO USA, LLP will still serve as our independent registered public accounting firm for the year ending December 31, 2018, if it is not ratified by our stockholders.

**THE BOARD OF DIRECTORS UNANIMOUSLY RECOMMENDS A VOTE “FOR”
RATIFICATION OF THE APPOINTMENT OF BDO USA, LLP AS THE COMPANY’S INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM FOR THE YEAR ENDING DECEMBER 31, 2018. THE AFFIRMATIVE VOTE OF THE MAJORITY OF SHARES PRESENT IN PERSON OR REPRESENTED BY PROXY AT THE MEETING AND ENTITLED TO VOTE ON THE SUBJECT MATTER IS REQUIRED FOR THE RATIFICATION OF THE APPOINTMENT OF BDO USA, LLP.**

PROPOSAL THREE

APPROVAL OF THE AMENDMENT TO OUR THIRD AMENDED AND RESTATED CERTIFICATE OF INCORPORATION TO AMEND THE ANNUAL STOCK DIVIDEND PAYMENT DATE FROM FEBRUARY 17 TO JANUARY 1 OF EACH YEAR

Overview

Our Third Amended and Restated Certificate of Incorporation (the “Certificate”) currently sets our Annual Stock Dividend (as defined therein) payment date at February 17 of each year.

Our Board of Directors has approved, and is seeking stockholder approval of, an amendment to our Certificate (the “Amendment”) to move the Annual Stock Dividend payment date from February 17 to January 1 of each year. The text of the proposed Amendment is attached hereto as Exhibit A.

No changes to the Certificate are being proposed with respect to the number of authorized shares of preferred stock or any other matter. Other than the proposed change to the Annual Stock Dividend, the Amendment is not intended to modify the rights of existing stockholders in any material respect.

The Board of Directors has unanimously determined that the Amendment is advisable and in the best interests of the Company and our stockholders, and recommends that our stockholders approve the Amendment.

Reasons for Amendment

The Board of Directors believes that it is prudent to amend the annual stock dividend payment date from February 17 to January 1 of each year for accounting purposes.

If the Proposed Amendment is approved by the stockholders, it will become effective upon filing and recording of a Certificate of Amendment as required by the Delaware General Corporation Law.

THE BOARD OF DIRECTORS UNANIMOUSLY RECOMMENDS A VOTE “FOR” THE APPROVAL OF THE AMENDMENT OF OUR THIRD AMENDED AND RESTATED CERTIFICATE OF INCORPORATION TO AMEND THE ANNUAL STOCK DIVIDEND PAYMENT DATE FROM FEBRUARY 17 TO JANUARY 1 OF EACH YEAR.

ADDITIONAL INFORMATION

Householding of Annual Meeting Materials

Some banks, brokers and other nominee record holders may be participating in the practice of “householding” proxy statements and annual reports. This means that only one copy of our proxy statement and 2017 Annual Report may have been sent to multiple stockholders in your household. We will promptly deliver a separate copy of either document to you if you contact us at: Avenue Therapeutics, Inc., 2 Gansevoort Street, New York, New York 10014, Attn: Joseph Vazzano. You may also contact us at (781) 652-4500.

If you want to receive separate copies of the proxy statement and annual report in the future, or if you are receiving multiple copies and would like to receive only one copy for your household, you should contact your bank, broker, or other nominee record holder, or you may contact us at the above address or phone number.

Stockholder Proposals for Our 2019 Annual Meeting

Only proper proposals under Rule 14a-8 of the Exchange Act which are timely received will be included in the proxy materials for our next annual meeting. In order to be considered timely, such proposal must be received by our Corporate Secretary, Joseph Vazzano, at 2 Gansevoort Street, New York, New York 10014, no later than December 29, 2018. We suggest that stockholders submit any stockholder proposal by certified mail, return receipt requested.

Our Bylaws require stockholders to provide advance notice to the Company of any stockholder director nomination(s) and any other matter a stockholder wishes to present for action at an annual meeting of stockholders (other than matters to be included in our proxy statement, which are discussed in the previous paragraph). In order to properly bring business before an annual meeting, our Bylaws require, among other things, that the stockholder submit written notice thereof complying with our Bylaws to Joseph Vazzano, our Corporate Secretary, at the above address, not less than 50 days nor more than 90 days prior to the anniversary of the preceding year’s annual meeting. Therefore, the Company must receive notice of a stockholder proposal submitted other than pursuant to Rule 14a-8 (as discussed above) no sooner than March 15, 2019, and no later than April 24, 2019. If a stockholder fails to provide timely notice of a proposal to be presented at our 2019 Annual Meeting of Stockholders, the proxy designated by our Board will have discretionary authority to vote on any such proposal that may come before the meeting.

Other Matters

Our Board does not know of any other matters that may come before the meeting. However, if any other matters are properly presented to the meeting, it is the intention of the person named in the accompanying proxy card to vote, or otherwise act, in accordance with their judgment on such matters.

Solicitation of Proxies

We will bear the cost of solicitation of proxies. In addition to the solicitation of proxies by mail, our officers and employees may solicit proxies in person or by telephone. We may reimburse brokers or persons holding stock in their names, or in the names of their nominees, for their expenses in sending proxies and proxy material to beneficial owners.

Incorporation of Information by Reference

The Audit Committee Report contained in this proxy statement is not deemed filed with the SEC and shall not be deemed incorporated by reference into any prior or future filings made by us under the Securities Act of 1933, as amended or the Exchange Act, except to the extent that we specifically incorporate such information by reference. Our Annual Report on Form 10-K for the year ended December 31, 2017, delivered to you together with this proxy statement, is hereby incorporated by reference.

APPENDIX A
CERTIFICATE OF AMENDMENT TO THIRD AMENDED AND
RESTATED CERTIFICATE OF INCORPORATION OF
AVENUE THERAPEUTICS, INC.

**CERTIFICATE OF AMENDMENT
OF THE
THIRD AMENDED AND RESTATED CERTIFICATE OF INCORPORATION
OF
AVENUE THERAPEUTICS, INC.**

Avenue Therapeutics, Inc., a corporation organized and existing under and by virtue of the Delaware General Corporation Law (the "Corporation"), does hereby certify:

1. The Third Amended and Restated Certificate of Incorporation of the Corporation is hereby amended by deleting Article IV, Section 1.1 thereof in its entirety and inserting the following in lieu thereof:

"1.1: Class A Preferred. The record holders of the outstanding shares of Class A Preferred Stock shall receive on each January 1 (each a "PIK Dividend Payment Date") after the original issuance date of the Class A Preferred Stock until the date all outstanding Class A Preferred Stock is converted into Common Stock or redeemed (and the purchase price is paid in full), pro rata per share dividends paid in additional fully paid and nonassessable shares of Common Stock (such dividend being herein called "PIK Dividends") such that the aggregate number of shares of Common Stock issued pursuant to such PIK Dividend is equal to two and one-half percent (2.5%) of the Corporation's fully-diluted outstanding capitalization on the PIK Record Date. Notwithstanding the foregoing, a holder of Class A Preferred Stock entitled to receive a PIK Dividend may waive its rights to receive such dividend for any annual period, and such waiver shall not operate as a waiver of any future PIK Dividends. The "PIK Record Date" shall mean the date that is one (1) business day prior to any PIK Dividend Payment Date.

On the PIK Record Date immediately preceding a PIK Dividend Payment Date, the Board of Directors of the Corporation shall be deemed to have declared PIK Dividends on the Class A Preferred Stock in accordance with the above, payable on the next PIK Dividend Payment Date. PIK Dividends shall be payable in arrears on each PIK Dividend Payment Date, commencing on the first PIK Dividend Payment Date. If any PIK Dividend Payment Date occurs on a day that is not a business day, any accrued PIK Dividends otherwise payable on such PIK Dividend Payment Date shall be paid on the next succeeding business day. PIK Dividends shall be paid to holders of record of the Class A Preferred Stock on each PIK Dividend Payment Date as their names shall appear on the share register of the Corporation on the PIK Record Date immediately preceding such PIK Dividend Payment Date. Unpaid PIK Dividends may be paid at any time to holders of record on the PIK Record Date therefor. In the event the Class A Preferred Stock converts into Common Stock the holders shall receive all PIK Dividends accrued through the date of such conversion. The record date for such payment on conversion shall be the date immediately prior to the effective date of such conversion."

2. The foregoing amendment was duly adopted in accordance with the provisions of Section 242 of the General Corporation Law of the State of Delaware

IN WITNESS WHEREOF, the Corporation has caused this Certificate of Amendment of the Third Amended and Restated Certificate of Incorporation to be executed and acknowledged by its duly appointed officer as of this 13th day of June, 2018.

AVENUE THERAPEUTICS, INC.

By: _____
Lucy Lu, M.D.
President, Chief Executive Officer and Director

**AVENUE THERAPEUTICS, INC.
2 GANSEVOORT STREET, 9TH FLOOR
NEW YORK, NEW YORK 10014**

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 June 12, 2018. 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 June 12, 2018. 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:

E47654-P08118

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

THIS PROXY CARD IS VALID ONLY WHEN SIGNED AND DATED.

AVENUE THERAPEUTICS, INC.		For All	Withhold All	For All Except	To withhold authority to vote for any individual nominee(s), mark "For All Except" and write the number(s) of the nominee(s) on the line below.
The Board of Directors recommends you vote FOR the following: 1. Election of Directors		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Nominees: 01) Lindsay A. Rosenwald, M.D. 05) Jeffrey Paley, M.D. 02) Lucy Lu, M.D. 06) Akhtar Samad, M.D., Ph.D. 03) Neil Herskowitz 07) Michael S. Weiss 04) Jay Kranzler, M.D., Ph.D.		_____			<input type="checkbox"/>
The Board of Directors recommends you vote FOR proposals 2 and 3.					For Against Abstain
2. Ratify the appointment of BDO USA, LLP as our independent registered public accounting firm for the year ending December 31, 2018; and		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3. Approve an amendment to our Third Amended and Restated Certificate of Incorporation to amend the Annual Stock Dividend payment date from February 17 to January 1 of each year.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
NOTE: Such other business as may properly come before the meeting or any adjournment thereof.					
		Yes	No		
Please indicate if you plan to attend this meeting.		<input type="checkbox"/>	<input type="checkbox"/>		
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.					
Signature [PLEASE SIGN WITHIN BOX]		Date		Signature (Joint Owners)	
				Date	

Important Notice Regarding the Availability of Proxy Materials for the Annual Meeting:

The Notice and Proxy Statement and Annual Report are available at www.proxyvote.com.

E47655-P08118

**AVENUE THERAPEUTICS, INC.
Annual Meeting of Shareholders
June 13, 2018 2:00 PM EDT
This proxy is solicited by the Board of Directors**

The shareholder(s) hereby appoint(s) Lucy Lu, M.D. and Joseph Vazzano, or either of them, as proxies, each with the power to appoint his or her substitute, and hereby authorize(s) them to represent and to vote, as designated on the reverse side of this ballot, all of the shares of (Common/Preferred) stock of AVENUE THERAPEUTICS, INC. that the shareholder(s) is/are entitled to vote at the Annual Meeting of Shareholders to be held at 2:00 PM, EDT on June 13, 2018, at Alston & Bird, LLP, 90 Park Avenue, New York, NY 10016, and any adjournment or postponement thereof.

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

Continued and to be signed on reverse side