SYNOPSYS INC
Form DEF 14A
February 10, 2011
Table of Contents

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

SCHEDULE 14A

Proxy Statement Pursuant to Section 14(a) of

the Securities Exchange Act of 1934 (Amendment No.)

Filed by the Registrant x

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))**

x Definitive Proxy Statement

¨ Definitive Additional Materials

¨ Soliciting Material Pursuant to §240.14a-12

Synopsys, 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):

x No fee required.

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

(1) Title of each class of securities to which transaction applies:

(2) Aggregate number of securities to which transaction applies:

(3) Per unit price or other underlying value of transaction computed pursuant to Exchange Act Rule 0-11 (set forth the amount on which the filing fee is calculated and state how it was determined):

(4) Proposed maximum aggregate value of transaction:

(5) Total fee paid:

¨ Fee paid previously with preliminary materials.

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

(1) Amount Previously Paid:

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

(3) Filing Party:

(4) Date Filed:

Table of Contents

NOTICE OF 2011 ANNUAL MEETING OF STOCKHOLDERS

March 24, 2011

To the Stockholders of Synopsys, Inc.:

We hereby give you notice that the Annual Meeting of Stockholders of Synopsys, Inc., a Delaware corporation, will be held on March 24, 2011, at 8:00 a.m. Pacific Time at our office located at 1030 West Maude Avenue, Sunnyvale, California 94085, in order to vote on the following proposals:

1. Election of eight directors nominated by our Board of Directors to serve for the ensuing year and until their successors are elected.

2. Approval of an amendment to our 2006 Employee Equity Incentive Plan to, among other items, increase the number of shares of common stock reserved under the plan for future issuance by 7,000,000 shares.

3. Advisory vote on executive compensation.

4. Advisory vote on the frequency of holding an advisory vote on executive compensation.

5. Ratification of the selection by our Audit Committee of KPMG LLP as our independent registered public accounting firm for the fiscal year ending October 31, 2011.

6. Transact such other business as may properly come before the meeting.

You will find the above items of business more fully described in the Proxy Statement accompanying this Notice.

All of our stockholders of record at the close of business on January 28, 2011 are entitled to receive notice of, to attend, and to vote at the meeting. A list of registered stockholders entitled to vote at the meeting will be available at our office located at 1030 West Maude Avenue, Sunnyvale, California 94085, for ten days prior to the meeting and at the meeting location during the meeting. We cordially invite all stockholders to attend the meeting in person. However, to assure your representation at the meeting, we urge you to submit the enclosed proxy as promptly as possible.

Sincerely,

Brian E. Cabrera

Vice President, General Counsel and

Corporate Secretary

Mountain View, California

February 9, 2011

YOUR VOTE IS VERY IMPORTANT, REGARDLESS OF THE NUMBER OF SHARES YOU OWN. PLEASE READ THE ATTACHED PROXY STATEMENT CAREFULLY. COMPLETE, SIGN AND DATE THE ENCLOSED PROXY CARD AND RETURN THE PROXY CARD IN THE ENCLOSED ENVELOPE, OR SUBMIT YOUR PROXY VOTING INSTRUCTIONS THROUGH THE INTERNET OR TELEPHONE, AS PROMPTLY AS POSSIBLE. EVEN IF YOU HAVE PREVIOUSLY SUBMITTED A PROXY, YOU MAY STILL VOTE IN PERSON BY ATTENDING THE MEETING. PLEASE NOTE, HOWEVER, THAT IF YOUR SHARES ARE HELD OF RECORD BY A BROKER, BANK OR OTHER NOMINEE AND YOU WISH TO VOTE AT THE MEETING, YOU MUST OBTAIN A PROXY ISSUED IN YOUR NAME FROM THAT RECORD HOLDER.

Table of Contents

TABLE OF CONTENTS

Table of Contents

PROXY STATEMENT

FOR THE 2011 ANNUAL MEETING OF STOCKHOLDERS

TO BE HELD ON MARCH 24, 2011

INFORMATION CONCERNING SOLICITATION AND VOTING

Our Board of Directors is soliciting proxies for our 2011 Annual Meeting of Stockholders (referred to in this Proxy Statement as the Annual Meeting) to be held on Thursday, March 24, 2011 at 8:00 a.m. Pacific Time at 1030 West Maude Avenue, Sunnyvale, California 94085. Our principal executive offices are located at 700 East Middlefield Road, Mountain View, California 94043, and our telephone number is (650) 584-5000.

The proxy materials, including this Proxy Statement, the proxy card or voting instruction form, and our 2010 Annual Report on Form 10-K, are being distributed and made available on or about February 11, 2011. This Proxy Statement contains important information for you to consider when deciding how to vote on the matters brought before the meeting. Please read it carefully.

For more information about this solicitation and voting, please see the Questions and Answers section below.

QUESTIONS AND ANSWERS

Q: Why did I receive a notice about Synopsys, Inc. s proxy materials?

A: If you owned common stock of Synopsys, Inc. at the close of business on January 28, 2011, the Record Date, you are considered a stockholder. Accordingly, we are providing you with access to our proxy materials in order to solicit your vote at the Annual Meeting.

Q: Why did I receive a two-page notice instead of the proxy materials themselves and how can I get the materials?

A: We are pleased to continue to take advantage of the U.S. Securities and Exchange Commission rule that allows companies to furnish proxy materials to their stockholders over the Internet. As a result, we are mailing to most of our stockholders a two-page Notice of Availability of Proxy Materials instead of a printed copy of all of the proxy materials. The Notice of Availability of Proxy Materials you received provides instructions on how to access and review our proxy materials and submit your vote on the Internet and also instructs you on how to request a printed copy of our proxy materials. We believe this process of sending a two-page notice reduces the environmental impact of printing and distributing hard copy materials and lowers the costs of such printing and distribution.

Q: Why did I receive a full set of proxy materials in the mail instead of a two-page notice?

A: If you previously requested printed copies of the proxy materials, we have provided you with printed copies of the proxy materials instead of a two-page Notice of Availability of Proxy Materials. If you would like to reduce the environmental impact and the costs incurred by us in mailing proxy materials, you may elect to receive all future proxy materials electronically via email or the Internet.

Table of Contents

To sign up for electronic delivery, please follow the instructions to vote using the Internet provided with your proxy materials and on your proxy card or voting instruction form, and, when prompted, indicate that you agree to receive or access stockholder communications electronically in the future.

Q: What proposals will be presented at the Annual Meeting and what are the voting recommendations of the Board of Directors?

A: The proposals that will be presented at the Annual Meeting and our Board s voting recommendations are set forth in the table below:

Proposal	Board s Voting Recommendation
1. Election of eight directors nominated by our Board of Directors to serve for the ensuing year and until their successors are elected	For all nominees
2. Approval of an amendment to our 2006 Employee Equity Incentive Plan to, among other items, increase the number of shares of common stock reserved under the plan for future issuance by 7,000,000 shares	For
3. Advisory vote on executive compensation	For
4. Advisory vote on the frequency of holding an advisory vote on executive compensation	1 Year
5. Ratification of the selection of KPMG LLP as our independent registered public accounting firm for the fiscal year ending October 31, 2011	For

We will also consider any other business that properly comes before the Annual Meeting. As of February 9, 2011, we are not aware of any other matters to be submitted for consideration at the Annual Meeting. If any other matters are properly brought before the meeting, the persons named in the enclosed proxy card or voting instruction form will vote the shares they represent using their best judgment.

Q: When and where will the Annual Meeting be held?

A: The Annual Meeting will be held on March 24, 2011, at 8:00 a.m. Pacific Time at our office located at 1030 West Maude Avenue, Sunnyvale, California 94085. A map and directions are set forth on the back of this Proxy Statement.

Q: How can I attend the Annual Meeting?

A: You will be admitted to the Annual Meeting if you were a Synopsys stockholder or joint holder as of the close of business on January 28, 2011, or you have authority to vote under a valid proxy for the Annual Meeting. You should be prepared to present photo identification for admittance. In addition, if you are a stockholder of record, your name will be verified against the list of stockholders of record prior to admittance to the Annual Meeting. If you are a beneficial owner, you should provide proof of beneficial ownership on the Record Date, such as your most recent account statement prior to January 28, 2011, a copy of the voting instruction form provided by your broker, trustee, or nominee, or other similar evidence of ownership. If you are a stockholder who is a natural person and not an entity, you and your immediate family members will be admitted to the Annual Meeting, provided you and they comply with the above procedures.

Q: Who can vote?

A: If you are a stockholder of record or a beneficial owner who owned our common stock at the close of business on the Record Date of January 28, 2011, you are entitled to attend and vote at the Annual Meeting. As of the Record Date, 149,246,111 shares of our common stock were

Table of Contents

outstanding and entitled to vote. You are entitled to one vote for each share of common stock you held on the Record Date. Whether or not you plan to attend the Annual Meeting, we urge you to submit your proxy.

Q: What is the difference between a stockholder of record and a beneficial owner?

A: *Stockholder of Record:* If on the Record Date your shares were registered directly in your name with our transfer agent, Computershare Investor Services, then you are a stockholder of record.

Beneficial Owner: If on the Record Date your shares were held through a broker, bank, or other agent and not in your name, then you are the beneficial owner of our common stock. If you are a beneficial owner, your shares are held in street name, as is the case for most of our stockholders.

Q: How can I vote if I am a stockholder of record?

A: There are four ways to vote:

In person. If you are a stockholder of record, you may vote in person at the Annual Meeting. We will provide a ballot to you when you arrive.

Via the Internet. You may vote by proxy via the Internet by following the instructions provided in the proxy card or Notice of Availability of Proxy Materials.

By Telephone. If you received printed copies of the proxy materials, you may vote by proxy by calling the toll free number found on the proxy card. If you only received a Notice of Availability of Proxy Materials and wish to vote by proxy over the telephone, you may do so by first requesting printed copies of the proxy materials by mail and then calling the toll free number found on the proxy card.

By Mail. If you received printed copies of the proxy materials, you may vote by proxy by filling out the proxy card and sending it back in the envelope provided. If you only received a Notice of Availability of Proxy Materials and wish to vote by proxy via mail, you may do so by first requesting printed copies of the proxy materials by mail and then filling out the proxy card and sending it back in the envelope provided.

Whether or not you plan to attend the meeting, we urge you to vote by proxy.

Q: How can I vote if I am the beneficial owner?

A: There are four ways to vote:

In person. If you are a beneficial owner and you wish to vote in person at the Annual Meeting, you must obtain a legal proxy from the organization that holds your shares. Please contact that organization for instructions regarding obtaining a legal proxy.

Via the Internet. You may vote by proxy via the Internet by following the instructions provided in the voting instruction form or Notice of Availability of Proxy Materials.

By Telephone. If you received printed copies of the proxy materials, you may vote by proxy by calling the toll free number found on the voting instruction form. If you only received a Notice of Availability of Proxy Materials and wish to vote by proxy over the telephone, you may do so by first requesting printed copies of the proxy materials by mail and then calling the toll free number found on the voting instruction form.

By Mail. If you received printed copies of the proxy materials, you may vote by proxy by filling out the voting instruction form and sending it back in the envelope provided. If you only received a Notice of Availability of Proxy Materials and wish to vote by proxy via mail, you may do so by first requesting printed copies of the proxy materials by mail and then filling out the voting instruction form and sending it back in the envelope provided.

Table of Contents

As a beneficial owner, you are also invited to attend the Annual Meeting. However, since you are not a stockholder of record, you may not vote your shares in person at the Annual Meeting unless you request and obtain a legal proxy from the organization that holds your shares.

Q: What votes can I cast for the proposals?

A: With respect to Proposal 1, you may either vote For all the nominees to our Board of Directors or you may Withhold your vote for any nominee you specify. With respect to Proposals 2, 3 and 5, you may vote For or Against , or Abstain from voting. With respect to Proposal 4, you may vote for 1 Year , 2 Years or 3 Years , or Abstain from voting. An abstention vote will have the same effect as an Against vote with respect to Proposal 2 and Proposal 5. An abstention vote will not be counted as either a vote cast For or Against with respect to Proposal 3 or as a vote for 1 Year , 2 Years or 3 Years with respect to Proposal 4.

Q: What if I don t give specific voting instructions?

A: If you indicate a choice on your proxy on a particular matter to be acted upon, the shares will be voted as indicated.
If you are a stockholder of record and you return a signed proxy card but do not indicate how you wish to vote, the proxy holders will vote your shares in the manner recommended by our Board of Directors on all matters presented in this proxy statement and as the proxy holders may determine in their discretion with respect to any other matters properly presented for a vote at the Annual Meeting. If you do not return the proxy card, your shares will not be voted and will not be deemed present for the purpose of determining whether a quorum exists.

If you are a beneficial owner and the organization holding your account does not receive instructions from you as to how to vote those shares, under the rules of various national and regional securities exchanges, that organization may exercise discretionary authority to vote on routine proposals but may not vote on non-routine proposals. As a beneficial owner, you will not be deemed to have voted on such non-routine proposals. The shares that cannot be voted by brokers on non-routine matters are called broker non-votes. Broker non-votes will be deemed present at the Annual Meeting for purposes of determining whether a quorum exists for the Annual Meeting. Broker non-votes will make a quorum more readily obtainable but will not otherwise affect the outcome of the vote of any proposal.

Q: Which ballot measures are considered routine or non-routine ?

A: The ratification of the appointment of KPMG LLP as our independent registered public accounting firm for fiscal 2011 (Proposal 5) is a matter considered routine under applicable rules. A broker or other nominee may generally vote on routine matters, and therefore no broker non-votes are expected to exist in connection with Proposal 5.
The election of directors (Proposal 1), the proposal to amend our 2006 Employee Equity Incentive Plan (Proposal 2), the advisory vote on executive compensation (Proposal 3) and the advisory vote on the frequency of the advisory vote on executive compensation (Proposal 4) are matters considered non-routine under applicable rules. A broker or other nominee cannot vote without instructions on non-routine matters, and therefore there may be broker non-votes on Proposals 1, 2, 3 and 4.

Q: What if I change my mind and want to revoke my proxy?

A: If you are a stockholder of record, you may revoke your proxy at any time before the Annual Meeting by delivering a written notice of revocation or a duly executed proxy card bearing a later date to our principal executive offices at 700 East Middlefield Road, Mountain View,

Table of Contents

California 94043, attention Corporate Secretary. Such notice or later dated proxy must be received by us prior to the Annual Meeting. You may also revoke your proxy by attending the Annual Meeting and voting in person.

If you are a beneficial owner, please contact your broker, bank or other agent for instructions on how to revoke your proxy.

Q: What is a quorum?

A: We need a quorum of stockholders to hold our Annual Meeting. A quorum exists when at least a majority of the outstanding shares entitled to vote on the Record Date are represented at the Annual Meeting either in person or by proxy. Your shares will be counted towards the quorum only if a valid proxy or vote is submitted. Stockholders who vote Abstain on any proposal and discretionary votes by brokers, banks and related agents on routine proposals will be counted towards the quorum requirement.

Q: Who is paying for this solicitation?

A: Synopsys will bear the cost of soliciting proxies. We have retained D.F. King & Co., Inc. to assist us in soliciting proxies, for which we will pay D.F. King & Co. a fee of approximately $10,000 plus out-of-pocket expenses. We will also reimburse brokerage firms and other persons representing beneficial owners of shares for their reasonable expenses in forwarding solicitation material to such beneficial owners. We will furnish copies of solicitation material to such brokerage firms and other representatives. Proxies may also be solicited personally or by telephone, facsimile or email by our directors, officers and employees without additional compensation.

Q: I received notice that communications to my address are being householded. What does that mean?

A: The Securities and Exchange Commission has adopted rules that permit companies and intermediaries (for example, brokers) to satisfy the delivery requirements for proxy statements and annual reports with respect to two or more stockholders sharing the same address by delivering a single proxy statement or Notice of Availability of Proxy Materials addressed to those stockholders. A number of brokers with account holders who are our stockholders household our proxy materials in this manner. If you have received notice from your broker that it will be householding communications to your address, householding will continue until you are notified otherwise or until you revoke your consent. If, at any time, you no longer wish to participate in householding and would prefer to receive a separate proxy statement, 2010 Annual Report on Form 10-K or Notice of Availability of Proxy Materials, please notify your broker and our investor relations department in writing at 700 East Middlefield Road, Mountain View, California 94043, by email at *invest-info@synopsys.com* or by telephone at (650) 584-4257. If you currently receive multiple copies of the Notice of Availability of Proxy Materials or proxy statement at your address and would like to request householding of your communications, please contact your broker, bank or other agent.

Q: I also have access to Synopsys, Inc. s 2010 Annual Report on Form 10-K. Is that a part of the proxy materials?

A: Our Annual Report on Form 10-K for the fiscal year ended October 31, 2010, as filed with the Securities and Exchange Commission on December 17, 2010 and amended on February 9, 2011 (referred to in this Proxy Statement as the 2010 Annual Report on Form 10-K), accompanies this Proxy Statement. These documents constitute our Annual Report to Stockholders and are being made available to all stockholders entitled to receive notice of and to vote at the Annual Meeting. Except as otherwise stated, the Annual Report on Form 10-K is not incorporated into this Proxy Statement and should not be considered proxy solicitation material.

Table of Contents

Q: Where can I find the voting results of the meeting?

A: The preliminary voting results will be announced at the Annual Meeting. The final results will be published in a Current Report on Form 8-K, which we will file with the Securities and Exchange Commission by March 30, 2011.

Q: How can I make a proposal to be voted on at next year s annual meeting of stockholders?

A: To be considered for inclusion in the proxy materials for next year s annual meeting of stockholders, your proposal must be submitted in writing by October 14, 2011 to Corporate Secretary, c/o Synopsys, Inc., 700 East Middlefield Road, Mountain View, California 94043, and must comply with all applicable requirements of Rule 14a-8 promulgated under the Securities Exchange Act of 1934, as amended (referred to in this Proxy Statement as the Exchange Act). If you wish to submit a proposal that is not to be included in next year s proxy materials, but that may be considered at the annual meeting of stockholders to be held in 2012, you must do so in writing following the above instructions not earlier than the close of business on September 14, 2011 and not later than the close of business on October 14, 2011. We advise you to review our Bylaws, which contain additional requirements about advance notice of stockholder proposals and director nominations, including the different notice submission date requirements in the event our annual meeting for 2012 is held more than 30 days before or after March 24, 2012. The section titled Director Nominations on page 63 of this Proxy Statement provides additional information on the director nomination process.

Table of Contents

MATTERS TO BE CONSIDERED AT ANNUAL MEETING

PROPOSAL 1

ELECTION OF DIRECTORS

Our Board of Directors is elected each year at the annual meeting of stockholders. Synopsys currently has eight directors. Upon the recommendation of the Corporate Governance and Nominating Committee of our Board of Directors, each of the current directors has been nominated by our Board for election at the Annual Meeting and has decided to stand for election.

Provided that there is a quorum at the Annual Meeting, the eight nominees receiving the highest number of For votes of the shares present in person or represented and entitled to vote at the Annual Meeting will be elected as directors. In the event a nominee is unable or declines to serve as a director, the proxies will be voted at the Annual Meeting for any nominee who may be designated by our Board of Directors to fill the vacancy. As of the date of this Proxy Statement, our Board is not aware of any nominee who is unable or will decline to serve as a director. Each director to be elected at the Annual Meeting will serve until our next annual meeting of stockholders and until his or her successor is elected and qualified or, if earlier, the director s death, resignation or removal. You may either vote For all the nominees to our Board of Directors or you may Withhold your vote for any nominee you specify. Unless marked otherwise, proxies returned to us will be voted for each of the nominees named below. If you hold your shares through a bank, a broker or other holder of record you must instruct your bank, broker or other holder of record to vote so that your vote can be counted on this Proposal 1.

The election of directors pursuant to this Proposal 1 is an uncontested election. In addition to the voting requirements under Delaware law described above, our Corporate Governance Guidelines provide that in an uncontested election any nominee for director who receives a greater number of votes Withheld from his or her election than votes For such election will, promptly following certification of the stockholder vote, submit to our Board of Directors a letter of resignation for consideration by the Corporate Governance and Nominating Committee. Our Board, after taking into consideration the recommendation of the Corporate Governance and Nominating Committee, will determine whether to accept the director s resignation. Synopsys will publicly disclose the decision reached by our Board and the reasons for such decision.

OUR BOARD OF DIRECTORS RECOMMENDS THAT YOU

VOTE FOR ALL NOMINEES.

Nominees

Set forth below is information regarding the nominees, including information they have furnished as to their principal occupations, certain other directorships they hold, or have held, and their ages as of the Record Date, January 28, 2011. The section titled Director Qualifications on page 62 of this Proxy Statement contains information about the nomination process and the skills and other qualifications that caused the Nominating and Governance Committee to determine that these nominees should serve as our directors. Other than Dr. de Geus and Dr. Chan, all nominees are independent as required by the listing standards of the NASDAQ Global Select Market.

Name	Age	Year First Elected Director
Aart J. de Geus	56	1986
Alfred Castino	58	2007
Chi-Foon Chan	61	1998
Bruce R. Chizen	55	2001
Deborah A. Coleman	58	1995
John Schwarz	60	2007
Roy Vallee	58	2003
Steven C. Walske	58	1991

Table of Contents

There are no family relationships among any of the director nominees, directors and/or any of Synopsys executive officers.

Background and Qualifications of Nominees

Aart J. de Geus co-founded Synopsys and has served as Chairman of our Board of Directors since February 1998 and Chief Executive Officer since January 1994. Since the inception of Synopsys in December 1986, he has held a variety of positions, including President, Senior Vice President of Engineering and Senior Vice President of Marketing. Dr. de Geus has served as a director since 1986, and served as Chairman of our Board of Directors from 1986 to 1992 and again from 1998 until present. Dr. de Geus has also served on the board of directors of Applied Materials, Inc. since July 2007.

As a co-founder of Synopsys, Dr. de Geus has led Synopsys for 25 years, and is considered a pioneer in the Electronic Design Automation (referred to in this Proxy Statement as EDA) industry. Dr. de Geus brings to our Board a unique and thorough understanding of our business, industry and culture. He provides strong executive leadership and vision and maintains a global network of customer and industry relationships. Dr. de Geus also provides our Board with public company board experience.

Alfred Castino has been a member of our Board of Directors since May 2007. Mr. Castino has been an independent business consultant since August 2008. From August 2002 to August 2008, Mr. Castino served as Senior Vice President and Chief Financial Officer of Autodesk, Inc., a provider of design software for the manufacturing, building and construction, and media and entertainment markets. Mr. Castino has also held the Chief Financial Officer position at Virage, Inc. and PeopleSoft, Inc. Mr. Castino has served on the board of directors of Digital River, Inc. since July 2010.

As the former Chief Financial Officer of Autodesk, Mr. Castino led the financial management of a large public technology company, providing our Board of Directors with executive-level expertise in the financial management of software companies and financial expertise in general. Mr. Castino understands the challenges of managing complex global organizations from his leadership positions at Autodesk, Virage and PeopleSoft, and also brings public company board experience to our Board.

Chi-Foon Chan has served as our Chief Operating Officer since April 1997 and as our President and a member of our Board of Directors since February 1998. Dr. Chan joined Synopsys in May 1990 and has held various senior management positions, including Executive Vice President, Office of the President from September 1996 to February 1998 and Senior Vice President, Design Tools Group from February 1994 to April 1997. Dr. Chan has also held senior management and engineering positions at NEC Electronics and Intel Corporation.

Dr. Chan brings to our Board of Directors senior executive-level leadership, strategic, and operational expertise of Synopsys as well as the EDA industry. Dr. Chan has been with Synopsys for over 20 years and has served as our Chief Operating Officer and President for over 13 years, which provides our Board with a thorough understanding of our business, operations and technology strategies. He has extensive knowledge of the overall EDA industry landscape, and he provides particular expertise in the Asia-Pacific region. Dr. Chan also provides our Board extensive research and development and engineering experience in the semiconductor industry gained from his leadership positions at NEC and Intel.

Bruce R. Chizen has been a member of our Board of Directors since April 2001. He is currently an independent consultant and has served as Senior Adviser to Permira Advisers LLP since July 2008. From November 2007 to November 2008, Mr. Chizen served as a strategic adviser to Adobe Systems

Table of Contents

Incorporated, a provider of design, publishing and imaging software for print, Internet and dynamic media production. From December 2000 to November 2007, he served as Adobe s Chief Executive Officer and as its President from April 2000 to January 2005 and previously held various other positions at Adobe since 1994. Mr. Chizen has served on the board of directors of Oracle Corporation since July 2008 and served on the board of directors of Adobe from December 2000 to April 2008.

Mr. Chizen has significant expertise in the management of complex global organizations. As the former Chief Executive Officer of Adobe, Mr. Chizen provides our Board of Directors with executive-level insight into the challenges associated with operating in a high technology industry and a multi-billion dollar company. Additionally, Mr. Chizen brings significant financial, product management and marketing expertise, which he gained through various leadership positions at Adobe. Mr. Chizen also provides extensive public company board experience to our Board.

Deborah A. Coleman has been a member of our Board of Directors since November 1995. Ms. Coleman is a General Partner of SmartForest Ventures, a venture capital firm, which she co-founded in June 2000. Ms. Coleman has held various senior executive-level positions throughout her career, including Chairman, Chief Executive Officer and President of Merix Corporation, a manufacturer of printed circuit boards, and Chief Financial Officer and Vice President of Operations of Apple, Inc. Ms. Coleman served on the board of directors of Applied Materials, Inc. from March 1996 to March 2009.

Ms. Coleman has significant experience leading large public technology companies. She brings to our Board of Directors executive-level management and financial expertise. Additionally, Ms. Coleman provides our Boards with extensive operations and manufacturing experience through her leadership positions at Merix and Apple. Having served over ten years as a director of Applied Materials, Ms. Coleman brings extensive public company experience, as well as a thorough understanding of the semiconductor industry.

John Schwarz has been a member of our Board of Directors since May 2007. Since May 2010, Mr. Schwarz has served as co-founder and Chief Executive Officer of Visier LLC, a business analytics software firm. Mr. Schwarz previously served on the executive board of SAP AG from March 2008 to February 2010. From September 2005 through its acquisition by SAP in January 2008, Mr. Schwarz was the Chief Executive Officer of Business Objects S.A., a provider of business intelligence software and services, and he served as the Chief Executive Officer of SAP s Business Objects unit through February 2010. Mr. Schwarz served on Business Object s board of directors from January 2006 until its acquisition. Mr. Schwarz has also served as the President and Chief Operating Officer of Symantec Corporation, a provider of infrastructure security and storage management software and as President and Chief Executive Officer of Reciprocal Inc., a business-to-business e-commerce services company. Mr. Schwarz previously spent 25 years at IBM Corporation, where he was most recently General Manager of IBM s Industry Solutions Unit. Mr. Schwarz has served as a director at SuccessFactors, Inc. and Teradata Corporation since September 2010.

As the former Chief Executive Officer of Business Objects, Mr. Schwarz led a large international software company and brings to our Board of Directors extensive management expertise and knowledge of the software industry. Mr. Schwarz understands the complexities of leading a global organization and operating in international markets. Mr. Schwarz provides our Board with additional expertise related to strategic acquisitions, integration and operations through his leadership of Business Objects acquisition by SAP. Mr. Schwarz also provides our Board with public company board experience.

Roy Vallee has been a member of our Board of Directors since February 2003. Since June 1998, Mr. Vallee has served as Chief Executive Officer and Chairman of the board of directors of Avnet, Inc.,

Table of Contents

a global semiconductor/electronics products and IT distributor. Mr. Vallee previously served as Avnet s Vice Chairman, President, and Chief Operating Officer. Since February 2000, Mr. Vallee has served on the board of directors of Teradyne, Inc. Mr. Vallee also serves as a member of the Arizona Commerce Authority Executive Committee.

Mr. Vallee provides our Board of Directors with significant executive-level leadership expertise, as well as a thorough understanding of the semiconductor industry. Mr. Vallee has led Avnet for over 12 years and has keen insight into the challenges of managing a public technology company in a volatile industry. Mr. Vallee also brings public company board experience to our Board, as well as experience with economic development and government relations through his membership in the Arizona Commerce Authority.

Steven C. Walske has been a member of our Board of Directors since December 1991. Mr. Walske has been Managing Director of Myriad Investments, LLC, a private equity firm specializing in investments in software companies, since June 2000. Mr. Walske served as Chief Business Strategist of Parametric Technology Corporation from June 2000 until June 2005. From 1986 through June 2000, Mr. Walske held several executive-level positions at Parametric Technology Corporation, including Chief Executive Officer, President and Chairman of the board of directors. Mr. Walske served on the board of directors of BladeLogic, Inc. from November 2002 to April 2008, holding the Chairman position from 2005 to April 2008.

As a private equity investor, Mr. Walske provides our Board of Directors with financial and strategic planning expertise, as well as extensive knowledge of the software and other high technology industries. Having served as the former Chief Executive Officer of Parametric Technology Corporation, Mr. Walske brings product development and executive-level management expertise as well as an understanding of complex global organizations. As a long time member of the board of directors of Parametric and BladeLogic, Mr. Walske provides our Board with extensive public company board experience.

Table of Contents

PROPOSAL 2

APPROVAL OF AN AMENDMENT OF OUR 2006 EMPLOYEE EQUITY INCENTIVE PLAN

Subject to stockholder approval, our Board of Directors approved an amendment (referred to in this Proxy Statement as the Amendment) of our 2006 Employee Equity Incentive Plan (referred to in this Proxy Statement as the 2006 Employee Plan) in December 2010 to address the periodic need to replenish the number of shares available under the 2006 Employee Plan to issue future equity awards to our employees.

The Amendment would, among other things, increase the number of shares of common stock available for future issuance under the 2006 Employee Plan by 7,000,000 shares, representing approximately 4.7% of the shares of common stock outstanding as of January 1, 2011. If approved by our stockholders, the Amendment will become effective as of the Annual Meeting date.

Approval of the Amendment requires the affirmative vote of the holders of a majority of the shares present in person or represented by proxy and entitled to vote at the Annual Meeting. Abstentions will have the same effect as a negative vote.

OUR BOARD OF DIRECTORS RECOMMENDS THAT YOU VOTE FOR THE APPROVAL OF THE AMENDMENT TO THE 2006 EMPLOYEE PLAN.

Purpose and Background

The purpose of this Amendment is to provide us with a sufficient reserve of common stock to offer appropriate incentives to our employees. Like all technology companies, we actively compete for highly qualified employees, especially technical employees. Our equity program is a key component of our strategy to attract and retain those individuals. Each year the Compensation Committee of our Board of Directors and management review our overall compensation strategy and determine the allocations of cash and equity compensation in light of our pay for performance philosophy. We continue to believe that equity compensation is a critical component to motivate key employees and effectively aligns employee compensation with stockholder interests. The 2006 Plan is the sole available plan for providing equity grants to our employees. If the Amendment is not approved and we are unable to grant equity compensation in the future, we may need to consider other compensation alternatives, such as increasing cash compensation.

We are committed to effectively managing our equity compensation share reserve while minimizing stockholder dilution. For this reason, we carefully manage both our gross burn rate and net burn rate. Gross burn rate reflects equity awards granted during the fiscal year divided by the number of shares outstanding. Net burn rate reflects equity awards granted during the year less equity awards cancelled and returned to the plans (net equity grants), divided by the number of shares outstanding. We endeavor to ensure that our gross burn rate approximates the average rate for our peer group companies as well as for the software and services industry more generally, and that our burn rates are within the limits recommended by independent shareholder advisory groups, such as Institutional Shareholders Service (referred to in this Proxy Statement as ISS). While there are several methodologies to arrive at burn rates, using ISS current methodology, our gross burn rates for the last three years are well within the guidelines recommended by ISS. Detailed information about equity awards issued in fiscal 2010 as well as other relevant information is set forth below.

We note that the cornerstone of our compensation philosophy as discussed in the Compensation Discussion and Analysis beginning on page 28 is pay for performance and in that regard, more than half of the value of the equity grants to our named executive officers in fiscal 2010 was in performance-

Table of Contents

based RSU grants, and the balance was in stock option grants directly linked to the appreciation of our stock price. We also note that our 2006 Employee Plan includes additional provisions that are designed to protect our stockholders interests and to reflect corporate governance best practices, including:

Stockholder approval required for additional shares. The 2006 Employee Plan does not contain an annual evergreen provision that provides for automatic increases of shares on an ongoing basis. The 2006 Employee Plan instead authorizes a fixed number of shares, and stockholder approval is required for any increase in the number of shares.

No discounted stock options or stock appreciation rights. All stock options and stock appreciation rights must have an exercise price equal to or greater than the fair market value of our common stock on the date of grant.

Repricing not allowed. The 2006 Employee Plan expressly prohibits the repricing of equity awards including the cancellation and re-grant of new equity awards without prior stockholder approval.

Reasonable share counting provisions. In general, when awards lapse or are cancelled, the shares reserved for those awards are returned to the share reserve and become available for future awards. However, shares of common stock tendered to us in payment of the exercise price or to cover tax withholdings are not returned to our share reserve.

7 Year Term. All equity awards granted under the 2006 Employee Plan have a term of no more than seven years. In 2009, we amended the plan to establish seven years as the maximum permissible term for all equity awards, thereby limiting the potential for unproductive overhang.

Fungible Share Reserve. The 2006 Employee Plan has a fungible share reserve, which increases the rate at which the share reserve is depleted for restricted stock and restricted stock unit awards, in order to minimize stockholder dilution.

Historical Grant Information

No awards have been granted or promised with respect to the additional 7,000,000 shares requested. Awards under our 2006 Employee Plan are made at the discretion of our Board of Directors or the Compensation Committee and are therefore not determinable at this time. The following tables set forth detailed information about our historical equity compensation practices.

Awards Granted to Certain Individuals and Groups under the 2006 Employee Plan

The following table shows, for each of the named executive officers and the various groups indicated, the number of stock options and restricted stock units granted under the 2006 Employee Plan during fiscal 2010, together with the weighted-average exercise price per share for the stock options:

g from a few days to a few weeks, with an average length of stay of approximately six days. Other supportive measures during hospitali

d the consistency of a positive response across multiple measures, demonstrate the potential benefit of rivipansel.

nsel.

itiation of intravenous opioid therapy. The primary endpoint for the trial will be time to readiness-for-discharge. Key secondary endpoi

on of the trial. In the Phase 2 portion, one cohort of 25 patients over 60 years of age with newly diagnosed AML and a second cohort of

lated with a worse clinical prognosis. The addition of uproleselan in our study appears to have reversed this trend toward worsened pro

uproleselan in addition to chemotherapy. Patients receiving uproleselan will be dosed for one day prior to initiation of chemotherapy, tw

illion upon the initiation of dosing of the first patient in a Phase 3 trial of rivipansel by Pfizer. Under the license agreement, Pfizer mad

the stage of clinical development at the time of such termination.

f

utes of a meeting between the sponsor and the FDA and made part of the administrative record.

edures.

executing a scheme to defraud any healthcare benefit program, including private third-party payors and knowingly and willfully falsifyi

ys general new authority to file civil actions for damages or injunctions in federal courts to enforce the federal HIPAA laws and seek at

in a foreign country, we may be subject to similar foreign laws and regulations, which may include, for instance, applicable post-marke

asingly attempting to limit or regulate the price of medical products and services, particularly for new and innovative products and thera

cost-effective. A payor's decision to provide coverage for a drug product does not imply that an adequate reimbursement rate will be ap

and substantially changed the way healthcare is financed by both governmental and private insurers. Among other measures that may ha

o-called “Cadillac” tax on certain high cost employer-sponsored insurance plans, the annual fee imposed on certain health insurance pr

e importation from other countries and bulk purchasing.

s period for the government to recover overpayments to providers from three to five years. These and other healthcare reform initiatives

valence testing. Drugs approved in this way are commonly referred to as “generic equivalents” to the listed drug, and can often be subst

ed clinical trials necessary to demonstrate safety and effectiveness.

ure regulatory approval in another, but a failure or delay in obtaining regulatory approval in one country may negatively impact the regu

d as a greater than 50% change, by value, in its equity ownership over a three-year period, the corporation’s ability to use its pre-change

dicate that they are unlikely to be drugs that will receive marketing approval and achieve market acceptance. If we do not successfully d

cluding:

ed their drug candidates performed satisfactorily in preclinical studies and clinical trials have nonetheless failed to obtain marketing app

ties of our collaborators.

n acceptable terms, or at all, we may have to curtail the development of a drug candidate, reduce or delay its development or one or mo

rsement may not be available for any drug that we or our collaborators commercialize and, even if these are available, the level of reimb

estrict imports of drugs from countries where they may be sold at lower prices than in the United States. Third-party payors often rely u

e drug candidates, even if our drug candidates obtain marketing approval.

of our patent applications and the enforcement or defense of our issued patents, all of which could have a material adverse effect on our

ation of patent litigation or other proceedings could compromise our ability to compete in the marketplace.

to whom they communicate it, from using that technology or information to compete with us. If any of our trade secrets were to be disc

rmation to regulatory authorities for each therapeutic indication to establish the drug candidate's safety and efficacy. Securing marketin

or subject to restrictions or post-approval commitments that render the approved drug not commercially viable.

United States and 10 years in the EU. The EU exclusivity period can be reduced to six years if a drug no longer meets the criteria for o

s in other countries or jurisdictions or by the FDA. However, failure to obtain approval in one jurisdiction may impact our ability to obta

of our drug, which could limit its sales.

he curtailment or restructuring of our operations, which could have a material adverse effect on our business. If any of the physicians or

ency requirements for the healthcare and health insurance industries, impose new taxes and fees on the health industry and impose addit

r any legislation that may be proposed to replace PPACA will impact our business.

ugs, if approved, and, accordingly, our financial operations.

venue, attain profitability or commercialize our drugs.

iotechnology companies for similar personnel. We also experience competition for the hiring of scientific and clinical personnel from u

s, which could result in regulatory sanctions and serious harm to our reputation. We have adopted a code of business conduct and ethics

housands, except share and per share data)	Year Ended December 31, 2018	2017	2016	2015
ement of Operations Data:				
enue	$ —	$ —	$ 18	$ 20,071
s and expenses:				
earch and development expense	40,092	24,100	23,282	25,050
eral and administrative expense	11,413	9,832	8,650	7,805
l costs and expenses	51,505	33,932	31,932	32,855
from operations	(51,505)	(33,932)	(31,914)	(12,784)
r income	3,231	651	104	15
loss and comprehensive loss	$ (48,274)	$ (33,281)	$ (31,810)	$ (12,769)
loss per share of common stock—basic and diluted	$ (1.18)	$ (1.13)	$ (1.50)	$ (0.67)
ghted average common shares outstanding, basic and diluted	41,044,621	29,395,756	21,256,312	19,010,58

(in thousands)	As of December 31, 2018	2017	2016	2015	2014
Balance Sheet Data:					
Cash and cash equivalents	$ 209,918	$ 123,925	$ 40,042	$ 46,803	$ 55,199
Total assets	214,839	128,583	42,388	48,462	57,264
Total liabilities	9,375	8,882	7,087	7,991	6,461
Total stockholders' equity	205,464	119,701	35,301	40,472	50,803

elated functions of certain carbohydrates in order to develop novel drug candidates to address orphan diseases with high unmet medical

we have been notified by Pfizer that it expects to complete enrollment in early 2019 and to have top-line data from the trial in the seco

addition to chemotherapy. Patients receiving uproleselan will be dosed for one day prior to initiation of chemotherapy, twice a day throu

al trials evaluating alternative chemotherapy regimens. We will supply uproleselan as well as provide financial support to augment data

search grants.

re were no securities sold during the year ended December 31, 2018 under our sales agreement with Cowen.

erate positive cash flow from operating activities.

ified regulatory milestones, including the acceptance of our filings for regulatory approval by regulatory authorities in the United States

hat an entity determines are within the scope of Topic 606, we perform the following five steps: (i) identify the contract(s) with the custo

Any such adjustments are recorded on a cumulative catch-up basis, which would affect license, collaboration and other revenues and e

imated provision in the year ended December 31, 2018.

e subject to an annual limitation under Section 382 of the U.S. Internal Revenue Code of 1986, as amended, and similar state laws. Such

(in thousands)	YEAR ENDED DECEMBER 31, 2018	2017	PERIOD-TO PERIOD CHANGE
Revenue	$ —	$ —	$ —
Costs and expenses:			
Research and development expense	40,092	24,100	15,992
General and administrative expense	11,413	9,832	1,581
Total costs and expenses	51,505	33,932	17,573
Loss from operations	(51,505)	(33,932)	(17,573)
Interest income	3,231	651	2,580
Net loss and comprehensive loss	$ (48,274)	$ (33,281)	$ (14,993)

(in thousands)	YEAR ENDED DECEMBER 31, 2018	2017	PERIOD-TO PERIOD CHANGE
Personnel-related	$ 3,553	$ 3,183	$ 370
Stock-based compensation	2,878	2,480	398
Legal, consulting and other professional expenses	4,157	3,466	691
Other	825	703	122
General and administrative expense	$ 11,413	$ 9,832	$ 1,581

(in thousands)	YEAR ENDED DECEMBER 31, 2017	2016	PERIOD-TO PERIOD CHANGE
Clinical development	$ 5,700	$ 7,729	$ (2,029)
Manufacturing and formulation	6,625	4,449	2,176
Contract research services, consulting and other costs	1,575	1,998	(423)
Laboratory costs	1,923	1,719	204
Personnel-related	6,996	6,354	642
Stock-based compensation	1,281	1,033	248
Research and development expense	$ 24,100	$ 23,282	$ 818

(in thousands)	YEAR ENDED DECEMBER 31, 2017	2016	PERIOD-TO PERIOD CHANGE
Uproleselan	$ 12,488	$ 10,483	$ 2,005
GMI-1359	806	2,875	(2,069)
Other research and development	2,529	2,537	(8)
Personnel-related and stock-based compensation	8,277	7,387	890
Research and development expense	$ 24,100	$ 23,282	$ 818

(in thousands)	YEAR ENDED DECEMBER 31, 2017	2016	PERIOD-TO PERIOD CHANGE
Personnel-related	$ 3,183	$ 2,829	$ 354
Stock-based compensation	2,480	1,932	548
Legal, consulting and other professional expenses	3,466	3,249	217
Other	703	640	63
General and administrative expense	$ 9,832	$ 8,650	$ 1,182

	YEAR ENDED DECEMBER 31,		
(in thousands)	2018	2017	2016
Net cash provided by (used in):			
Operating activities	$ (43,331)	$ (29,768)	$ (29,731)
Investing activities	(126)	(294)	(704)
Financing activities	129,450	113,945	23,674
Net change in cash and cash equivalents	$ 85,993	$ 83,883	$ (6,761)

	Payments Due by Period						
	Total	2019	2020	2021	2022	2023	After 2023
	(In thousands)						
Operating lease	$ 5,016	$ 990	$ 1,014	$ 1,040	$ 1,066	$ 906	$ —

disclosed by a company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the company

r	Description of Document
)	Amended and Restated Certificate of Incorporation.
2)	Amended and Restated Bylaws.
3)	Specimen stock certificate evidencing shares of Common Stock.
(4)	License Agreement, dated as of October 7, 2011, as amended to date, by and between the Registrant and Pfizer Inc.
5)	Second Amended and Restated Investor Rights Agreement, dated as of October 20, 2009, by and among the Registrant and certain
(6)	2003 Stock Incentive Plan, as amended.
(7)	Form of Incentive Stock Option Agreement under 2003 Stock Incentive Plan.
(8)	Form of Nonqualified Stock Option Agreement under 2003 Stock Incentive Plan.
(9)	2013 Equity Incentive Plan.

Exhibit Number	Description of Document
10.7+(10)	Form of Stock Option Grant Notice and Stock Option Agreement under 2013 Equity Incentive Plan.
10.8+(11)	Form of Restricted Stock Unit Grant Notice and Restricted Stock Unit Award Agreement under 2013 Equity Incentive P
10.9+(12)	2013 Employee Stock Purchase Plan.
10.10+(13)	Form of Indemnification Agreement.
10.11+(14)	Amended and Restated Employment Agreement, dated as of January 15, 2014, by and between the Registrant and Rache
10.12+(15)	Amended and Restated Employment Agreement, dated as of January 15, 2014, by and between the Registrant and Brian
10.13+(16)	Amended and Restated Employment Agreement, dated as of January 15, 2014, by and between the Registrant and Helen
10.14+(17)	Executive Employment Agreement, dated as of May 19, 2003, by and between the Registrant and John Magnani.
10.15+(18)	Non-Employee Director Compensation Policy.
10.16(19)	Lease Agreement, dated July 23, 2014, by and between the Registrant and BMR-Medical Center Drive, LLC.
10.17(20)	Sales Agreement, dated September 28, 2017 by and between the Registrant and Cowen and Company, LLC.
10.18(21)	First Amendment to Lease, dated March 24, 2016, by and between the Registrant and BMR-Medical Center Drive LLC.
23.1	Consent of Ernst & Young LLP, independent registered public accounting firm.
24.1	Power of Attorney (contained on signature page hereto).

78

Table of Contents

Exhibit Number	Description of Document
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document
101.LAB	XBRL Taxonomy Extension Label Linkbase Document
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document

^These certifications are being furnished solely to accompany this Annual Report pursuant to 18 U.S.C. Section 1350, and are not being filed for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, and are not to be incorporated by reference into any filing of the registrant, whether made before or after the date hereof, regardless of any general incorporation language in such filing.

+Indicates management contract or compensatory plan.

*Confidential treatment has been granted with respect to portions of this exhibit (indicated by asterisks) and those portions have been separately filed with the Securities and Exchange Commission.

---

(1) Previously filed as Exhibit 3.1 to the Registrant's Current Report on Form 8-K (File No. 001-36177), filed with the Commission on January 15, 2014, and incorporated by reference herein.
(2) Previously filed as Exhibit 3.2 to the Registrant's Current Report on Form 8-K (File No. 001-36177), filed with the Commission on January 15, 2014, and incorporated by reference herein.
(3) Previously filed as Exhibit 4.2 to Amendment No. 2 to the Registrant's Registration Statement on Form S-1 (File No. 333-191567), filed with the Commission on October 31, 2013, and incorporated by reference herein.
(4) Previously filed as Exhibit 10.1 to Amendment No. 2 to the Registrant's Registration Statement on Form S-1 (File No. 333-191567), filed with the Commission on October 31, 2013, and incorporated by reference herein.
(5) Previously filed as Exhibit 10.2 to the Registrant's Registration Statement on Form S-1 (File No. 333-191567), filed with the Commission on October 4, 2013, and incorporated by reference herein.
(6) Previously filed as Exhibit 10.8 to the Registrant's Registration Statement on Form S-1 (File No. 333-191567), filed with the Commission on October 4, 2013, and incorporated by reference herein.
(7) Previously filed as Exhibit 10.9 to the Registrant's Registration Statement on Form S-1 (File No. 333-191567), filed with the Commission on October 4, 2013, and incorporated by reference herein.
(8) Previously filed as Exhibit 10.10 to the Registrant's Registration Statement on Form S-1 (File No. 333-191567), filed with the Commission on October 4, 2013, and incorporated by reference herein.
(9) Previously filed as Exhibit 10.11 to Amendment No. 1 to the Registrant's Registration Statement on Form S-1 (File No. 333-191567), filed with the Commission on October 28, 2013, and incorporated by reference herein.
(10) Previously filed as Exhibit 10.12 to Amendment No. 1 to the Registrant's Registration Statement on Form S-1 (File No. 333-191567), filed with the Commission on October 28, 2013, and incorporated by reference herein.
(11) Previously filed as Exhibit 10.13 to Amendment No. 1 to the Registrant's Registration Statement on Form S-1 (File No. 333-191567), filed with the Commission on October 28, 2013, and incorporated by reference herein.
(12) Previously filed as Exhibit 10.14 to Amendment No. 1 to the Registrant's Registration Statement on Form S-1 (File No. 333-191567), filed with the Commission on October 28, 2013, and incorporated by reference herein.

(13) Previously filed as Exhibit 10.15 to Amendment No. 1 to the Registrant's Registration Statement on Form S-1 (File No. 333-191567), filed with the Commission on October 28, 2013, and incorporated by reference herein.
(14) Previously filed as Exhibit 10.16 to the Registrant's Annual Report on Form 10-K (File No. 001-36177), filed with the Commission on March 31, 2014, and incorporated by reference herein.
(15) Previously filed as Exhibit 10.17 to the Registrant's Annual Report on Form 10-K (File No. 001-36177), filed with the Commission on March 31, 2014, and incorporated by reference herein.

Table of Contents

(16) Previously filed as Exhibit 10.18 to the Registrant's Annual Report on Form 10-K (File No. 001-36177), filed with the Commission on March 31, 2014, and incorporated by reference herein.
(17) Previously filed as Exhibit 10.19 to the Registrant's Annual Report on Form 10-K (File No. 001-36177), filed with the Commission on March 31, 2014, and incorporated by reference herein.
(18) Previously filed as Exhibit 10.17 to Amendment No. 3 to the Registrant's Registration Statement on Form S-1 (File No. 333-191567), filed with the Commission on December 20, 2013, and incorporated by reference herein.
(19) Previously filed as Exhibit 10.1 to the Registrant's Current Report on Form 8-K (File No. 001-36177), filed with the Commission on July 28, 2014, and incorporated by reference herein.
(20) Previously filed as Exhibit 1.2 to the Registrant's Registration Statement on Form S-3 (File No. 333-220697), filed with the Commission on September 28, 2017, and incorporated by reference herein.
(21) Previously filed as Exhibit 10.1 to the Registrant's Current Report on Form 8-K (File No. 001-36177), filed with the Commission on March 29, 2016, and incorporated by reference herein.

ITEM 16. FORM 10-K SUMMARY

Not applicable

Table of Contents

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, as amended, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

GLYCOMIMETICS, INC.

By: /s/ Rachel K. King

Rachel K. King
President and Chief Executive Officer

March 6, 2019

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Rachel K. King and Brian M. Hahn, jointly and severally, as his or her true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution, for him or her and in his or her name, place and stead, in any and all capacities, to sign this Annual Report on Form 10-K of GlycoMimetics, Inc., and any or all amendments thereto, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents full power and authority to do and perform each and every act and thing requisite or necessary to be done in and about the premises hereby ratifying and confirming all that said attorneys-in-fact and agents, or his, her or their substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, as amended, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

Signature	Title	Date
/s/ Rachel K. King Rachel K. King	President, Chief Executive Officer and Director (Principal Executive Officer)	March 6, 2019
/s/ Brian M. Hahn	Chief Financial Officer	March 6, 2019

Brian M. Hahn	(Principal Financial Officer and Principal Accounting Officer)	
/s/ Patricia S. Andrews	Director	March 6, 2019
Patricia S. Andrews		
/s/ M. James Barrett, Ph.D.	Director	March 6, 2019
M. James Barrett, Ph.D.		
/s/ Mark A. Goldberg M.D.	Director	March 6, 2019
Mark A. Goldberg M.D.		
/s/ Scott T. Jackson	Director	March 6, 2019
Scott T. Jackson		
/s/ Daniel M. Junius	Director	March 6, 2019
Daniel M. Junius		
/s/ Scott Koenig, M.D., Ph.D.	Director	March 6, 2019
Scott Koenig, M.D., Ph.D.		
/s/ John L. Magnani, Ph.D.	Director	March 6, 2019
John L. Magnani, Ph.D.		
/s/ Timothy Pearson	Director	March 6, 2019
Timothy Pearson		

81

Table of Contents

INDEX TO FINANCIAL STATEMENTS

Table of Contents

Report of Independent Registered Public Accounting Firm

To the Stockholders and the Board of Directors of GlycoMimetics, Inc.

Opinion on the Financial Statements

We have audited the accompanying balance sheets of GlycoMimetics, Inc. (the Company) as of December 31, 2018 and 2017, the related statements of operations and comprehensive loss, stockholders' equity and cash flows for each of the three years in the period ended December 31, 2018, and the related notes (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2018 and 2017, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2018 in conformity with U.S. generally accepted accounting principles.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ Ernst & Young LLP

We have served as the Company's auditor since 2011.
Baltimore, Maryland
March 6, 2019

Table of Contents

GLYCOMIMETICS, INC.

Balance Sheets

	December 31, 2018	2017
Assets		
Current assets:		
Cash and cash equivalents	$ 209,917,595	$ 123,924,738
Prepaid expenses and other current assets	2,351,524	3,294,884
Total current assets	212,269,119	127,219,622
Property and equipment, net	957,226	1,106,899
Prepaid research and development expenses	1,560,607	204,364
Deposits	52,320	52,320
Total assets	$ 214,839,272	$ 128,583,205
Liabilities & stockholders' equity		
Current liabilities:		
Accounts payable	$ 2,663,579	$ 2,647,091
Accrued bonuses	1,727,184	1,883,051
Accrued expenses	4,273,620	3,566,607
Deferred rent	98,771	78,028
Total current liabilities	8,763,154	8,174,777
Deferred rent, net of current portion	611,623	707,003
Total liabilities	9,374,777	8,881,780
Stockholders' equity:		
Preferred stock; $0.001 par value; 5,000,000 shares authorized, no shares issued and outstanding at December 31, 2018 and December 31, 2017	—	—
Common stock; $0.001 par value; 100,000,000 shares authorized, 43,160,751 shares issued and outstanding at December 31, 2018; 100,000,000 shares authorized, 34,359,799 shares issued and outstanding at December 31, 2017	43,159	34,358
Additional paid-in capital	405,972,075	271,944,173
Accumulated deficit	(200,550,739)	(152,277,106)
Total stockholders' equity	205,464,495	119,701,425
Total liabilities and stockholders' equity	$ 214,839,272	$ 128,583,205

See accompanying notes.

Table of Contents

GLYCOMIMETICS, INC.

Statements of Operations and Comprehensive Loss

	Year Ended December 31,		
	2018	2017	2016
Revenue	$ —	$ —	$ 18,500
Costs and expenses:			
Research and development expense	40,091,773	24,100,092	23,281,820
General and administrative expense	11,413,050	9,832,188	8,650,165
Total costs and expenses	51,504,823	33,932,280	31,931,985
Loss from operations	(51,504,823)	(33,932,280)	(31,913,485)
Interest income	3,231,190	651,212	103,647
Net loss and comprehensive loss	$ (48,273,633)	$ (33,281,068)	$ (31,809,838)
Basic and diluted net loss per common share	$ (1.18)	$ (1.13)	$ (1.50)
Basic and diluted weighted average number of common shares	41,044,621	29,395,756	21,256,312

See accompanying notes.

Table of Contents

GLYCOMIMETICS, INC.

Statements of Stockholders' Equity

	Common Stock Shares	Amount	Additional Paid-In Capital	Accumulated Deficit	Total Stockholders' Equity
Balance at December 31, 2015	19,050,204	$ 19,049	$ 127,619,078	$ (87,166,473)	$ 40,471,654
Issuance of common stock, net of issuance costs	4,145,584	4,146	23,597,809	—	23,601,955
Exercise of options and warrants	54,235	54	72,539	—	72,593
Stock-based compensation	—	—	2,964,767	—	2,964,767
Net loss	—	—	—	(31,809,838)	(31,809,838)
Balance at December 31, 2016	23,250,023	23,249	154,254,193	(118,976,311)	35,301,131
Cumulative adjustment upon implementation of ASU No. 2016-09 for stock-based compensation forfeitures	—	—	19,727	(19,727)	—
Issuance of common stock, net of issuance costs	11,038,647	11,038	113,536,146	—	113,547,184
Exercise of options	71,129	71	373,305	—	373,376
Stock-based compensation	—	—	3,760,802	—	3,760,802
Net loss	—	—	—	(33,281,068)	(33,281,068)
Balance at December 31, 2017	34,359,799	34,358	271,944,173	(152,277,106)	119,701,425
Issuance of common stock, net of issuance costs	8,050,000	8,050	128,417,030	—	128,425,080
Exercise of options and warrants	750,952	751	1,023,774	—	1,024,525
Stock-based compensation	—	—	4,587,098	—	4,587,098
Net loss	—	—	—	(48,273,633)	(48,273,633)
Balance at December 31, 2018	43,160,751	$ 43,159	$ 405,972,075	$ (200,550,739)	$ 205,464,495

See accompanying notes.

Table of Contents

GLYCOMIMETICS, INC.

Statements of Cash Flows

	Year Ended December 31,		
	2018	2017	2016
Operating activities			
Net loss	$ (48,273,633)	$ (33,281,068)	$ (31,809,838)
Adjustments to reconcile net loss to net cash used in operating activities:			
Depreciation	275,123	263,541	190,540
Loss on disposal of property and equipment	168	—	—
Stock-based compensation expense	4,587,098	3,760,802	2,964,767
Changes in assets and liabilities:			
Prepaid expenses and other current assets	943,360	(2,816,381)	(36,693)
Prepaid research and development expenses	(1,356,243)	555,167	(63,000)
Deposits	—	—	(52,320)
Accounts payable	16,488	1,061,880	1,000,975
Accrued expenses and bonuses	551,146	724,797	(2,504,179)
Deferred rent	(74,637)	(37,099)	578,483
Net cash used in operating activities	(43,331,130)	(29,768,361)	(29,731,265)
Investing activities			
Purchases of property and equipment	(125,618)	(294,107)	(704,202)
Net cash used in investing activities	(125,618)	(294,107)	(704,202)
Financing activities			
Proceeds from issuance of common stock, net of issuance costs	128,425,080	113,572,189	23,601,955
Proceeds from exercise of stock options and warrants	1,024,525	373,376	72,593
Net cash provided by financing activities	129,449,605	113,945,565	23,674,548
Net change in cash and cash equivalents	85,992,857	83,883,097	(6,760,919)
Cash and cash equivalents, beginning of period	123,924,738	40,041,641	46,802,560
Cash and cash equivalents, end of period	$ 209,917,595	$ 123,924,738	$ 40,041,641
Non-cash investing and financing activities			
Property acquisition costs included in accounts payable and accrued expenses	$ —	$ 20,000	$ 21,292
Issuance costs associated with financing included in accounts payable and accrued expenses	$ —	$ 25,005	$ —

See accompanying notes.

87

Table of Contents

GLYCOMIMETICS, INC.

Notes to Financial Statements

1. Description of the Business

GlycoMimetics, Inc. (the Company), a Delaware corporation headquartered in Rockville, Maryland, was incorporated in 2003. The company is a clinical stage biotechnology company focused on the discovery and development of novel glycomimetic drugs to address unmet medical needs resulting from diseases in which carbohydrate biology plays a key role. Glycomimetics are molecules that mimic the structure of carbohydrates involved in important biological processes. Using its expertise in carbohydrate chemistry and knowledge of carbohydrate biology, the Company is developing a pipeline of proprietary glycomimetics that inhibit disease-related functions of carbohydrates, such as the roles they play in inflammation, cancer and infection.

The Company's executive personnel have devoted substantially all of their time to date to the planning and organization of the Company, the process of hiring scientists, initiating research and development programs and securing adequate capital for anticipated growth and operations. The Company has not commercialized any of its drug candidates and planned commercial operations have not commenced. The Company has incurred significant losses in the development of its drug candidates. The Company has not generated revenues from product sales. As a result, the Company has consistently reported negative cash flows from operating activities and net losses, had an accumulated deficit of $200,550,739 at December 31, 2018 and expects to continue incurring losses for the foreseeable future.

2. Summary of Significant Accounting Policies

Basis of Accounting

The accompanying financial statements were prepared based on the accrual method of accounting in accordance with U.S. generally accepted accounting principles (GAAP).

Segment Information

Operating segments are defined as components of an enterprise about which separate discrete information is available for evaluation by the chief operating decision maker, or decision-making group, in deciding how to allocate resources and in assessing performance. The Company views its operations and manages its business in one segment, which is the identification and development of glycomimetic compounds.

Use of Estimates

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting periods. Although actual results could differ from those estimates, management does not believe that such differences would be material.

Cash and Cash Equivalents

Cash and cash equivalents consist of investment in money market funds with commercial banks and financial institutions. The Company considers all investments in highly liquid financial instruments with an original maturity of

three months or less at the date of purchase to be cash equivalents. Cash equivalents are stated at amortized cost, plus accrued interest, which approximates fair value.

Fair Value Measurements

The Company’s financial instruments include cash and cash equivalents. The fair values of the financial instruments approximated their carrying values at December 31, 2018 and 2017, due to their short-term maturities. The Company accounts for recurring and nonrecurring fair value measurements in accordance with ASC 820, Fair Value Measurements. ASC 820 defines fair value, establishes a fair value hierarchy for assets and liabilities measured at fair value, and requires expanded disclosures about fair value measurements. The ASC hierarchy ranks the quality of

Table of Contents

reliability of inputs, or assumptions, used in the determination of fair value, and requires assets and liabilities carried at fair value to be classified and disclosed in one of the following three categories:

- Level 1—Fair value is determined by using unadjusted quoted prices that are available in active markets for identical assets and liabilities.
- Level 2—Fair value is determined by using inputs, other than Level 1 quoted prices, that are directly and indirectly observable. Inputs can include quoted prices for similar assets and liabilities in active markets or quoted prices for identical assets and liabilities in inactive markets. Related inputs can also include those used in valuation or other pricing models that can be corroborated by observable market data.
- Level 3—Fair value is determined by inputs that are unobservable and not corroborated by market data. Use of these inputs involves significant and subjective judgments to be made by a reporting entity. In instances where the determination of the fair value measurement is based on inputs from different levels of fair value hierarchy, the fair value measurement will fall within the lowest level input that is significant to the fair value measurement in its entirety.

The Company periodically evaluates financial assets and liabilities subject to fair value measurements to determine the appropriate level at which to classify them each reporting period. This determination requires the Company to make subjective judgments as to the significance of inputs used in determining fair value and where such inputs lie within the ASC 820 hierarchy.

The Company had no assets or liabilities that were measured using quoted prices for similar assets and liabilities or significant unobservable inputs (Level 2 and Level 3 assets and liabilities, respectively) as of December 31, 2018 and 2017. The carrying value of cash held in money market funds of approximately $207.9 million and $121.9 million as of December 31, 2018 and 2017, respectively, is included in cash and cash equivalents and approximates market values based on quoted market prices (Level 1 inputs).

Concentration of Credit Risk

Credit risk represents the risk that the Company would incur a loss if counterparties failed to perform pursuant to the terms of their agreements. Financial instruments that potentially expose the Company to concentrations of credit risk consist primarily of cash and cash equivalents. Cash and cash equivalents consist of investment in money market funds with major financial institutions in the United States. These deposits and funds may be redeemed upon demand and, therefore, bear minimal risk. The Company does not anticipate any losses on such balances.

Property and Equipment

Property and equipment are recorded at cost and depreciated on a straight-line basis over estimated useful lives ranging from three to seven years. Upon retirement or disposition of assets, the costs and related accumulated depreciation are removed from the accounts and any resulting gain or loss is included in the results of operations. Expenditures for repairs and maintenance are charged to operations as incurred; major replacements that extend the useful life are capitalized. Depreciation and amortization are computed using the straight-line method over the following estimated useful lives:

	ESTIMATED USEFUL LIVES
Furniture and fixtures	7 years
Laboratory equipment	5 years
Office equipment	5 years

Computer equipment	5 years
Computer software	3 years
Leasehold improvements	Shorter of lease term or useful life

Impairment of Long-Lived Assets

The Company periodically assesses the recoverability of the carrying value of its long-lived assets in accordance with the provisions of ASC 360, Property, Plant, and Equipment. ASC 360 requires that long-lived assets and certain identifiable intangible assets be reviewed for impairment whenever events or changes in circumstances indicate that the

Table of Contents

carrying amount of an asset may not be recoverable. Recoverability of the long-lived asset is measured by a comparison of the carrying amount of the asset to future undiscounted net cash flows expected to be generated by the asset. If the carrying value exceeds the sum of undiscounted cash flows, the Company then determines the fair value of the underlying asset. Any impairment to be recognized is measured by the amount by which the carrying amount of the assets exceeds the estimated fair value of the assets. Assets to be disposed of are reported at the lower of the carrying amount or fair value, less costs to sell. As of December 31, 2018 and 2017, the Company determined that there were no impaired assets and had no assets held for sale.

Revenue Recognition

Effective January 1, 2018, the Company adopted Accounting Standards Codification, or ASC, Topic 606, Revenue from Contracts with Customers (Topic 606), using the full retrospective transition method. Under this method, the Company would have been required to revise its financial statements, if applicable, for the years ended December 31, 2017 and 2016, and applicable interim periods within those years, as if Topic 606 had been effective for those periods. However, Topic 606 did not have any impact on the Company's revenue recognition upon adoption. This standard applies to all contracts with customers, except for contracts that are within the scope of other standards, such as leases, insurance, collaboration arrangements and financial instruments. Under Topic 606, an entity recognizes revenue when its customer obtains control of promised goods or services in an amount that reflects the consideration which the entity expects to receive in exchange for those goods and services. To determine revenue recognition for arrangements that an entity determines are within the scope of Topic 606, the entity performs the following five steps: (i) identify the contract(s) with the customer(s); (ii) identify the performance obligations in the contract; (iii) determine the transaction price; (iv) allocate the transaction price to the performance obligations in the contract; and (v) recognize revenue when (or as) the entity satisfies a performance obligation. The Company only applies the five-step model to contracts when it is probable that the entity will collect the consideration it is entitled to in exchange for the goods and services it transfers to the customer. At contract inception, the Company assesses the goods or services promised within each contract that falls under the scope of Topic 606, determines those that are performance obligations and assesses whether each promised good or service is distinct. The Company then recognizes as revenue the amount of the transaction price that is allocated to the respective performance obligation when (or as) the performance obligation is satisfied.

The Company enters into licensing agreements which are within the scope of Topic 606, under which it licenses certain of its product candidates' rights to third parties. The terms of these arrangements typically include payment of one or more of the following: non-refundable, up-front license fees; development, regulatory and commercial milestone payments; and royalties on net sales of the licensed product, if and when earned. In determining the appropriate amount of revenue to be recognized as it fulfills its obligation under each of its agreements, the Company performs the five steps under ASC 606 as described above. As part of the accounting for these arrangements, the Company must develop assumptions that require judgment to determine the stand-alone selling price, which may include forecasted revenues, development timelines, reimbursement of personnel costs, discount rates and probabilities of technical and regulatory success.

Licensing of Intellectual Property: If the license to the Company's intellectual property is determined to be distinct from the other performance obligations identified in the arrangement, the Company recognizes revenue from non-refundable, up-front fees allocated to the license when the license is transferred to the licensee and the licensee is

able to use and benefit from the license. For licenses that are bundled with other promises, the Company utilizes judgment to assess the nature of the combined performance obligation to determine whether the combined performance obligation is satisfied over time or at a point in time and, if over time, the appropriate method of measuring progress for purposes of recognizing revenue from non-refundable, up-front fees. The Company evaluates the measure of progress each reporting period, and, if necessary, adjusts the measure of performance and related revenue recognition.

Milestone Payments: At the inception of each arrangement that includes development milestone payments, the Company evaluates whether the milestones are considered probable of being reached and estimates the amount to be included in the transaction price using the most likely amount method. If it is probable that a significant revenue reversal will not occur, the associated milestone value is included in the transaction price. Milestone payments that are not within the control of the Company or the licensee, such as regulatory approvals, are not considered probable of being achieved until those approvals are received. The transaction price is then allocated to each performance obligation on a relative stand-alone selling price basis, for which the Company recognizes revenue as or when the performance obligations under

Table of Contents

the contract are satisfied. At the end of each subsequent reporting period, the Company re-evaluates the probability of achievement of such development milestones and any related constraint and, if necessary, adjusts its estimate of the overall transaction price. Any such adjustments are recorded on a cumulative catch-up basis, which would affect license, collaboration and other revenues and earnings in their period of adjustment.

Royalties: For arrangements that include sales-based royalties, including milestone payments based on the level of sales, and for which the license is deemed to be the predominant item to which royalties relate, the Company recognizes revenue at the later of (i) when the related sales occur or (ii) when the performance obligation to which some or all of the royalty has been allocated has been satisfied (or partially satisfied). To date, the Company has not recognized any royalty revenue from its license agreements.

The Company has entered into a license agreement (the Pfizer Agreement) with Pfizer Inc. (Pfizer) in October 2011. The Pfizer Agreement calls for a non-refundable up-front payment and milestone payments upon achieving significant milestone events. The Pfizer Agreement also contemplates royalty payments on future sales of an approved product. There are no performance, cancellation, termination or refund provisions in the Pfizer Agreement that contain material financial consequences to the Company. For a complete discussion of the Company’s accounting for the Pfizer Agreement, see Note 10, “Research and License Agreements.”

Accrued Liabilities

The Company is required to estimate accrued liabilities as part of the process of preparing its financial statements. The estimation of accrued liabilities involves identifying services that have been performed on the Company’s behalf, and then estimating the level of service performed and the associated cost incurred for such services as of each balance sheet date. Accrued liabilities include professional service fees, such as for lawyers and accountants, contract service fees, such as those under contracts with clinical monitors, data management organizations and investigators in conjunction with clinical trials, and fees to contract manufacturers in conjunction with the production of clinical materials. Pursuant to the Company’s assessment of the services that have been performed, the Company recognizes these expenses as the services are provided. Such assessments include: (i) an evaluation by the project manager of the work that has been completed during the period; (ii) measurement of progress prepared internally and/or provided by the third-party service provider; (iii) analyses of data that justify the progress; and (iv) the Company’s judgment.

Research and Development Costs

Except for payments made in advance of services, research and development costs are expensed as incurred. For payments made in advance, the Company recognizes research and development expense as the services are rendered. Research and development costs primarily consist of salaries and related expenses for personnel, laboratory supplies and raw materials, sponsored research, depreciation of laboratory facilities and leasehold improvements, and utilities costs related to research space. Other research and development expenses include fees paid to consultants and outside service providers including clinical research organizations and clinical manufacturing organizations.

Stock-Based Compensation

Stock-based payments are accounted for in accordance with the provisions of ASC 718, Compensation—Stock Compensation. The fair value of stock-based payments is estimated, on the date of grant, using the Black-Scholes-Merton model. The resulting fair value is recognized ratably over the requisite service period, which is generally the vesting period of the option.

The Company has elected to use the Black-Scholes-Merton option pricing model to value any options granted. The Company will reconsider use of the Black-Scholes-Merton model if additional information becomes available in the future that indicates another model would be more appropriate or if grants issued in future periods have characteristics that prevent their value from being reasonably estimated using this model.

A discussion of management's methodology for developing some of the assumptions used in the valuation model follows:

Expected Dividend Yield—The Company has never declared or paid dividends and has no plans to do so in the foreseeable future.

Table of Contents

Expected Volatility—Volatility is a measure of the amount by which a financial variable such as share price has fluctuated (historical volatility) or is expected to fluctuate (expected volatility) during a period. Prior to the Company's initial public offering, there was not a market for the Company's shares. The Company utilizes the historical volatilities of a peer group (e.g., several public entities of similar size, complexity, and stage of development), along with the Company's historical volatility since its initial public offering to determine its expected volatility.

Risk-Free Interest Rate—This is the U.S. Treasury rate for the week of each option grant during the year, having a term that most closely resembles the expected life of the option.

Expected Term—This is a period of time that the options granted are expected to remain unexercised. Options granted have a maximum term of 10 years. The Company estimates the expected life of the option term to be 6.25 years. The Company uses a simplified method to calculate the average expected term.

Expected Forfeiture Rate—Effective with the adoption of Accounting Standards Update (ASU) No. 2016-09 on January 1, 2017, Compensation – Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting, the Company has elected to account for forfeitures as they occur. The forfeiture rate is the estimated percentage of options granted that is expected to be forfeited or canceled on an annual basis before becoming fully vested.

Income Taxes

The Company accounts for income taxes using the asset and liability method in accordance with ASC 740, Income Taxes. Deferred income taxes are recognized for the tax consequences in future years of differences between the tax bases of assets and liabilities and the financial reporting amounts at each year-end based on enacted tax laws and statutory tax rates applicable to the periods in which the differences are expected to affect taxable income. A valuation allowance is established when necessary to reduce deferred tax assets to the amount expected to be realized.

The Company accounts for uncertain tax positions pursuant to ASC 740. Financial statement recognition of a tax position taken or expected to be taken in a tax return is determined based on a more-likely-than-not threshold of that tax position being sustained. If the tax position meets this threshold, the benefit to be recognized is measured as the tax benefit having the highest likelihood of being realized upon ultimate settlement with the taxing authority. The Company recognizes interest accrued related to unrecognized tax benefits and penalties in the provision for income taxes.

Comprehensive Loss

Comprehensive loss comprises net loss and other changes in equity that are excluded from net loss. For the years ended December 31, 2018, 2017 and 2016, the Company's net loss was equal to comprehensive loss and, accordingly, no additional disclosure is presented.

Adopted Accounting Standards

In May 2014, the FASB issued Topic 606, Revenue from Contracts with Customers, which amended the guidance for accounting for revenue from contracts with customers. Topic 606 superseded the revenue recognition requirements in ASC Topic 605, Revenue Recognition. The Company adopted this new standard on January 1, 2018 using the full retrospective transition method. The Company evaluated the Pfizer Agreement to determine the impact of the new revenue standard on the up-front and milestone payments within the Pfizer Agreement and determined that the

transition to the new revenue standard had no material impact on the prior financial statements presented. There were no financial statement line items affected by the transition. For further discussion on the adoption of this standard, see “Revenue Recognition” above and Note 10, “Research and License Agreements.”

In January 2017, the FASB issued ASU No. 2017-01, Business Combinations (Topic 805), Clarifying the Definition of a Business. The guidance changed the definition of a business to assist entities with evaluating when a set of transferred assets and activities is a business. The new guidance requires an entity to evaluate if substantially all of the fair value of the gross assets acquired is concentrated in a single identifiable asset or a group of similar identifiable assets; if so, the set of transferred assets and activities is not a business. The Company adopted this ASU as of January 1,

Table of Contents

2018. The adoption of this ASU had no impact on the Company's financial statements for the year ended December 31, 2018.

In May 2017, the FASB issued ASU No. 2017-09, Compensation – Stock Compensation (Topic 718), Scope of Modification Accounting, which clarifies when a change to the terms or conditions of a share-based payment award must be accounted for as a modification. The new guidance requires modification accounting if the fair value, vesting conditions or classification of the award is not the same immediately before and after a change to the terms and conditions of the award. The Company adopted this ASU on a prospective basis as of January 1, 2018. The adoption of this ASU had no impact on the Company's financial statements for the year ended December 31, 2018.

Accounting Standards Not Yet Adopted

In August 2018, the U.S. Securities and Exchange Commission (SEC) adopted the final rule under SEC Release No. 33-10532, Disclosure Update and Simplification. This final rule amends certain disclosure requirements that are redundant, duplicative, overlapping, outdated or superseded. In addition, the amendments expand the disclosure requirements on the analysis of stockholders' equity for interim financial statements. Under the amendments, an analysis of changes in each caption of stockholders' equity presented in the balance sheet must be provided in a note or separate statement. The analysis should present a reconciliation of the beginning balance to the ending balance of each period for which a statement of comprehensive income is required to be filed. This final rule is effective for the Company for all filings made on or after November 5, 2018. The SEC staff clarified that the first presentation of the changes in shareholders' equity may be included in the first Form 10-Q for the quarter that begins after the effective date of the amendments. The adoption of the final rule did not have a material impact on the Company's consolidated financial statements. The Company will change its presentation of stockholder's equity in the first quarter of 2019.

In February 2016, the FASB issued ASU No. 2016-02, Leases (Topic 842), which supersedes existing guidance on accounting for leases in Leases (Topic 840) and generally requires all leases, including operating leases, to be recognized in the statement of financial position as right-of-use assets and lease liabilities by lessees. The provisions of ASU No. 2016-02 are to be applied using a modified retrospective approach and are effective for reporting periods beginning after December 15, 2018; early adoption is permitted. The Company has elected the transition option provided under ASU No. 2018-11, which will not require adjustments to comparative periods nor require modified disclosures in those comparative periods. In addition, the Company elected the transition package of practical expedients permitted within the new standard, which among other things, allows the carryforward of the historical lease classification. Adoption of the standard will result in the recognition of right-of-use assets and related lease liabilities for operating leases of approximately $3.6 million and $4.3 million, respectively, as of January 1, 2019. The difference between these amounts will be comprised of adjustments related to unamortized balances of deferred rent, lease incentives, and prepaid rent existing as of the effective date. The adoption of the standard is not expected to materially affect net earnings.

In June 2018, the FASB issued ASU No. 2018-07, Compensation – Stock Compensation (Topic 718): Improvements to Nonemployee Share-based Payment Accounting, to simplify the accounting for share-based payments to nonemployees by aligning it with the accounting for share-based payments to employees, with certain exceptions. The provisions of ASU 2018-07 are effective for reporting periods beginning after December 15, 2018, including interim periods within that fiscal year. Upon transition, the Company will be required to measure these nonemployee awards at fair value as of the adoption date. The Company adopted this ASU as of January 1, 2019. The adoption of this ASU is expected to have an immaterial impact on the Company's financial statements for the year ending December 31, 2019.

In November 2018, the FASB issued ASU No. 2018-18, Collaborative Arrangements (Topic 808): Clarifying the Interaction between Topic 808 and Topic 606. The amendment clarifies that certain transactions between collaborative arrangement participants should be accounted for as revenue under Topic 606 when the collaborative arrangement participant is a customer in the context of a unit of account. In those situations, all the guidance in Topic 606 should be applied, including recognition, measurement, presentation, and disclosure requirements. The amendment also adds unit-of-account guidance in Topic 808 to align with the guidance in Topic 606 (that is, a distinct good or service) when an entity is assessing whether the collaborative arrangement or a part of the arrangement is within the scope of Topic 606. Lastly, the amendment requires that in a transaction with a collaborative arrangement participant that is not directly related to sales to third parties, presenting the transaction together with revenue recognized under Topic 606 is precluded if the collaborative arrangement participant is not a customer. For public business entities, the amendments are effective for fiscal years beginning after December 15, 2019, and interim periods within those fiscal years. The Company is

Table of Contents

currently evaluating these clarifications in the accounting and presentation for its collaborative arrangements within the scope of Topic 808.

With the exception of the new standards discussed above, there have been no new accounting pronouncements that have significance, or potential significance, to the Company's financial statements.

3. Net Loss Per Share of Common Stock

Basic net loss per common share is determined by dividing net loss by the weighted-average number of common shares outstanding during the period, without consideration of common stock equivalents. Diluted net income per share is computed by dividing net income by the weighted-average number of common stock equivalents outstanding for the period. The treasury stock method was used to determine the dilutive effect of the Company's stock option grants, restricted stock units and warrants.

The following table sets forth the computation of basic and diluted earnings per share for the years ended December 31, 2018, 2017 and 2016:

	2018	2017	2016
Net loss	$ (48,273,633)	$ (33,281,068)	$ (31,809,838)
Basic and diluted net loss per common share	$ (1.18)	$ (1.13)	$ (1.50)
Basic and diluted weighted average common shares outstanding	41,044,621	29,395,756	21,256,312

The following potentially dilutive securities outstanding at December 31, 2018, 2017 and 2016 have been excluded from the computation of diluted weighted average shares outstanding, as they would be anti-dilutive:

	2018	2017	2016
Warrants	—	553,868	553,868
Stock options and restricted stock units	3,937,167	3,399,124	2,817,674

4. Prepaid Expenses and Other Current Assets

The following is a summary of the Company's prepaid expenses and other current assets at December 31:

	2018	2017
Prepaid research and development expenses	$ 1,608,768	$ 2,941,196
Other prepaid expenses	329,634	251,733
Other receivables	413,122	101,955

Prepaid expenses and other current assets	$ 2,351,524	$ 3,294,884

Table of Contents

5. Property and Equipment

Property and equipment, net consisted of the following at December 31:

	2018	2017
Furniture and fixtures	$ 334,300	$ 314,024
Laboratory equipment	1,389,036	1,325,667
Office equipment	11,085	11,085
Computer equipment	233,282	192,430
Leasehold improvements	573,165	573,165
Property and equipment	2,540,868	2,416,371
Less accumulated depreciation	(1,583,642)	(1,309,472)
Property and equipment, net	$ 957,226	$ 1,106,899

Depreciation of property and equipment totaled $275,123, $263,541 and $190,540 for the years ended December 31, 2018, 2017 and 2016, respectively.

6. Accrued Expenses

The following is a summary of the Company’s accrued expenses at December 31:

	2018	2017
Accrued research and development expenses	$ 3,483,741	$ 2,702,445
Accrued consulting and other professional fees	140,397	227,811
Accrued employee benefits	385,789	331,930
Other accrued expenses	263,693	304,421
Accrued expenses	$ 4,273,620	$ 3,566,607

7. Operating Leases

The Company leases office and research space in Rockville, Maryland under an operating lease with a term through October 31, 2023 (as amended to date, the Lease) that is subject to annual rent increases. The Company has the right to sublease or assign all or a portion of the premises, subject to the conditions set forth in the Lease. The Lease may be terminated early by either the landlord or the Company in certain circumstances. In connection with the Lease, the Company received rent abatement as a lease incentive. The annual rent increases and rent abatement have been recognized as deferred rent that is being adjusted on a straight-line basis over the term of the Lease.

In March 2016, the Company amended the Lease (the Lease Amendment) to lease additional space beginning on June 1, 2016. In addition to the other terms of the Lease, the Lease Amendment provided for a tenant improvement allowance reflected in the Company's 2016 financial statements as an increase in capitalized leasehold improvements as incurred and an increase in deferred rent. In May 2016, the Company also paid a security deposit of $52,320 to be held until the expiration or termination of the Company's obligations under the Lease, which comprises the deposits balance on the balance sheets. The term of the Lease Amendment for the additional space continues through October 31, 2023, the same date as for the premises originally leased under the Lease, subject to the Company's renewal option set forth in the Lease. The Company also has a one-time option to terminate the Lease effective as of October 31, 2020.

Deferred rent related to the Lease was $710,394 and $785,031 at December 31, 2018 and December 31, 2017, respectively. Total rent expense under the Company's leases was $896,758, $890,170 and $784,739 for the years ended December 31, 2018, 2017 and 2016, respectively.

Table of Contents

The following table presents the future minimum lease payments as of December 31, 2018 under the Lease:

YEAR	AMOUNT
2019	$ 989,502
2020	1,014,239
2021	1,039,595
2022	1,065,585
2023	906,669
After 2023	—
Total	$ 5,015,590

8. Stockholders' Equity

Common Stock

At-The-Market Equity Offerings

On March 1, 2016, the Company entered into an at-the-market sales agreement with Cowen and Company, LLC to sell the Company's securities under a shelf registration statement filed in March 2015. As of December 31, 2016, the Company had issued and sold 668,791 shares of common stock under the at-the-market sales agreement. The shares were sold at a weighted average price per share of $6.336, for aggregate net proceeds of $3.9 million, after deducting commissions and offering expenses. During the period from January 1, 2017 through May 23, 2017, the Company issued and sold an additional 1,388,647 shares of common stock under the at-the-market sales agreement. The shares were sold at a weighted average price per share of $5.55, for aggregate net proceeds of $7.4 million, after deducting commissions and offering expenses. The at-the market sales agreement was terminated on May 23, 2017.

On September 28, 2017, the Company entered into a new at-the-market sales agreement with Cowen and Company, LLC to sell the Company's securities under a shelf registration statement filed in September 2017. As of December 31, 2017, the Company had issued and sold 1,600,000 shares of common stock under the at-the-market sales agreement. The shares were sold at a weighted average price per share of $12.50, for aggregate net proceeds of $19.3 million, after deducting commissions and offering expenses. As of December 31, 2018, $80.0 million remained available to be sold under the terms of the September 2017 at-the-market sales agreement. There were no shares sold under the September 2017 Sales Agreement during the year ended December 31, 2018.

Public Offerings of Common Stock

In June 2016, the Company completed a public offering in which the Company sold 3,476,793 shares of its common stock at a price to the public of $6.10 per share. The Company received net proceeds of $19.7 million from this offering, after deducting underwriting discounts, commissions and other offering expenses.

In May 2017, the Company completed a public offering in which the Company sold 8,050,000 shares of its common stock at a price to the public of $11.50 per share. The Company received net proceeds of $86.8 million from this offering, after deducting underwriting discounts, commissions and other offering expenses.

In March 2018, the Company completed a public offering in which the Company sold 8,050,000 shares of its common stock at a price to the public of $17.00 per share. The Company received net proceeds of $128.4 million from this offering, after deducting underwriting discounts, commissions and other offering expenses.

Warrants to Acquire Company Stock

In connection with the prior issuance of convertible unsecured promissory notes, the Company issued warrants to purchase shares of common stock in 2008 and 2009. As of December 31, 2017 and 2016, warrants to purchase an aggregate of 553,868 shares were outstanding, each with an exercise price of $0.33 per share. During the year ended December 31, 2018, all of the outstanding warrants were exercised; a total of 536,564 shares of common stock were issued to stockholders upon the net exercise of 546,709 outstanding warrants, and 7,159 shares of common stock were

Table of Contents

issued to stockholders upon the cash exercise of outstanding warrants, for total proceeds to the Company of $2,336. The Company no longer has any outstanding warrants to purchase shares of its capital stock. For the year ended December 31, 2017, no warrants were exercised or expired. For the year ended December 31, 2016, a total of 23,275 warrants were exercised at a weighted average exercise price of $0.33 per share and a total of 1,544 warrants expired.

2003 Stock Incentive Plan

The 2003 Stock Incentive Plan (the 2003 Plan) provided for the grant of incentives and nonqualified stock options and restricted stock awards. The exercise price for incentive stock options must be at least equal to the fair value of the common stock on the grant date. Unless otherwise stated in a stock option agreement, 25% of the shares subject to an option grant will vest upon the first anniversary of the vesting start date and thereafter at the rate of one forty-eighth of the option shares per month as of the first day of each month after the first anniversary. Upon termination of employment by reasons other than death, cause, or disability, any vested options shall terminate 60 days after the termination date. Stock options terminate 10 years from the date of grant. The 2003 Plan expired on May 21, 2013.

A summary of the Company's stock option activity under the 2003 Plan for the year ended December 31, 2018 is as follows:

	Outstanding Options	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Term (Years)	Aggregate Intrinsic Value (In thousands)
Outstanding as of December 31, 2017	713,211	$ 1.25	2.2	
Options exercised	(46,131)	1.29		
Options forfeited	—	—		
Outstanding, Vested and Exercisable as of December 31, 2018	667,080	1.24	1.2	$ 5,488

During 2018, 2017 and 2016 the Company issued 46,131, 16,608 and 28,368 shares of common stock, respectively, in conjunction with exercises of stock options granted under the 2003 Plan. The Company received cash proceeds from the exercise of these stock options of $59,659, $27,357 and $44,771 during 2018, 2017 and 2016, respectively. Total intrinsic value of the options exercised during the years ended December 31, 2018, 2017 and 2016 was $716,920, $103,638 and $97,707, respectively.

As of December 31, 2018, the options under the 2003 Plan were fully expensed and all shares outstanding in the plan were fully vested as of December 31, 2017. The total fair value of shares vested in the years ended December 31, 2017 and 2016, was $1,573 and $16,024, respectively. There were no options granted from this plan in 2018, 2017 or 2016.

2013 Equity Incentive Plan

The Company's board of directors adopted, and its stockholders approved, its 2013 Equity Incentive Plan (the 2013 Plan) effective on January 9, 2014. The 2013 Plan provides for the grant of incentive stock options within the meaning of Section 422 of the Internal Revenue Code (the Code), to the Company's employees and its parent and subsidiary corporations' employees, and for the grant of nonstatutory stock options, restricted stock awards, restricted stock unit

awards, stock appreciation rights, performance stock awards and other forms of stock compensation to its employees, including officers, consultants and directors. The 2013 Plan also provides for the grant of performance cash awards to the Company's employees, consultants and directors. Unless otherwise stated in a stock option agreement, 25% of the shares subject to an option grant will typically vest upon the first anniversary of the vesting start date and thereafter at the rate of one forty-eighth of the option shares per month as of the first day of each month after the first anniversary. Upon termination of employment by reasons other than death, cause, or disability, any vested options shall terminate 90 days after the termination date, unless otherwise set forth in a stock option agreement. Stock options generally terminate 10 years from the date of grant.

Table of Contents

Authorized Shares

The maximum number of shares of common stock that may be issued under the 2013 Plan was 1,000,000 shares, plus any shares subject to stock options or similar awards granted under the 2003 Plan that expire or terminate without having been exercised in full or are forfeited to or repurchased by the Company. The number of shares of common stock reserved for issuance under the 2013 Plan will automatically increase on January 1 of each year, beginning on January 1, 2015 and ending on January 1, 2023, by 3% of the total number of shares of common stock outstanding on December 31 of the preceding calendar year, or a lesser number of shares as may be determined by the Company's board of directors. The maximum number of shares that may be issued pursuant to exercise of incentive stock options under the 2013 Plan is 20,000,000. As of January 1, 2019, the number of shares of common stock that may be issued under the 2013 Plan was automatically increased by 1,294,822 shares, representing 3% of the total number of shares of common stock outstanding on January 1, 2019, increasing the number of shares of common stock available for issuance under the 2013 Plan to 5,162,816 shares.

Shares issued under the 2013 Plan may be authorized but unissued or reacquired shares of common stock. Shares subject to stock awards granted under the 2013 Plan that expire or terminate without being exercised in full, or that are paid out in cash rather than in shares, will not reduce the number of shares available for issuance under the 2013 Plan. Additionally, shares issued pursuant to stock awards under the 2013 Plan that the Company repurchases or that are forfeited, as well as shares reacquired by the Company as consideration for the exercise or purchase price of a stock award or to satisfy tax withholding obligations related to a stock award, will become available for future grant under the 2013 Plan.

Stock Options

A summary of the Company's stock option activity under the 2013 Plan for the year ended December 31, 2018 is as follows:

	OUTSTANDING OPTIONS	WEIGHTED-AVERAGE EXERCISE PRICE	WEIGHTED-AVERAGE REMAINING CONTRACTUAL TERM(YEARS)	AGGREGATE INTRINSIC VALUE (IN THOUSANDS)
Outstanding as of December 31, 2017	2,664,163	$ 7.34	7.4	
Options granted	845,479	19.22		
Options exercised	(144,182)	6.68		
Options forfeited	(100,206)	13.89		
Outstanding as of December 31, 2018	3,265,254	8.39	7.1	$ 7,489
Vested or expected to vest as of December 31, 2018	3,265,254	8.39	7.1	$ 7,489
Exercisable as of December 31, 2018	2,020,307	7.66	6.1	$ 4,539

The weighted-average fair value of the options granted during the years ended December 31, 2018, 2017 and 2016 was $12.90, $4.76 and $3.39 per share, respectively, applying the Black-Scholes-Merton option pricing model utilizing the following weighted-average assumptions:

	2018	2017	2016
Expected term	6.25 years	6.25 years	6.25 years
Expected volatility	73.75%	75.20%	68.98%
Risk-free interest rate	2.55%	2.08%	1.70%
Expected dividend yield	0%	0%	0%

As of December 31, 2018, there was $9,129,271 of total unrecognized compensation expense related to unvested options that will be recognized over a weighted-average period of approximately 2.7 years. The total fair value of shares vested in the years ended December 31, 2018, 2017 and 2016 was $3,003,632, $3,506,568 and $3,053,086, respectively. During the years ended December 31, 2018, 2017 and 2016, the Company received cash of $962,530, $346,019 and $27,825, respectively, and issued 144,182, 54,521 and 3,500 shares of common stock, respectively, in conjunction with

Table of Contents

exercises of stock options granted under the 2013 Plan. The intrinsic value of the options exercised for the years ended December 31, 2018, 2017 and 2016 was $1,344,026, $385,701 and $2,275, respectively.

Restricted Stock Units (RSUs)

An RSU is a stock award that entitles the holder to receive shares of the Company's common stock as the award vests. The fair value of each RSU is based on the closing price of the Company's stock on the date of grant. The Company has granted RSUs with service conditions (service RSUs) that vest in three equal annual installments provided that the employee remains employed with the Company. As of December 31, 2018, $1,099 of unrecognized compensation costs related to unvested service.

The following is a summary of RSU activity for the 2013 Plan for the year ended December 31, 2018:

	Number of Shares Underlying RSUs	Weighted-Average Grant Date Fair Value
Unvested at December 31, 2017	9,667	$ 4.61
Granted	—	—
Forfeited	—	—
Vested	4,834	4.61
Unvested at December 31, 2018	4,833	4.61

Total stock-based compensation expense associated with stock options and RSUs was classified as follows on the statement of operations for the years ended December 31:

	2018	2017	2016
Research and development expense	$ 1,709,390	$ 1,280,909	$ 1,033,005
General and administrative expense	2,877,708	2,479,893	1,931,762
Total stock-based compensation expense	$ 4,587,098	$ 3,760,802	$ 2,964,767

9. Income Taxes

The components of the gross deferred tax asset and related valuation allowance at December 31 were as follows:

	2018	2017
Deferred tax assets:		
Net operating loss carryforward	$ 41,687,577	$ 30,813,509
Capitalized start-up costs	1,501,895	1,695,688
Patent amortization	119,888	135,358
Research and orphan drug credits	28,123,082	21,293,509
Deferred rent	51,400	71,938
Deferred compensation	3,293,221	2,274,885

Other	95,564	69,906
Total gross deferred tax assets	74,872,627	56,354,793
Valuation allowance	(74,872,627)	(56,354,793)
Deferred tax assets	—	—
Deferred tax liabilities:		
Total deferred tax liabilities	—	—
Net deferred tax assets	$ —	$ —

Based on the Company's operating history and management's expectation regarding future profitability, management believes the realization of the Company's deferred tax assets does not meet the more-likely-than-not criteria under ASC 740, Income Taxes. Accordingly, a full valuation allowance has been established as of December 31, 2018 and 2017.

Table of Contents

On December 22, 2017, the Tax Cuts and Jobs Act (the "TCJA") was enacted into law. The TCJA contained several key tax provisions including the reduction of the corporate income tax rate from 35% to 21% effective January 1, 2018, as well as a variety of other changes, including the limitation of the tax deductibility of interest expense, acceleration of expensing of certain business assets and reductions in the amount of executive pay that can qualify as a tax deduction. ASC Topic 740 required the Company to recognize the effect of the tax law changes in the period of enactment. The Company re-measured certain of its U.S. deferred tax assets and liabilities, based on the rates at which they are expected to reverse in the future. As of December 31, 2017, the tax benefit recorded related to the re-measurement of the deferred tax balance was $15.2 million, which was offset by the related valuation allowance. The Company did not adjust the provisional amount estimated at December 31, 2017 upon its final analysis during the year ended December 31, 2018 of the income tax effects due to the enactment of the TCJA.

As of December 31, 2018, the Company had $151.5 million of U.S. Federal and state net operating losses, $8.5 million of research and development tax credits and $19.6 million of orphan drug tax credits available to carry forward. A portion of the net operating loss carryforwards will begin to expire in 2026, the research and development tax credits in 2023 and the orphan drug tax credit in 2033.

The Company's tax attributes, including net operating losses and credits, are subject to any ownership changes as defined under Internal Revenue Code Sections 382 and 383. A change in ownership could affect the Company's ability to utilize its net operating losses and credits. As of December 31, 2018, the Company does not believe that an ownership change has occurred. Any future ownership changes may cause a limitation on the Company's ability to utilize existing tax attributes.

The Company files income tax returns in the U.S. federal jurisdiction and in the State of Maryland. The Company's federal income tax returns for tax years 2003 and after remain subject to examination by the U.S. Internal Revenue Service. The Company's Maryland income tax returns for the tax years 2006 and thereafter remain subject to examination by the Comptroller of Maryland. In addition, all of the net operating losses, research and development tax credit and orphan drug credit carryforwards that may be used in future years are still subject to adjustment.

The Company did not have unrecognized tax benefits as of December 31, 2018 and 2017, and does not anticipate this to change significantly over the next 12 months. The Company will recognize interest and penalties accrued on any unrecognized tax benefits as a component of income tax expense. Reconciliations between the statutory federal income tax rate and the effective income tax rate of income tax expense is as follows as of December 31:

	2018		2017		2016	
U.S. Federal statutory tax rate	21.0	%	34.0	%	34.0	%
State taxes	5.7		4.4		4.6	
Research credit	0.8		1.3		1.0	
Orphan drug credit	10.4		11.5		9.0	
Other	0.6		0.3		—	
Stock-based compensation	(0.1)		(0.7)		(0.7)	
Change in valuation allowance	(38.4)		(5.1)		(47.9)	
Effective change due to corporate tax rate reduction	—		(45.7)		—	
Provision for income taxes	—	%	—	%	—	%

10. Research and License Agreements

The Company has entered into a research services agreement (the Research Agreement) with the University of Basel (the University) for biological evaluation of selectin antagonists. Certain patents covering the rivipansel compound remain subject to provisions of the Research Agreement. Under the terms of the Research Agreement, the Company will owe a 10% payment to the University for all future milestone and royalty payments received from Pfizer with respect to rivipansel. There were no payments recorded for the years ended December 31, 2018, 2017 or 2016.

The Company and Pfizer have entered into the Pfizer Agreement in October 2011, which provides Pfizer an exclusive worldwide license to rivipansel for vaso-occlusive crisis associated with sickle cell disease and for other diseases for which the drug candidate may be developed. The Company was responsible for completion of a Phase 2

Table of Contents

clinical trial, after which Pfizer assumed all further development and commercialization responsibilities. Upon execution of the Pfizer Agreement, the Company received an up-front payment of $22.5 million. The Pfizer Agreement also provides for potential milestone payments of up to $115.0 million upon the achievement of specified development milestones, including the dosing of the first patients in Phase 3 clinical trials for up to two indications and the first commercial sale of a licensed product in the United States and selected European countries for up to two indications; potential milestone payments of up to $70.0 million upon the achievement of specified regulatory milestones, including the acceptance of the Company's filings for regulatory approval by regulatory authorities in the United States and Europe for up to two indications; and potential milestone payments of up to $135.0 million upon the achievement of specified levels of annual net sales of licensed products. Pfizer has the right to terminate the Pfizer Agreement by giving prior written notice. The Company received a $15.0 million non-refundable milestone payment in May 2014 and an additional non-refundable milestone payment of $20.0 million in June 2015. The Company has not recognized any revenue under the Pfizer Agreement subsequent to the year ended December 31, 2015.

The Company assessed this arrangement in accordance with Topic 606, and concluded that the contract counterparty, Pfizer, is a customer. The Company identified the following performance obligations under the contract: (1) an exclusive worldwide license to rivipansel for vaso-occlusive crisis associated with sickle cell disease and for other diseases for which the drug candidate may be developed; and (2) research and development (R&D) services to develop the rivipansel compound for commercial use related to the Phase 2 clinical trial and delivery of data to Pfizer. In addition to the rivipansel license and R&D services, management also considered whether the Company's participation in a Joint Steering Committee (JSC) constituted a promise. The JSC was formed solely for communication purposes between Pfizer and the Company relating to Pfizer's progress in further developing rivipansel for commercial use. The Company's involvement in the JSC is limited to attending the JSC meetings on a semi-annual basis to receive progress updates from Pfizer; Pfizer is responsible for calling and organizing the meetings. Given the minimal level of involvement by the Company, participation in the JSC is not considered a significant aspect of the arrangement and the related costs, such as employee time, are not material. Therefore, management views the Company's participation in JSC as administrative only and did not further evaluate its participation in the JSC in identifying the performance obligations in the Pfizer Agreement.

Under the Pfizer Agreement, in order to evaluate the appropriate transaction price, the Company determined that the up-front amount constituted the entirety of the consideration to be included in the transaction price and to be allocated to the performance obligations based on the Company's best estimate of their relative stand-alone selling prices. The transaction price of the up-front fee was equal to the $22.5 million received. The fixed up-front consideration is recognized under ASC 606 based on when control of the combined performance obligation is transferred to the customer, which corresponds with the service period (through March 2013). None of the clinical or regulatory milestones have been included in the transaction price, as all milestone amounts were fully constrained. Event-driven milestones are a form of variable consideration as the payments are variable based on the occurrence of future events. As part of its evaluation of the constraint, the Company considered numerous factors, including that receipt of the milestones is outside the control of the Company and is contingent upon success in future clinical trials and the licensee's efforts. Recognition of event-driven milestones should be recognized when the variable consideration is no longer constrained. There are no changes in accounting necessary for the $15.0 million milestone payment recognized in May 2014 or the $20.0 million milestone payment recognized in June 2015 as a result of Pfizer dosing the first patient in the Phase 3 clinical trial of rivipansel. Future event-driven milestones will be recognized when the constraint no longer applies.

Any consideration related to sales-based milestones (including royalties) will be recognized when the related sales occur as they were determined to relate predominantly to the license granted to Pfizer and therefore have also been excluded from the transaction price. The Company will re-evaluate the transaction price in each reporting period and as uncertain events are resolved or other changes in circumstances occur. In evaluating the Pfizer Agreement, the Company considered that there were no significant financing components identified, no non-cash consideration was

paid by Pfizer and no consideration was paid by the Company to Pfizer as part of the arrangement.

11. Employee Benefit Plan

The Company has a defined contribution plan under the Internal Revenue Code Section 401(k). This plan covers substantially all employees who meet minimum age and service requirements and allows participants to defer a portion of their annual compensation on a pre-tax basis. For the years ended December 31, 2018, 2017 and 2016, the Company made a discretionary match of 50% up to the first 3% of employee contributions. All matching contributions have been

Table of Contents

paid by the Company. The Company's matching contributions vest in full at the employee's third anniversary of employment and all employer contributions thereafter vest immediately. The total Company matching contributions were approximately $94,000, $88,000 and $79,000 for the years ended December 31, 2018, 2017 and 2016, respectively.

12. Quarterly Financial Information (Unaudited)

Summarized quarterly financial information for each of the years ended December 31, 2018 and 2017 are as follows:

	Quarter Ended December 31, 2018	September 30, 2018	June 30, 2018	March 31, 2018
Revenue	$ —	$ —	$ —	$ —
Net loss	$ (13,906,915)	$ (11,575,111)	$ (11,278,763)	$ (11,512,844)
Loss per share—basic and diluted	$ (0.32)	$ (0.27)	$ (0.26)	$ (0.33)

	Quarter Ended December 31, 2017	September 30, 2017	June 30, 2017	March 31, 2017
Revenue	$ —	$ —	$ —	$ —
Net loss	$ (9,257,858)	$ (7,950,101)	$ (8,141,796)	$ (7,931,313)
Loss per share—basic and diluted	$ (0.27)	$ (0.24)	$ (0.30)	$ (0.34)