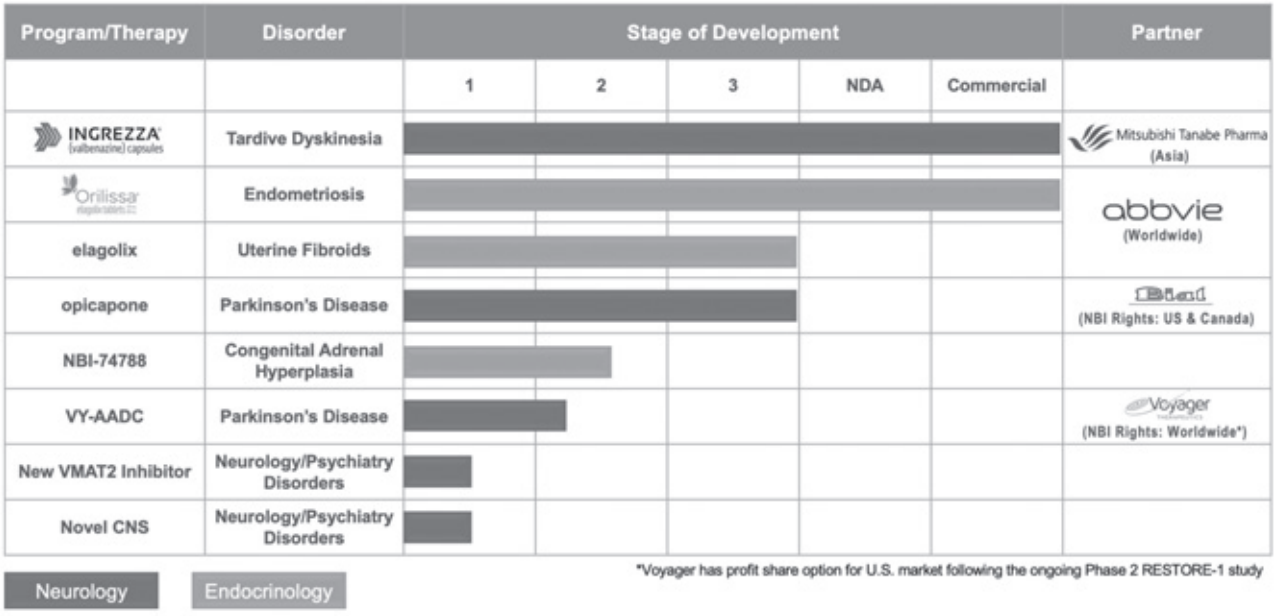
Neurocrine®
BIOSCIENCES

2018 ANNUAL REPORT

With the FDA approval of two novel medicines in the past two years, both of which were discovered in the Company's research labs, and a diversified, multistage pipeline, Neurocrine Biosciences has the potential for three approved treatments in the United States across four therapeutic indications by 2020.



Neurocrine Biosciences (Nasdaq: NBIX) is a neuroscience-focused, biopharmaceutical company with more than 25 years of experience discovering and developing life-changing treatments for people with serious, challenging and under-addressed neurological, endocrine and psychiatric disorders. The company's diverse portfolio includes FDA-approved treatments for tardive dyskinesia and endometriosis* and clinical development programs in multiple therapeutic areas including Parkinson's disease, congenital adrenal hyperplasia and uterine fibroids*. Headquartered in San Diego, Neurocrine Biosciences specializes in targeting and interrupting disease-causing mechanisms involving the interconnected pathways of the nervous and endocrine systems. For more information, visit neurocrine.com. *(*in collaboration with AbbVie)*

Dear Fellow Shareholders,

2018 was another pivotal year for Neurocrine Biosciences as we continued to build a world-class neuroscience-focused biopharmaceutical company and advance our mission to bring life-changing treatments to improve the lives of people with serious, challenging and under-addressed neurological, psychiatric and endocrine disorders. We made significant progress raising physician and patient awareness of INGREZZA® (valbenazine), the first U.S. Food and Drug Administration (FDA)-approved treatment for tardive dyskinesia (TD), a devastating involuntary movement disorder, and celebrated the FDA approval of a second medication discovered at Neurocrine Biosciences, ORILISSA® (elagolix), for endometriosis-associated pain. We also advanced our diversified, multistage pipeline, which includes treatments for Parkinson's disease and congenital adrenal hyperplasia, two new compounds discovered through our robust internal R&D efforts, and four new gene therapy programs acquired in early 2019 through a strategic collaboration with Voyager Therapeutics. I am confident that we have laid the foundation to make meaningful strides throughout 2019 and work toward our goal of having three FDA-approved treatments in four indications by 2020.

We are pleased to have exceeded our launch expectations for INGREZZA since the FDA approval in 2017 and continue to work diligently on several fronts to bring this important medicine to people coping with the physical and emotional suffering associated with TD. We expanded our field sales team and launched efforts to educate healthcare professionals to better recognize TD symptoms to help diagnose patients. As a result, approximately 71,500 INGREZZA prescriptions were filled in 2018, yielding net product sales of more than $400 million. We believe this growth was driven by the efficacy and tolerability of INGREZZA as well as a favorable coverage climate (about 90% of lives are covered by insurance), a high fulfillment rate (more than 70% of prescriptions are dispensed), and affordability (about 80% of patients pay less than $10 out-of-pocket).

With the vast majority of the half a million people with TD still undiagnosed, we recognize that we have more work to do. We remain focused on building excitement and awareness around INGREZZA among physicians and the TD patient community by continuing to invest in our field sales and support team, reaching physicians, and expanding the reach of our multimedia patient and caregiver educational campaign, *Talk About TD*. We believe INGREZZA is well positioned to deliver on hope and help alleviate the suffering of those living with TD.

Beyond INGREZZA, we are proud of the U.S. regulatory clearance of ORILISSA, the second treatment discovered at Neurocrine Biosciences and cleared by the FDA in the last two years, and like INGREZZA, a testament to our research and development capabilities. ORILISSA is not only the first oral treatment for the management of moderate to severe pain associated with endometriosis in over a decade, but also the first and only oral gonadotropin-releasing hormone antagonist approved by the FDA for this indication. Marketed by AbbVie, ORILISSA became available to patients in the U.S. in August 2018 and in Canada in October 2018. Approximately 3 million women suffer from endometriosis in the U.S., with 300,000 newly diagnosed women each year. AbbVie also plans to submit a New Drug Application (NDA) to the FDA for elagolix for the treatment of uterine fibroids, with an anticipated commercial launch in 2020.

Our late-stage pipeline is led by opicapone, a catechol-O-methyltransferase (COMT) inhibitor for the adjunctive treatment of Parkinson's disease, a chronic, progressive and debilitating neurodegenerative disease that affects approximately 1 million people in the U.S. We in-licensed opicapone from BIAL for exclusive development and commercialization rights in the United States and Canada and we're working toward an NDA submission in the second quarter of 2019.

Following opicapone is NBI-74788, a corticotropin-releasing factor type 1 (CRF-1) receptor antagonist, for the treatment of classic congenital adrenal hyperplasia (CAH), a rare genetic disorder affecting the adrenal glands. Patients with classic CAH have highly variable clinical features, limited treatment options and often require supraphysiological doses of glucocorticoids, which can lead to serious long-term health consequences. We recently announced positive interim results from a Phase II proof-of-concept trial in adults and plan to meet with the FDA to discuss the registration program for NBI-74788 in adult and pediatric patients with CAH later in 2019.

In January 2019, we acquired four gene therapy programs through our strategic development and commercialization collaboration with Voyager Therapeutics. The partnership combines our expertise in neuroscience, drug development and commercialization with Voyager's expertise in gene therapy targeting severe neurological diseases. In the coming year, we expect to advance a Phase II gene therapy program in Parkinson's disease and select a lead gene therapy candidate for Friedreich's ataxia, a rare neurological disease.

We also expanded our early-stage clinical pipeline with Investigational New Drug (IND) filings for two newly discovered compounds -- a VMAT2 inhibitor and a novel compound addressing the central nervous system -- targeting neurological and/or psychiatric disorders. In addition, as part of our continued commitment to bring important new medicines for patients with central nervous system disorders, we also entered a research partnership with Jnana Therapeutics to combine our in-house R&D expertise with their drug discovery platform to identify small molecules targeted to the solute carrier family of transporters.

The progress and results we have achieved in 2018 and early 2019 would not be possible without the talent, dedication, hard work and commitment of our team members, who are the lifeblood of our company. I could not be prouder of our team's accomplishments or more optimistic about our opportunities for further growth as we build on our 25-year legacy. As we pursue our vision of becoming *the* leader in neuroscience-based therapeutics for diseases that lack effective treatments, we will continue building our commercial infrastructure to support future launches, while remaining lean and efficient, taking calculated risks, and making strategic investments that drive shareholder value. I'm inspired by our potential, thankful for the opportunity to lead Neurocrine Biosciences into its next phase of growth, and grateful for the continued support of our Board and you, our shareholders.

Sincerely,

Kevin Gorman, Ph.D.
Chief Executive Officer

NEUROCRINE BIOSCIENCES, INC.
12780 El Camino Real
San Diego, CA 92130

Notice of Annual Meeting of Stockholders

To Be Held on May 22, 2019

TO THE STOCKHOLDERS:

NOTICE IS HEREBY GIVEN that the 2019 Annual Meeting of Stockholders of Neurocrine Biosciences, Inc., a Delaware corporation (the "Company"), will be held on May 22, 2019, at 10:30 a.m., local time, at the Company's corporate headquarters located at 12780 El Camino Real, San Diego, California 92130, for the following purposes as more fully described in the Proxy Statement accompanying this Notice:

1. The election of the two nominees for Class II Director named herein to the Board of Directors to serve for a term of three years;
2. An advisory vote on the compensation paid to the Company's named executive officers;
3. To approve an amendment to the Company's 2011 Equity Incentive Plan to increase the number of shares of common stock reserved for issuance thereunder from 19,000,000 to 21,000,000;
4. The ratification of the appointment of Ernst & Young LLP as the Company's independent registered public accounting firm for the fiscal year ending December 31, 2019; and
5. To transact such other business as may properly come before the Annual Meeting of Stockholders or any continuation, adjournment or postponement thereof.

Only stockholders of record at the close of business on March 29, 2019 are entitled to receive notice of and to vote at the Annual Meeting of Stockholders.

All stockholders are cordially invited to attend the Annual Meeting of Stockholders in person. Your vote is important. Whether or not you plan to attend the Annual Meeting, we hope you will vote as soon as possible. You may vote over the Internet, as well as by telephone or by mailing a proxy or voting instruction form. Please review the instructions on each of your voting options described in these proxy materials. Stockholders attending the Annual Meeting may vote in person even if they have returned a proxy.

By Order of the Board of Directors,

Darin Lippoldt
Chief Legal Officer and Corporate Secretary

San Diego, California
April 17, 2019

Important Notice Regarding the Availability of Proxy Materials for the Stockholders' Meeting to be Held on May 22, 2019 at 10:30 a.m. Local Time at 12780 El Camino Real, San Diego, California 92130.

The proxy statement and annual report to stockholders are available at www.proxyvote.com. Please have the control number on your proxy card available.

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NEUROCRINE BIOSCIENCES, INC.

12780 El Camino Real
San Diego, California 92130

PROXY STATEMENT

This Proxy is solicited on behalf of Neurocrine Biosciences, Inc., a Delaware corporation (the "Company" or "Neurocrine"), for use at its 2019 Annual Meeting of Stockholders (the "Annual Meeting") to be held on May 22, 2019 beginning at 10:30 a.m., local time, or at any continuations, postponements or adjournments thereof for the purposes set forth in this proxy statement and the accompanying Notice of Annual Meeting of Stockholders. The Annual Meeting will be held at the Company's corporate headquarters, located at 12780 El Camino Real, San Diego, California 92130. The Company's phone number is (858) 617-7600.

ABOUT THE ANNUAL MEETING

Why did I receive these proxy materials?

The Company has sent you these proxy materials because the Board of Directors of the Company is soliciting your proxy to vote at the Annual Meeting, including at any adjournments or postponements of the Annual Meeting. You are invited to attend the Annual Meeting to vote on the proposals described in this proxy statement. However, you do not need to attend the Annual Meeting to vote your shares. Instead, you may simply complete, sign and return the enclosed proxy card, or follow the instructions on the enclosed proxy card to submit your proxy over the telephone or Internet.

We intend to mail these proxy materials on or about April 22, 2019 to all shareholders of record entitled to vote at the Annual Meeting.

What is the purpose of the Annual Meeting?

At the Annual Meeting, stockholders will act upon the matters outlined in these proxy materials, including the election of the two nominees for Class II Director named herein, an advisory vote on the compensation paid to the Company's named executive officers, approval of an amendment increasing the number of shares of common stock reserved for issuance under the Company's 2011 Equity Incentive Plan from 19,000,000 to 21,000,000, and ratification of the appointment of Ernst & Young LLP as the Company's independent registered public accounting firm for the fiscal year ending December 31, 2019. In addition, following the Annual Meeting, management will report on the performance of the Company and respond to questions from stockholders.

Who can attend the Annual Meeting?

All stockholders of record at the close of business on March 29, 2019 (the "Record Date"), or their duly appointed proxies, may attend the Annual Meeting. If you attend, please note that you may be asked to present valid picture identification, such as a driver's license or passport. Cameras, recording devices and other electronic devices will not be permitted at the Annual Meeting.

Please also note that if you hold your shares in "street name" (that is, through a broker or other nominee), you will need to bring a copy of a brokerage statement reflecting your stock ownership as of the record date and check in at the registration desk at the Annual Meeting.

Who is entitled to vote at the Annual Meeting?

Stockholders of record at the close of business on the Record Date are entitled to receive notice of and to participate in the Annual Meeting. At the close of business on the Record Date, 91,284,279 shares of the Company's common stock, $0.001 par value per share, were issued and outstanding. If you were a stockholder of record on that date, you will be entitled to vote all of the shares that you held on that date at the Annual Meeting, or any continuations, postponements or adjournments of the Annual Meeting.

Each outstanding share of the Company's common stock will be entitled to one vote on each proposal considered at the Annual Meeting.

What constitutes a quorum? What are broker non-votes? What are advisory votes?

The presence at the Annual Meeting, in person or by proxy, of the holders of a majority of the aggregate voting power of the common stock outstanding on the Record Date will constitute a quorum, permitting the Company to conduct its business at the Annual Meeting. As of the Record Date, 91,284,279 shares of common stock, representing the same number of votes, were outstanding. Thus, the presence of the holders of common stock representing at least 45,642,140 shares will be required to establish a quorum. The presence of a quorum will be determined by the Inspector of Elections (the "Inspector").

Proxies received but marked as abstentions, as well as "broker non-votes," will be included in the calculation of the number of shares considered to be present at the Annual Meeting. Broker non-votes occur when a holder of shares in "street name" does not give instructions to the broker or nominee holding the shares as to how to vote on "non-routine" matters. Under the rules and interpretations of the New York Stock Exchange (the "NYSE"), "non-routine" matters are matters that may substantively affect the rights or privileges of stockholders, such as mergers, stockholder proposals and elections of directors, even if not contested. In addition, as required by Section 957 of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, advisory votes on executive compensation are non-routine matters for which brokers do not have discretionary authority to vote shares held by account holders. Only ratification of our independent registered public accounting firm under Proposal Four is considered a routine matter.

The vote on Proposal Two is advisory. The approval or the disapproval of Proposal Two will not be binding on the Company or the Board of Directors and will not create or imply any change to the fiduciary duties of the Board of Directors. However, the Company and the Board of Directors will consider the results of the advisory vote on Proposal Two in making future decisions about compensation of the Company's named executive officers.

How do I vote my shares in person at the Annual Meeting?

You may vote your shares held in your name as the stockholder of record in person at the Annual Meeting. You may vote your shares held beneficially in street name in person at the Annual Meeting only if you obtain a legal proxy from the broker, bank, trustee, or nominee that holds your shares giving you the right to vote the shares. Even if you plan to attend the Annual Meeting, we recommend that you also submit your proxy or voting instructions as described below so that your vote will be counted if you later decide not to attend the Annual Meeting.

How can I vote my shares without attending the Annual Meeting?

Whether you hold shares directly as the stockholder of record or beneficially in street name, you may direct how your shares are voted without attending the Annual Meeting. If you are a stockholder of record, you may vote by proxy. You can vote by proxy over the Internet, by mail or by telephone pursuant to instructions provided on the enclosed proxy card. If you hold shares beneficially in street name, you may also vote by proxy over the

Internet or you can also vote by telephone or mail by following the voting instruction form provided to you by your broker, bank, trustee, or nominee. The deadline for voting by telephone or electronically is 11:59 p.m., Eastern Time, on May 21, 2019.

Who will bear the cost of soliciting votes for the Annual Meeting?

To the extent such costs are incurred, the cost of solicitation of proxies will be borne by the Company. The Company will reimburse expenses incurred by brokerage firms and other persons representing beneficial owners of shares in forwarding solicitation material to beneficial owners. To assist in soliciting proxies (votes), the Company may retain a professional proxy solicitation firm, at an approximate cost of $10,000. Proxies also may be solicited by certain of the Company's directors, officers and regular employees, without additional compensation, personally, by telephone or by other appropriate means.

Can I change my vote after I return my proxy?

Yes. Even after you have submitted your proxy, you may change your vote at any time before the proxy is exercised by filing with the Corporate Secretary of the Company either a notice of revocation or a duly executed proxy bearing a later date. Your proxy will also be revoked if you attend the Annual Meeting and vote in person. Attendance at the Annual Meeting will not by itself revoke a previously granted proxy.

What does it mean if I receive more than one set of proxy materials?

If you receive more than one set of proxy materials, your common stock is registered in more than one name or are registered in different accounts. Please complete a proxy for each separate set of proxy materials that you receive to ensure that all of your shares are voted.

What are the Board of Directors' recommendations?

Unless you give other instructions on your proxy, the persons named as proxy holders on the proxy will vote in accordance with the recommendations of the Board of Directors. The Board of Directors' recommendation is set forth together with the description of each item in this proxy statement. In summary, the Board of Directors recommends a vote:

- *for* election of the two nominees for Class II Director named herein (see Proposal One);
- *for* an advisory vote on the compensation paid to the Company's named executive officers (see Proposal Two);
- *for* approval of the amendment to the Company's 2011 Equity Incentive Plan to increase the number of shares of common stock reserved for issuance thereunder from 19,000,000 to 21,000,000 (see Proposal Three); and
- *for* ratification of the appointment of Ernst & Young LLP as the Company's independent registered public accounting firm for the fiscal year ending December 31, 2019 (see Proposal Four).

With respect to any other matter that properly comes before the meeting, the proxy holders will vote as recommended by the Board of Directors or, if no recommendation is given, in their own discretion.

What vote is required to approve each item?

Election of Directors. The affirmative vote of a plurality of the votes cast at the Annual Meeting is required for the election of directors. A properly executed proxy marked "WITHHOLD AUTHORITY" with respect to the election of one or more directors will not be voted with respect to the director or directors indicated, although it will be counted for purposes of determining whether there is a quorum.

Other Items. For each other item, the affirmative vote of the holders of a majority of the shares represented in person or by proxy and entitled to vote on the item will be required for approval. A properly executed proxy marked "ABSTAIN" with respect to any such matter will not be voted, although it will be counted for purposes of determining the number of shares represented in person or by proxy at the Annual Meeting. Accordingly, an abstention will have the effect of a negative vote for each item. If you hold your shares in "street name" through a broker or other nominee, your broker or nominee will not be permitted to exercise voting discretion with respect to each of the matters to be acted upon, other than Proposal Four. Thus, if you do not give your broker or nominee specific instructions, your shares will not be voted on and will not be counted for any other matter to be acted upon, other than Proposal Four. Shares represented by such "broker non-votes" will, however, be counted in determining whether there is a quorum.

Who counts the votes?

Votes cast by proxy or in person at the Annual Meeting will be tabulated by the Inspector.

How can I find out the results of the voting at the Annual Meeting?

Preliminary voting results will be announced at the Annual Meeting. In addition, final voting results will be published in a current report on Form 8-K that we expect to file with the SEC within four business days after the Annual Meeting. If final voting results are not available to us in time to file a Form 8-K within four business days after the meeting, we intend to file a Form 8-K to publish preliminary results and, within four business days after the final results are known to us, file an amended Form 8-K to publish the final results.

What proxy materials are available on the internet?

The proxy statement and annual report to stockholders are available at www.proxyvote.com. Please have the control number on your proxy card available.

STOCK OWNERSHIP

Who are the principal stockholders, and how much stock does management own?

The following table sets forth the beneficial ownership of the Company's common stock as of March 15, 2019 by (i) each of the executive officers named in the table under the heading "Summary Compensation Table," (ii) each current director, (iii) all current directors and executive officers as a group and (iv) all persons known to the Company to be the beneficial owners of more than 5% of the Company's common stock. The table is based upon information supplied by our executive officers, directors and principal stockholders and a review of Schedules 13D and 13G, if any, filed with the SEC. A total of 91,266,478 shares of the Company's common stock were issued and outstanding as of March 15, 2019.

Name and Address of Beneficial Owner (1)	Number of Shares of Common Stock Owned (2)	Number of Shares of Common Stock Acquirable Within 60 Days (3)	Total Number of Shares of Common Stock Beneficially Owned (4)	Percent Ownership
FMR LLC (5) 245 Summer Street, Boston, MA 02210	13,097,329	—	13,097,329	14.4%
Janus Henderson Group plc (6) 201 Bishopsgate EC2M 3AE, United Kingdom	9,120,212	—	9,120,212	10.0%
The Vanguard Group (7) 100 Vanguard Blvd., Malvern, PA 19355	8,079,818	—	8,079,818	8.9%
BlackRock, Inc. (8) 55 East 52nd Street, New York, NY 10055	4,978,917	—	4,978,917	5.5%
Perceptive Advisors LLC (9) 51 Astor Place, 10th Floor, New York, NY 10003	4,608,554	—	4,608,554	5.0%
Kevin C. Gorman, Ph.D.	417,597	951,443	1,369,040	1.5%
Matthew C. Abernethy	2,276	26,465	28,741	*
Eric Benevich.	20,911	151,491	172,402	*
Kyle W. Gano, Ph.D.	86,145	245,256	331,401	*
Eiry W. Roberts, M.D.	3,417	27,500	30,917	*
William H. Rastetter, Ph.D.	24,750	139,750	164,500	*
Gary A. Lyons	245,697	111,458	357,155	*
George J. Morrow	—	81,458	81,458	*
Richard F. Pops	29,512	111,458	140,970	*
Alfred W. Sandrock, Jr., M.D., Ph.D.	—	81,458	81,458	*
Stephen A. Sherwin, M.D.	47,548	111,458	159,006	*
All current executive officers and directors as a group (15 persons)	1,179,283	2,734,010	3,913,293	4.3%

* Represents beneficial ownership of less than one percent (1%) of the outstanding shares of the Company's common stock as of March 15, 2019.

(1) The address of each beneficial owner named is c/o Neurocrine Biosciences, Inc., 12780 El Camino Real, San Diego, CA 92130, unless otherwise indicated.

(2) Represents shares of common stock owned, excluding shares of common stock subject to stock options that are listed under the heading "Number of Shares of Common Stock Acquirable Within 60 Days," by the named parties as of March 15, 2019.

(3) Shares of common stock subject to stock options currently exercisable or exercisable within 60 days of March 15, 2019, regardless of exercise price, are deemed to be outstanding for computing the percentage ownership of the person holding such options and the percentage ownership of any group of which the holder is a member, but are not deemed outstanding for computing the percentage of any other person.

(4) Beneficial ownership is determined in accordance with the rules of the SEC and generally includes voting or investment power with respect to securities. Except as indicated by footnote, and subject to community property laws where applicable, the Company believes that the persons named in the table have sole voting and investment power with respect to all shares of common stock shown as beneficially owned by them.

(5) Based on Amendment No. 9 to Schedule 13G filed by FMR LLC ("FMR") on February 13, 2019, reporting ownership as of December 31, 2018. According to such filing, FMR beneficially owns 13,097,329 shares of common stock and has sole voting power as to 1,805,400 shares of common stock. Various persons have the right to receive or the power to direct the receipt of dividends from, or the proceeds from the sale of, the common stock held by FMR.

(6) Based on Amendment No. 1 to Schedule 13G filed by Janus Henderson Group plc ("Janus") on February 8, 2019, reporting ownership as of December 31, 2018. According to such filing, Janus beneficially owns 9,120,212 shares of common stock and sole voting power as to 0 shares of common stock. These securities are owned by various institutional investors for which Janus has a controlling ownership interest. As a result of its role as an investment adviser or sub-adviser to such institutional investors, for the purposes of the reporting requirements of the Exchange Act, Janus is deemed to be a beneficial owner of such securities; however, Janus expressly disclaims that it is, in fact, the beneficial owner of such securities.

(7) Based on Amendment No. 3 to Schedule 13G filed by The Vanguard Group, Inc. ("Vanguard Group") on February 11, 2019, reporting ownership as of December 31, 2018. According to such filing, Vanguard Group beneficially owns 8,079,818 shares of common stock and sole voting power as to 49,601 shares of common stock.

(8) Based on Amendment No. 6 to Schedule 13G filed by BlackRock, Inc. ("BlackRock") on February 11, 2019, reporting ownership as of December 31, 2018. According to such filing, BlackRock beneficially owns 4,978,917 shares of common stock and sole voting power as to 4,617,444 shares of common stock. Various persons have the right to receive or the power to direct the receipt of dividends from, or the proceeds from the sale of shares of the common stock held by BlackRock. No one person's interest in the common stock held by BlackRock is more than five percent of the Company's total outstanding common stock.

(9) Based on Amendment No. 2 to Schedule 13G filed by Perceptive Advisors LLC ("Perceptive") on February 14, 2019, reporting ownership as of December 31, 2018. According to such filing, Perceptive beneficially owns 4,608,554 shares of common stock and sole voting power as to 0 shares of common stock.

Section 16(a) Beneficial Ownership Reporting Compliance

Section 16(a) of the Exchange Act requires the Company's officers and directors, and persons who beneficially own 10% or greater of a registered class of the Company's equity securities, to file reports of ownership on Form 3 and reports of changes in ownership on Form 4 or Form 5 with the SEC. Such officers, directors and 10% or greater stockholders are also required by SEC rules to furnish the Company with copies of all Section 16(a) forms they file. Based solely on its review of the copies of such forms received by it, and written representations from certain reporting persons, the Company believes that its officers, directors and 10% or greater stockholders complied with all Section 16(a) filing requirements applicable to them during the fiscal year ended December 31, 2017, except that: (i) one report covering one transaction was inadvertently filed late by the Company on behalf of each of Mr. Lyons, Mr. Mollica, Mr. Morrow, Ms. Nevinny, Mr. Pops, Dr. Rastetter, Dr. Sandrock and Dr. Sherwin; (ii) one report covering three transactions was inadvertently filed late by the Company on behalf of each of Dr. Gano and Dimitri Grigoriadis, Ph.D., our Chief Research Officer; (iii) one report covering seven transactions was inadvertently filed late by the Company on behalf of Christopher O'Brien, M.D., our former Chief Medical Officer; (iv) one report covering six transactions was inadvertently filed late by the Company on behalf of Malcolm Lloyd-Smith, our Chief Regulatory Officer; and (v) two reports covering six transactions were inadvertently filed late by the Company on behalf of Darin Lippoldt, our Chief Legal Officer. Based solely on its review of the copies of such forms received by it, and written representations from certain reporting persons, the Company believes that its officers, directors and 10% or greater stockholders complied with all Section 16(a) filing requirements applicable to them during the fiscal year ended December 31, 2018.

BOARD OF DIRECTORS AND COMMITTEES

General

The Company's bylaws, as amended, provide that the Board of Directors is comprised of seven directors. The Company's Certificate of Incorporation provides that the Board of Directors is divided into three classes. There are currently two directors in Class I (William H. Rastetter, Ph.D. and George J. Morrow), two directors in Class II (Richard F. Pops and Stephen A. Sherwin, M.D.), and three directors in Class III (Kevin C. Gorman, Ph.D., Gary A. Lyons and Alfred W. Sandrock, Jr., M.D., Ph.D.). With the exception of Kevin C. Gorman, Ph.D., who is the Chief Executive Officer of the Company, all current members of the Board of Directors meet the definition of "independent director" under the Nasdaq Stock Market qualification standards.

The directors in Class I hold office until the 2021 Annual Meeting of Stockholders, the directors in Class II hold office until the 2019 Annual Meeting of Stockholders, and the directors in Class III hold office until the 2020 Annual Meeting of Stockholders (or, in each case, until their earlier resignation, removal from office, or death). After each such election, the directors in each such case will then serve in succeeding terms of three years and until a successor is duly elected and qualified. Officers of the Company serve at the discretion of the Board of Directors. There are no family relationships among the Company's directors and executive officers.

The term of office for directors Richard F. Pops and Stephen A. Sherwin, M.D. will expire at the 2019 Annual Meeting of Stockholders. At the 2019 Annual Meeting of Stockholders, the stockholders will elect two Class II directors for a term of three years.

Director Biographies of Class I and Class III Directors not Nominated for Reelection at the 2019 Annual Meeting of Stockholders

Kevin C. Gorman, Ph.D. has been employed with the Company since 1993. He was appointed President and Chief Executive Officer in January 2008 after having served as Executive Vice President and Chief Operating Officer since September 2006 and prior to that, as Executive Vice President and Chief Business Officer and Senior Vice President of Business Development. He currently serves as Chief Executive Officer and has served on the Board of Directors since January 2008. From 1990 until 1993, Dr. Gorman was a principal of Avalon Medical Partners, L.P. where he was responsible for the early stage founding of the Company and several other biotechnology companies such as Onyx Pharmaceuticals, Inc., Metra Biosystems, Inc., Idun Pharmaceuticals, Inc. and ARIAD Pharmaceuticals, Inc. Dr. Gorman received his Ph.D. in immunology and M.B.A. in Finance from the University of California, Los Angeles and did further post-doctoral training at The Rockefeller University.

The continued service of Dr. Gorman on the Company's Board of Directors is based on the fact that as Chief Executive Officer of the Company, Dr. Gorman has extensive knowledge of our product candidates, our employees and the industry in which we operate. Dr. Gorman has also demonstrated exceptional leadership skills, sound business judgment and a strong commitment to the Company.

William H. Rastetter, Ph.D. has served on the Board of Directors since February 2010 and as Chairman of the Board of Directors since May 2011. Currently, he serves as the Chairman of the Board of Directors for Fate Therapeutics, a publicly traded company focused on cellular therapies. Dr. Rastetter also serves on the Board of Directors for each of Regulus Therapeutics, a publicly traded company focused on RNA based therapeutics, and Daré Bioscience, Inc. (previously known as Cerulean Pharma Inc.), a publicly traded company focused on women's health care and Grail, Inc., a private company developing deep sequencing approaches for disease diagnosis, with an initial focus on the early diagnosis of cancer. Dr. Rastetter was a partner in the venture capital firm, Venrock, from 2006 through early 2013 and was Executive Chairman of Biogen Idec, Inc. from 2003 to 2005. Earlier, he served as Chairman and Chief Executive Officer of IDEC Pharmaceuticals Corporation until its merger with Biogen in 2003; he joined IDEC Corporation as its Chief Executive Officer at the company's

founding in 1986. From 1984 to 1986, Dr. Rastetter was Director of Corporate Ventures at Genentech, where from 1982 to 1984 he held scientific positions. He held a series of faculty positions including Associate Professor at the Massachusetts Institute of Technology ("MIT") from 1975 to 1982. Dr. Rastetter has a Bachelor of Science degree in chemistry from MIT, and received Master of Art and doctorate degrees in chemistry from Harvard University.

The continued service of Dr. Rastetter on the Company's Board of Directors is based on Dr. Rastetter's scientific and technical expertise combined with his business experience in leading rapidly growing companies in the life science industry. The Company's continued growth is dependent on scientific and technical advances, and the Board of Directors believes that Dr. Rastetter offers both strategic and technical insight into the risks and opportunities associated with our business. In addition, Dr. Rastetter's board and executive leadership experience at other life science companies provides valuable strategic and governance insight to the Board of Directors as a whole.

Gary A. Lyons has served on the Board of Directors since joining Neurocrine in February 1993. Mr. Lyons served as the President and Chief Executive Officer of the Company from February 1993 through January 2008. Prior to joining the Company, Mr. Lyons held a number of senior management positions at Genentech, Inc., including Vice President of Business Development and Vice President of Sales. Mr. Lyons is currently the Chairman of the Board of Directors for each of Rigel Pharmaceuticals, Inc., a biotechnology company focused on developing drugs for the treatment of inflammatory/autoimmune and metabolic diseases, and Retrophin, an ultra-orphan disease commercial stage company. Mr. Lyons is a member of the Board of Directors of Vical Incorporated, a biotechnology company focused on the prevention and treatment of serious or life-threatening diseases, and Novus Therapeutics, Inc., a biotechnology company focused on ear, nose and throat therapies. Mr. Lyons was previously a director of Neurogesx, Cytori Therapeutics, and Facet Biotech Corporation. Mr. Lyons holds a B.S. in marine biology from the University of New Hampshire and an M.B.A. from Northwestern University's J.L. Kellogg Graduate School of Management.

The continued service of Mr. Lyons on the Company's Board of Directors is based on Mr. Lyons' extensive business development and corporate governance experience and, as the Company's former Chief Executive Officer, his in-depth understanding of the Company's product candidates, management and culture. With this history with the Company and management, Mr. Lyons brings a unique perspective and point of view to the Company's Board of Directors.

George J. Morrow has served on the Board of Directors since October 2015. Mr. Morrow served as Executive Vice President, Global Commercial Operations at Amgen Inc., a global biotechnology company, from 2003 until his retirement in 2011. He joined Amgen in 2001 as Executive Vice President, Worldwide Sales and Marketing. His responsibilities included oversight of all commercial functions for Amgen's broad spectrum of products in more than 50 countries worldwide, and the introduction of multiple new products into global markets. From 1992 to 2001, Mr. Morrow held executive management and commercial positions within several subsidiaries of Glaxo Wellcome, including Group Vice President for Commercial Operations (U.S.), Managing Director (U.K.), and most recently as President and Chief Executive Officer of Glaxo Wellcome, Inc. (U.S.). Mr. Morrow currently serves on the board of directors of Vical, Inc., a biotechnology company and Align Technology, Inc., a global medical device company. He has previously served on the boards of Glaxo Wellcome, Inc., Human Genome Sciences, Inc., Safeway, Inc., National Commerce Bank, the John Hopkins School of Public Health, and the Duke University Fuqua School of Business. Mr. Morrow holds a B.S. in chemistry from Southampton College, Long Island University, an M.S. in biochemistry from Bryn Mawr College and an M.B.A. from Duke University.

The continued service of Mr. Morrow on the Company's Board of Directors is based on his extensive commercialization experience at Amgen, his broad executive experience at GlaxoSmithKline Inc., and his years of experience in corporate governance as a board member of several publicly traded companies. Mr. Morrow's board, leadership experience and commercialization expertise prove valuable strategic insights to the Board of Directors.

Alfred W. Sandrock, Jr., M.D., Ph.D. has served on our Board of Directors since September 2015. Dr. Sandrock is the Executive Vice President and Chief Medical Officer at Biogen, Inc., and has served in this role since November 2015. Since joining Biogen in 1998, Dr. Sandrock has held several senior executive positions including Group Senior Vice President of Development Sciences, Senior vice President of Neurology research and Development, and Vice President of clinical Development, Neurology. Prior to joining Biogen, Dr. Sandrock was Assistant Professor of Neurology at Harvard Medical School and Assistant in Neurology at Massachusetts General Hospital. Dr. Sandrock currently serves on the Boards of Directors of Praxis Precision Medicines, Inc. and Disarm Therapeutics Inc., and is a member of the Partners Healthcare Innovation Advisory Board. Dr. Sandrock also serves as Chairman of the Board of the PhRMA Foundation. Dr. Sandrock received his B.A. in human biology from Stanford University, an M.D. from Harvard Medical School and a Ph.D. in neurobiology from Harvard University. Dr. Sandrock completed an internship in medicine, a residency and chief residency in neurology, and a clinical fellowship in neuromuscular disease and clinical neurophysiology (electromyography) at Massachusetts General Hospital.

The continued service of Dr. Sandrock on the Company's Board of Directors is based on his extensive experience and credentials in the biotechnology industry as an Executive Vice President of Biogen and his extensive experience in successfully leading development teams. In addition, Dr. Sandrock's medical expertise in neurology and his scientific background provide a unique contribution to the Board of Directors.

Director Biographies of Class II Directors Nominated for Reelection at the 2019 Annual Meeting of Stockholders

Richard F. Pops has served on the Board of Directors since April 1998. Mr. Pops is the Chairman and Chief Executive Officer of Alkermes, Inc. He joined Alkermes as Chief Executive Officer in February 1991. Under his leadership, Alkermes has grown from a privately held research-based company with 25 employees to an international, publicly traded pharmaceutical company with more than 1,200 employees. In addition to Alkermes, he currently serves on the Board of Directors of: Acceleron Pharma, Inc., a biotechnology company focused on musculoskeletal and metabolic therapeutics; Epizyme Corporation, a biotechnology company focused on epigenetics; the Biotechnology Industry Organization; and the Pharmaceutical Research and Manufacturers of America (PhRMA). He holds a B.A. in economics from Stanford University.

The nomination of Mr. Pops for election to the Company's Board of Directors is based on his leadership experience and track record for growing companies, his strength in business strategy and his financial acumen and capital markets experience. In addition, Mr. Pops is recognized for his service to the biopharmaceutical industry as a member of the Boards of the Biotechnology Industry Organization and the Pharmaceutical Research and Manufacturers of America. His breadth and range of industry experience from operations and strategy is a significant contribution to the Board of Directors. The Nominating and Governance Committee also considers whether each nominee has the time available, in light of other business and personal commitments. Among the criteria considered is whether any incumbent director nominee demonstrates preparedness and engagement required for effective service to the Board and its Committees. In connection with the nomination of Mr. Pops, the Nominating and Governance Committee considered Mr. Pops' consistently demonstrated preparedness, attendance, engagement, and vigorous leadership of the Compensation Committee and his contributions to both the Audit Committee and the Board.

Stephen A. Sherwin, M.D. has served on the Board of Directors since April 1999. Dr. Sherwin currently divides his time between advisory work in the life science industry and patient care and teaching in his specialty of medical oncology. He is a Clinical Professor of Medicine at the University of California, San Francisco, and a volunteer Attending Physician in Hematology-Oncology at the Zuckerberg San Francisco General Hospital. Dr. Sherwin currently serves on the Board of Directors of Aduro Biotech, Biogen and Neon Therapetics. He is a Venture Partner with Third Rock Ventures and a member of the Scientific Steering Committee of the Parker Institute for Cancer Immunotherapy. Previously Dr. Sherwin was chairman and chief executive officer of Cell Genesys, a cancer immunotherapy company, from 1990 until the company's merger in 2009 with BioSante

Pharmaceuticals (now ANI Pharmaceuticals). He was also a co-founder and chairman of Abgenix, an antibody company which was acquired by Amgen in 2006, and co-founder and chairman of Ceregene, a gene therapy company which was acquired by Sangamo Biosciences in 2013. From 1983 to 1990, Dr. Sherwin held various positions in clinical research at Genentech, most recently that of Vice President. Prior to 1983, he was on the staff of the National Cancer Institute. In addition, Dr. Sherwin previously served on the board of directors of the Biotechnology Industry Organization from 2001 to 2014 and as its chairman from 2009 to 2011, and was a member of the President's Council of Advisors in Science and Technology (PCAST) Working Group on Drug Development from 2011 to 2013. Dr. Sherwin holds a B.A. in biology summa cum laude from Yale University and an M.D. from Harvard Medical School, is board-certified in internal medicine and medical oncology, and is a fellow of the American College of Physicians.

The nomination of Dr. Sherwin for election to the Company's Board of Directors is based on his experience and credentials in the biotechnology industry as the former Chief Executive Officer of Cell Genesys, Inc., the former chairman and co-founder of Abgenix, Inc., the chairman and co-founder of Ceregene, Inc., and his positions at Genentech, Inc. and the National Cancer Institute. Dr. Sherwin is also currently Chairman Emeritus of the Biotechnology Industry Organization. In addition to his biotechnology credentials, Dr. Sherwin's medical expertise in internal medicine and medical oncology provides a unique contribution to the Board of Directors.

CORPORATE GOVERNANCE

General

We have long believed that good corporate governance is important to ensure that Neurocrine is managed for the long-term benefit of its stockholders. We periodically review our corporate governance policies and practices. The Board of Directors has adopted Corporate Governance Guidelines which describe our corporate governance practices and address corporate governance issues such as Board composition, responsibilities and director qualifications. These guidelines are available at www.neurocrine.com.

What is the Board's leadership structure?

It is the Company's policy to separate the roles of Chief Executive Officer and Chairman of the Board. This separation recognizes the independent roles of the Board of Directors, Chairman of the Board and Chief Executive Officer. The Board of Directors sets Company strategy and provides oversight and accountability for the Chief Executive Officer and Company management. The Chairman of the Board presides over the Board of Directors and provides guidance to the Chief Executive Officer. The Chief Executive Officer and the balance of the Board of Directors set Company goals with the Chief Executive Officer providing leadership and day to day oversight in furtherance of those goals. The Company believes that separation of the Board of Directors and Company leadership reinforces the independence of the Board of Directors in its oversight of the business and affairs of the Company, and creates an environment that is more conducive to objective evaluation and oversight of management's performance, increasing management accountability and improving the ability of the Board of Directors to monitor whether management's actions are in the best interests of the Company and its stockholders.

Are the members of the Board independent?

The Board of Directors annually reviews the independence of each of the directors. With the exception of Kevin C. Gorman, Ph.D., who is the Chief Executive Officer of Neurocrine, all current members of the Board of Directors meet the definition of "independent director" under the Nasdaq Stock Market qualification standards.

How often did the Board meet during fiscal 2018?

The Board of Directors held a total of five meetings during 2018. For 2018, the Board of Directors had an Audit Committee, a Compensation Committee, a Nominating/Corporate Governance Committee, and a Science and Medical Technology Committee. Charters for each of these committees have been established and approved by the Board of Directors and current copies of the charters for each of the committees have been posted on the Company's website at *www.neurocrine.com.* During 2018, no director attended fewer than 75% of the aggregate of the total meetings of the Board of Directors and no director attended fewer than 75% of the total number of meetings held by all committees of the Board of Directors on which such director served.

What are the various committees of the Board and which directors are on those committees?

The Company's Audit Committee is comprised entirely of directors who meet the independence requirements set forth in Nasdaq Stock Market Rule 5605(c)(2)(A). Information regarding the functions performed by the committee, its membership, and the number of meetings held during the fiscal year is set forth in the "Report of the Audit Committee," included in this proxy statement. The members of the Audit Committee are Richard F. Pops, George J. Morrow and Stephen A. Sherwin, M.D. The Board of Directors has determined that Richard F. Pops, George J. Morrow and Stephen A. Sherwin, M.D. are "audit committee financial experts" within the meaning of item 407(d)(5) of SEC Regulation S-K. This committee met five times during 2018.

The Company's Compensation Committee consists of directors Richard F. Pops, George J. Morrow and Alfred W. Sandrock, Jr., M.D., Ph.D. The Compensation Committee reviews and recommends to the Board of

Directors the compensation of executive officers and other employees of the Company. Under its charter, the Compensation Committee may form, and delegate authority to, subcommittees as appropriate. Each of the current members of the Compensation Committee is an "independent director" as defined by Nasdaq Stock Market Rule 5605(a)(2). This committee met seven times during 2018.

The Company's Nominating/Corporate Governance Committee consists of directors Stephen A. Sherwin, M.D., George J. Morrow and Alfred W. Sandrock, Jr. M.D., Ph.D., all of whom are "independent directors" as defined by Nasdaq Stock Market Rule 5605(a)(2). The Nominating/Corporate Governance Committee is responsible for developing and implementing policies and practices relating to corporate governance, including administration of the Company's Code of Business Conduct and Ethics, which applies to all of the Company's officers, directors and employees, and is available on the Company's website at *www.neurocrine.com.* The functions of this committee also include consideration of the composition of the Board of Directors and recommendation of individuals for election as directors of the Company. The Nominating/Corporate Governance Committee will consider nominees recommended by stockholders, provided such nominations are made pursuant to the Company's bylaws and applicable law. This committee met four times during 2018.

The Company's Science and Medical Technology Committee consists of directors Gary A. Lyons, William H. Rastetter, Ph.D. and Alfred W. Sandrock, Jr. M.D., Ph.D. The purpose of the Science and Medical Technology Committee is to assist the Board of Directors in its oversight of management's exercise of its responsibility to make significant scientific judgments relating to the Company's research and development activities and portfolio. This committee met two times during 2018.

Compensation Committee interlocks and insider participation

During 2018, the Compensation Committee consisted of George J. Morrow, Richard F. Pops, Corinne H. Nevinny and Alfred W. Sandrock, Jr., M.D., Ph.D. Ms. Nevinny served on the Compensation Committee until she resigned from the Board of Directors on September 18, 2018. Dr. Sandrock joined the Compensation Committee in September 2018 after Ms. Nevinny's resignation. No interlocking relationship existed between any member of the Compensation Committee and any member of any other company's Board of Directors or compensation committee.

What is our director nomination process?

In selecting non-incumbent candidates and reviewing the qualifications of incumbent candidates for the Board of Directors, the Nominating/Corporate Governance Committee considers the Company's corporate governance principles, which include the following:

- Directors should possess the highest ethics, integrity and values, and be committed to representing the long-term interest of the stockholders. They also must have experience they can draw upon to help direct the business strategies of the Company together with sound judgment. They must be actively engaged in the pursuit of information relevant to the Company's business and must constructively engage their fellow Board members and management in dialogue and the decision-making process.
- Directors must be willing to devote sufficient time to carrying out their duties and responsibilities effectively, and should be committed to serve on the Board of Directors for an extended period of time.
- Directors should notify the Chairman of the Board and Chairman of the Nominating/Corporate Governance Committee in the event of any significant change in their employment responsibilities or affiliations. Director nominees should meet the Director Qualification requirements set forth in the Company's Corporate Governance Guidelines.
- In evaluating director nominees, the Nominating/Corporate Governance Committee considers the following factors: personal and professional integrity, ethics and values including any potential conflicts of interest; experience in corporate management and the biopharmaceutical industry, such as serving as an officer or former officer of a publicly held company; experience as a board member of another publicly held company; and additionally, for nominees seeking re-election, meeting attendance and participation and compliance with Company policies.

It is the Company's policy to have a diversity of skills, professional experience, education, associations, achievements, training, points of view and individual qualities and attributes represented on the Board of Directors. The Nominating/Corporate Governance Committee considers the diversity of the Board of Directors when evaluating candidates for election or re-election to the Board of Directors.

The Nominating/Corporate Governance Committee's goal is to assemble a Board of Directors that brings to the Company a variety of perspectives and skills derived from high quality business and professional experience. In doing so, the Nominating/Corporate Governance Committee also considers candidates with appropriate non-business backgrounds.

In addition to the foregoing, the Nominating/Corporate Governance Committee Charter and Corporate Governance Guidelines set forth minimum criteria for director nominees. The Nominating/Corporate Governance Committee may also consider such other facts as it may deem are in the best interests of the Company and its stockholders. The Nominating/Corporate Governance Committee does, however, believe that at least one, and preferably several members of the Board of Directors, meet the criteria for an "audit committee financial expert" as defined by SEC rules. We believe that all of our directors should have a reputation for honesty, integrity and highest ethical standards, and should demonstrate business acumen, an ability to exercise sound judgment and a commitment to serve the Company.

Board Self-Assessment

The Nominating/Corporate Governance Committee ensures that each member of the Board, the Committees, and the Chair of the Board are annually assessed annually aimed at enhancing effectiveness. Directors complete a number of different evaluations in order to provide performance feedback and suggestions for improved effectiveness or contributions. The assessments are done by way of a questionnaire conducted by our external legal counsel, Cooley, LLP. The assessments are treated on a confidential basis, with the results tallied on an anonymous basis for review. The results of the evaluation are analyzed by our Chief Legal Officer, the Nomination/Corporate Governance Committee and the Board, who decide whether any changes are needed to the Board's processes, procedures, composition or Committee structure. The evaluation carried out in 2018 indicated that all individuals and groups were effectively fulfilling their responsibilities.

Board Education

The Board recognizes the importance of ongoing director education. In order to facilitate member of the Board of Directors' educational development, the members of the Board of Directors regularly meet with management and are given periodic presentations on our business and recent business developments. Members of the Board of Directors also attend dinners on the evening before regularly scheduled Board meetings. Generally, at these dinners the Board meets with senior decision-makers within the Company or outside experts in order to enhance the Board's understanding of our business and affairs. In addition, on an annual basis an external expert meets with the Board to discuss new developments relating to corporate governance and the operation of public company boards. The Company also provides funding for members of the Board of Directors to attend outside director continuing education programs sponsored by educational and other institutions.

Identification and Evaluation of Nominees for Director

The Nominating/Corporate Governance Committee identifies nominees for director by first evaluating the current members of the Board of Directors willing to continue in service. Current members with qualifications and skills that are consistent with the Nominating/Corporate Governance Committee's criteria for service and who are willing to continue are considered for re-nomination, balancing the value of continuity of service by existing members of the Board of Directors with that of obtaining members who would offer a new perspective. If any member of the Board of Directors does not wish to continue in service, or if the Board of Directors decides not to re-nominate a member for re-election, the Nominating/Corporate Governance Committee identifies the

desired skills and experience of a new nominee in light of the criteria above. The Nominating/Corporate Governance Committee generally polls the Board of Directors and members of management for their recommendations and may also seek input from third-party search firms. The Nominating/Corporate Governance Committee may also seek input from industry experts or analysts. The Nominating/Corporate Governance Committee reviews the qualifications, experience and background of the candidates. Final candidates are then interviewed by the Company's independent directors and executive management. In making its determinations, the Nominating/Corporate Governance Committee evaluates each individual in the context of the Company's Board of Directors as a whole, with the objective of assembling a group that can best perpetuate the success of the Company and represent stockholder interests through the exercise of sound judgment. After review and deliberation of all feedback and data, the Nominating/Corporate Governance Committee makes its recommendation to the Board of Directors.

We have not received director candidate recommendations from the Company's stockholders and do not have a formal policy regarding consideration of such recommendations. However, any recommendations received from stockholders will be evaluated in the same manner that potential nominees suggested by members of our Board of Directors, management or other parties are evaluated. Accordingly, our Board of Directors believes a formal policy regarding consideration of such recommendations is unnecessary.

What is our process for stockholder communications with the Board of Directors?

Stockholders of the Company wishing to communicate with the Company's Board of Directors or an individual director may send a written communication to the Board of Directors or such director c/o Neurocrine Biosciences, Inc., 12780 El Camino Real, San Diego, CA 92130, Attn: Corporate Secretary. Each communication must set forth:

- the name and address of the Company stockholder on whose behalf the communication is sent; and
- the number of Company shares that are beneficially owned by such stockholder as of the date of the communication.

Each stockholder communication will be reviewed by the Company's Corporate Secretary to determine whether it is appropriate for presentation to the Board or such director. Examples of inappropriate communications include advertisements, solicitations or hostile communications.

Communications determined by the Corporate Secretary to be appropriate for presentation to the Board or such director will be submitted to the Board or such director on a periodic basis.

What is the Board's role in risk oversight?

While the Board of Directors has ultimate oversight responsibility for the risk management process, it has delegated portions of this responsibility to various committees. The Board of Directors and its committees oversee risk throughout the business with focus on financial risk, legal/compliance risk, scientific/clinical development risk, and strategic risk. The Audit Committee focuses on financial risk and internal controls. The Nominating/Corporate Governance Committee and Audit Committee each focus on legal/compliance risk with the Nominating/Corporate Governance Committee taking the lead on the governance and management process and the Audit Committee taking the lead on SEC reporting and compliance. The Compensation Committee addresses compensation policies and practices as they relate to risk management practices and risk-taking incentives. The Science and Medical Technology Committee reviews the scientific risk associated with the Company's research and development activities and any related legal/compliance risk. The participation of the full Board of Directors in setting the Company's business strategy incorporates assessment of strategic risk for the Company overall.

How do the Company's compensation policies and practices relate to risk management practices and risk-taking incentives?

During 2018, the Compensation Committee, in conjunction with the Board of Directors, conducted an assessment of how the Company's compensation policies and practices relate to risk management practices and risk-taking incentives. As part of the process, the Compensation Committee engaged the services of an external, independent compensation consulting firm to conduct an independent risk assessment. Based on this assessment, the Compensation Committee concluded that the Company's compensation policies and practices do not create risks that are reasonably likely to have a material adverse effect on the Company.

What is our policy regarding Board member attendance at the Company's Annual Meeting?

The Company does not have a formal policy regarding attendance by members of the Board of Directors at the Annual Meeting. Directors Dr. Rastetter and Dr. Gorman attended the 2018 Annual Meeting of Stockholders.

REPORT OF THE AUDIT COMMITTEE

The following Report of the Audit Committee does not constitute soliciting material and should not be deemed filed or incorporated by reference into any other Company filing under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended, except to the extent the Company specifically incorporates this Report by reference therein.

The Audit Committee is currently comprised of directors George J. Morrow, Richard F. Pops and Stephen A. Sherwin, M.D. All current committee members satisfy the definition of "independent director" as established in the Nasdaq Stock Market qualification requirements. The Audit Committee met five times during the year ended December 31, 2018.

The Audit Committee oversees the Company's financial reporting process on behalf of the Board of Directors. Management has the primary responsibility for the Company's financial statements and the reporting process, including the Company's systems of internal controls. In fulfilling its oversight responsibilities, the Audit Committee has reviewed and discussed with management the Company's audited financial statements as of and for the year ended December 31, 2018, including a discussion of the quality, not just the acceptability, of the accounting principles, the reasonableness of significant judgments and the clarity of disclosures in the financial statements.

The Audit Committee also has reviewed and discussed the Company's audited financial statements as of and for the year ended December 31, 2018 with the Company's independent registered public accounting firm, who are responsible for expressing an opinion on the conformity of those audited financial statements with accounting principles generally accepted in the United States, as well as their judgments as to the quality, not just the acceptability, of the Company's accounting principles and such other matters as are required to be discussed with the Audit Committee under Auditing Standard No. 16, *Communications with Audit Committees*, as adopted by the Public Company Accounting Oversight Board (United States) (the "PCAOB"). The independent registered public accounting firm also is responsible for performing an independent audit of the Company's internal control over financial reporting in accordance with the auditing standards of the PCAOB. In addition, the Audit Committee has discussed the independent registered public accounting firm's independence from management and the Company, including the matters in the written disclosures and the letter from the independent registered public accounting firm required by applicable requirements of the PCAOB and considered the compatibility of non-audit services with the auditors' independence.

The Audit Committee discussed with the Company's independent registered public accounting firm the overall scope and plans for their audits. The Audit Committee meets with the independent registered public accounting firm, with and without management present, to discuss the results of their examinations, their evaluations of the Company's internal controls, and the overall quality of the Company's financial reporting.

In reliance on the reviews and discussions referred to above, the Audit Committee recommended to the Board of Directors that the audited financial statements be included in the Company's Annual Report on Form 10-K for the year ended December 31, 2018, for filing with the Securities and Exchange Commission. The Audit Committee and the Board of Directors are also seeking stockholder ratification of the selection of the Company's independent registered public accounting firm for the year ending December 31, 2019.

Respectfully submitted by:
AUDIT COMMITTEE

George J. Morrow
Richard F. Pops
Stephen A. Sherwin, M.D.

Audit and non-audit fees

The aggregate fees billed to the Company by Ernst & Young LLP, the Company's independent registered public accounting firm, for the indicated services for each of the last two fiscal years were as follows:

	2018	2017
Audit fees (1)	$ 998,939	$1,123,601
Audit related fees (2)	—	—
Tax fees (3)	140,300	89,970
All other fees (4)	—	—
Total	$1,139,239	$1,213,571

(1) Audit fees consist of fees for professional services performed by Ernst & Young LLP for the integrated audit of the Company's annual financial statements and internal control over financial reporting and review of financial statements included in the Company's 10-Q filings, review of registration statements on Form S-8, and services that are normally provided in connection with statutory and regulatory filings or engagements.

(2) Audit related fees consist of fees for assurance and related services performed by Ernst & Young LLP that are reasonably related to the performance of the audit or review of the Company's financial statements.

(3) Tax fees consist of fees for professional services performed by Ernst & Young LLP with respect to tax compliance, tax advice and tax planning. For 2018, these fees included $78,950 for tax preparation services, $15,450 for services related to Section 382 studies for net operating loss utilization and $45,900 for state tax planning. For 2017, these fees included $74,970 for tax preparation services and $15,000 for services related to Section 382 studies for net operating loss utilization.

(4) All other fees consist of fees for other permissible work performed by Ernst & Young LLP that does not meet with the above category descriptions

The Audit Committee has considered whether the provision of non-audit services is compatible with maintaining the independence of Ernst & Young LLP, and has concluded that the provision of such services is compatible with maintaining the independence of that firm. All of the services rendered by Ernst & Young LLP were pre-approved by the Audit Committee in accordance with the Audit Committee pre-approval policy described below.

Audit Committee policy regarding pre-approval of audit and permissible non-audit services of our independent registered public accounting firm

The Company's Audit Committee has established a policy that all audit and permissible non-audit services provided by the Company's independent registered public accounting firm will be pre-approved by the Audit Committee. These services may include audit services, audit related services, tax services and other services. The Audit Committee considers whether the provision of each non-audit service is compatible with maintaining the independence of the Company's registered public accounting firm. Pre-approval is detailed as to the particular service or category of services and is generally subject to a specific budget. The Company's independent registered public accounting firm and management are required to periodically (at least quarterly) report to the Audit Committee regarding the extent of services provided by the independent registered public accounting firm in accordance with this pre-approval, and the fees for the services performed to date.

COMPENSATION COMMITTEE REPORT

The following Report of the Committee does not constitute soliciting material and should not be deemed filed or incorporated by reference into any other Company filing under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended, except to the extent the Company specifically incorporates this Report by reference therein.

The Compensation Committee of the Company has reviewed and discussed the Compensation Discussion and Analysis required by Item 402(b) of Regulation S-K with management and, based on such review and discussions, the Compensation Committee recommended to the Board of Directors that the Compensation Discussion and Analysis be included in this proxy statement.

Respectfully submitted by:
COMPENSATION COMMITTEE

George J. Morrow
Richard F. Pops
Alfred W. Sandrock, Jr., M.D., Ph.D.

PROPOSAL ONE: ELECTION OF DIRECTORS

The Company's bylaws, as amended, provide that the Board of Directors is comprised of seven directors. The Company's Certificate of Incorporation provides that the Board of Directors is divided into three classes. There are currently two directors in Class I (William H. Rastetter, Ph.D. and George J. Morrow), two directors in Class II (Richard F. Pops and Stephen A. Sherwin, M.D.), and three directors in Class III (Kevin C. Gorman, Ph.D., Gary A. Lyons and Alfred W. Sandrock, M.D., Ph.D.). With the exception of Kevin C. Gorman, Ph.D., who is the Chief Executive Officer of Neurocrine, all current members of the Board of Directors meet the definition of "independent director" under the Nasdaq Stock Market qualification standards.

The directors in Class I hold office until the 2021 Annual Meeting of Stockholders, the directors in Class II hold office until the 2019 Annual Meeting of Stockholders and the directors in Class III hold office until the 2020 Annual Meeting of Stockholders (or, in each case, until their earlier resignation, removal from office, or death). After each such election, the elected directors will then serve in succeeding terms of three years and until a successor is duly elected and qualified. Officers of the Company serve at the discretion of the Board of Directors. There are no family relationships among the Company's directors and executive officers.

The term of office for directors Richard F. Pops and Stephen A. Sherwin, M.D., will expire at the 2019 Annual Meeting of Stockholders. At the 2019 Annual Meeting of Stockholders, the stockholders will elect two Class II directors for a term of three years.

Nominees for Election at the Annual Meeting

All of the nominees (Richard F. Pops and Stephen A. Sherwin, M.D.) are currently Class II directors of the Company. All of the nominees were previously elected to the Board of Directors by the Company's stockholders. Information about the nominees is set forth below:

Name of Director	Age	Position in the Company	Director Since
Richard F. Pops (1) (2)	56	Director	1998
Stephen A. Sherwin, M.D. (1) (3)	70	Director	1999

Who are the remaining Directors that are not up for election this year?

The Class I and III directors will remain in office after the 2019 Annual Meeting of Stockholders. The names and certain other current information about the directors whose terms of office continue after the Annual Meeting are set forth below:

Name of Director	Age	Position in the Company	Director Since
Kevin C. Gorman, Ph.D.	61	Chief Executive Officer and Director	2008
Gary A. Lyons (4)	67	Director	1993
George J. Morrow (1) (2) (3)	67	Director	2015
William H. Rastetter, Ph.D. (4)	70	Chairman of the Board	2010
Alfred W. Sandrock, Jr. M.D., Ph.D. (2) (3) (4)	61	Director	2015

(1) Member of the Audit Committee.
(2) Member of the Compensation Committee.
(3) Member of the Nominating/Corporate Governance Committee.
(4) Member of the Science and Medical Technology Committee.

Vote Required

The nominees receiving the highest number of affirmative votes of the shares present in person or represented by proxy at the 2019 Annual Meeting of Stockholders and entitled to vote on the election of directors will be elected to the Board of Directors.

Votes withheld from any director are counted for purposes of determining the presence or absence of a quorum, but have no other legal effect under Delaware law.

Unless otherwise instructed, the proxy holders will vote the proxies received by them for the Company's Class II nominees named above. If any of the Company's nominees is unable or declines to serve as a director at the time of the Annual Meeting, the proxies will be voted for any nominee who is designated by the present Board of Directors to fill the vacancy. It is not expected that any of the Company's nominees will be unable or will decline to serve as a director. **The Board of Directors unanimously recommends that stockholders vote "FOR" the Class II nominees named above.**

PROPOSAL TWO: ADVISORY VOTE ON COMPENSATION PAID TO THE COMPANY'S NAMED EXECUTIVE OFFICERS

General

At the 2017 Annual Meeting of Stockholders, the Board of Directors, as a matter of good corporate governance, recommended that the stockholders approve an advisory vote on Named Executive Officer compensation ("say-on-pay") on an annual basis. Approximately 94% of the stockholder votes cast at the 2017 Annual Meeting of Stockholders were for the Company's recommendation, and in response the Company holds an annual say-on-pay vote. This annual vote is not intended to address any specific compensation item, but rather the overall compensation of the Company's Named Executive Officers and the philosophy, policies and practices described in this proxy statement.

Summary of the Company's Executive Compensation Philosophy

The Compensation Committee of the Board of Directors (the "Committee") bases its executive compensation decisions on a number of objectives which include aligning management incentives with interests of stockholders, providing competitive compensation, appropriately balancing compensation risk in the context of the Company's business strategy and meeting evolving compensation governance standards. The philosophy of the Committee in establishing the Company's compensation policy for executive officers as well as all other employees is to:

- align compensation plans with both short-term and long-term goals and objectives of the Company and stockholder interests;
- attract and retain highly skilled individuals by offering compensation that compares favorably to other employers who are competing for available employees;
- incentivize employees through a mix of base salary, bonus amounts based on achievement of defined corporate and personal goals and long-term equity awards to generate returns for stockholders; and
- pay for performance by ensuring that an ever-increasing percentage of an individual's compensation is performance-based as they progress to higher levels within the Company.

As discussed below in the Compensation Discussion and Analysis, we believe we have adopted a compensation philosophy that provides strong alignment between executive pay and performance based on strategic goals designed to provide both near-term and long-term growth in stockholder value. The historical approval rates, on an advisory basis, for the Company's executive compensation program have been over 98% for each of the 2016, 2017 and 2018 Annual Meetings of Stockholders. The Committee and our Board of Directors believe that this level of approval of our executive compensation program is indicative of our stockholders' strong support of our compensation philosophy and goals as well as the overall administration of executive compensation by the Committee and the Board of Directors.

You are being asked to approve on an advisory basis, the compensation paid to the Company's Named Executive Officers as set forth in the Compensation Discussion and Analysis, Summary Compensation Table and related notes and narrative set forth herein. This vote is not intended to address any specific compensation item, but rather the overall compensation of the Company's Named Executive Officers and the philosophy, policies and practices described in this proxy statement.

Vote Required

The 'say-on-pay' vote is advisory and therefore not binding on the Company, the Committee or the Board of Directors. However, we value the opinions of our stockholders and will review and will continue to consider the outcome of this advisory vote when making future compensation decisions for our Named Executive Officers and will evaluate whether any actions are necessary to address the stockholders' concerns. Approval of this advisory vote requires the affirmative vote of the majority of shares represented in person or by proxy and entitled to vote on the item. **The Board of Directors unanimously recommends voting "FOR" approval of the Company's Named Executive Officers compensation.**

PROPOSAL THREE: APPROVAL OF AN AMENDMENT TO THE 2011 EQUITY INCENTIVE PLAN

General

The Neurocrine Biosciences, Inc. 2011 Equity Incentive Plan was originally approved by the Board of Directors and the stockholders of the Company in 2011, and was subsequently amended by the Board of Directors and our stockholders most recently in 2018 (the "2011 Plan"). Subject to stockholder approval, our Board of Directors approved an amendment of the 2011 Plan on February 8, 2019 (the 2011 Plan, as amended, the "Amended 2011 Plan"). The Board of Directors is requesting stockholder approval of the Amended 2011 Plan, which includes the following material changes to the 2011 Plan, as described in more detail under "Summary of the Amended 2011 Plan" below:

- to increase in the maximum number of shares of common stock that may be issued under the 2011 Plan from 19,000,000 to 21,000,000 shares.

The Board of Directors believes that the proposed increase in the number of shares of common stock reserved for issuance under the Amended 2011 Plan will allow the Company to attract and retain valuable employees and continue to provide its employees, consultants and directors with a proprietary interest in the Company. In particular, the Company anticipates a material increase in its number of employees in 2019 in connection with: (i) the continued commercialization of the Company's first approved product, INGREZZA® (valbenazine) capsules, which began in May 2017; and (ii) development activities related to the Company's other development programs. Within the Company, equity awards foster an ownership culture and are a critical tool for driving stockholder value and for recruiting, retaining and motivating employees. The Company grants annual equity awards to employees as an incentive to retain its work force and remain competitive. The terms of the Company's annual equity awards and the Company's employee policies are designed to align employee and stockholder interests. The Company grants equity awards to a broad group of employees and such awards constitute a significant component of the Company's employees' total compensation. The Company's equity awards contain long-term vesting, performance-based vesting, and provisions designed to encourage employees to focus on the Company's long-term goals and success. If our stockholders do not approve the Amended 2011 Plan, the Company strongly believes that it will be unable to successfully continue to use equity as part of its compensation program, as most of its competitors in the industry do, putting the Company at a significant disadvantage and compromising its ability to enhance stockholder value.

The Amended 2011 Plan authorizes the grant to our employees of options that qualify as incentive stock options under Section 422 of the Code. The 2011 Plan also authorizes the grant of nonstatutory stock options, stock appreciation rights, restricted stock awards, restricted stock units, performance stock awards and other stock awards (collectively "stock awards") to our employees, directors and consultants. The 2011 Plan also provides that certain nonstatutory stock options will be automatically granted to non-employee directors and the Chairman of the Board of Directors of the Company, as described below.

As of March 15, 2019, under the 2011 Plan there were 6,675,604 options outstanding to purchase shares of common stock, and 4,998,075 shares were available for future stock awards; 1,690,001 shares were subject to outstanding restricted stock units; and 3,400,386 shares previously issued upon exercise of options granted and 2,242,069 shares previously issued upon vesting of restricted stock units under the 2011 Plan are now outstanding shares of common stock. As of March 29, 2019, there were approximately 630 employees and directors eligible to receive grants under the 2011 Plan.

As of the Record Date, whether granted under the 2011 Plan or otherwise, an aggregate of 6,873,590 shares are issuable upon exercise of outstanding options with a weighted average exercise price of $48.69 and a weighted average remaining contractual term of 7.1 years; and 1,714,376 shares are subject to unvested restricted stock units. The closing price of the Company's common stock on March 29, 2019 was $88.10 with 91,284,279 shares outstanding.

Vote Required

At the Annual Meeting, the stockholders are being asked to approve the Amended 2011 Plan. The affirmative vote of the holders of a majority of the shares represented in person or by proxy at the Annual Meeting and entitled to vote on the item will be required to approve the Amended 2011 Plan. **The Board of Directors recommends voting "FOR" the approval of the Amended 2011 Plan.**

Summary of the Amended 2011 Plan

The essential features of the Amended 2011 Plan are summarized below. This summary does not purport to be complete and is subject to, and qualified by reference to, all provisions of the Amended 2011 Plan. The Amended 2011 Plan, which reflects all of the changes proposed to be made to the 2011 Plan, is attached as Appendix A to this proxy statement and is incorporated herein by reference.

Purpose. The purpose of the Amended 2011 Plan is to enable the Company to attract and retain the best available personnel, to provide additional incentives to the employees, directors and consultants of the Company and to promote the success of the Company's business.

Administration. Our Board of Directors has the authority to administer the Amended 2011 Plan. Our Board of Directors also has the authority to delegate some or all of the administration of the Amended 2011 Plan (except the Non-Discretionary Grant Program summarized below) to a committee or committees composed of one or more members of the Board of Directors or Company officers (the Board of Directors or any such committee, the "Administrator"). The Amended 2011 Plan may be administered by different committees with respect to different groups of employees and consultants. The Administrator may make any determinations deemed necessary or advisable for the Amended 2011 Plan. The Administrator, in its discretion, selects the employees, directors and consultants to whom stock awards may be granted, the time or times at which such awards shall be granted, the number of shares subject to each such grant, and other terms of the stock awards. All decisions, determinations and interpretations of the Administrator shall be final and binding on all holders.

Eligibility. Incentive stock options may be granted only to our employees. Nonstatutory stock options, stock appreciation rights, restricted stock awards, restricted stock unit awards, performance stock awards and other stock awards may be granted under the Amended 2011 Plan to our employees, directors and consultants. Participation in the non-discretionary grant program is limited to our non-employee directors (see "Non-Discretionary Grant Program" below).

Stock Subject to the Amended 2011 Plan

Subject to stockholder approval of this Proposal Three and adjustments for changes in our capitalization, an aggregate of 21,000,000 shares of common stock will be reserved for issuance under the Amended 2011 Plan. Shares may be issued in connection with a merger or acquisition as permitted by the rules of the applicable national securities exchange, and such issuance shall not reduce the number of shares available for issuance under the Amended 2011 Plan. If a stock award granted under the Amended 2011 Plan expires or otherwise terminates without all of the shares having been issued, or if any shares of common stock issued pursuant to a stock award are forfeited to us because of the failure to meet a contingency or condition required for the vesting of such shares, then the shares of common stock not issued under such stock award, or forfeited to us, shall revert to and again become available for issuance under the Amended 2011 Plan.

If any shares subject to a stock award are not delivered to a participant because such shares are withheld for the payment of taxes or the stock award is exercised through a reduction of shares subject to the stock award (i.e. "net exercised"), or an appreciation distribution in respect of a stock appreciation right is paid in shares of common stock, the number of shares that are not delivered will not again become available for issuance under the Amended 2011 Plan. If the exercise price of any stock award is satisfied by tendering shares of common stock held by the participant, then the number of shares so tendered will not become available for issuance under the Amended 2011 Plan.

The aggregate maximum number of shares of common stock that may be issued under the Amended 2011 Plan pursuant to the exercise of incentive stock options, subject to stockholder approval of this Proposal Three, is 21,000,000 shares.

Per-Person Award Limitations. The Amended 2011 Plan provides that no employee may be granted, in any fiscal year of the Company, stock options, stock appreciation rights (and any other stock awards whose value is determined by reference to an increase over an exercise or strike price of at least the fair market value on the date of grant) (all such options, stock appreciation rights and other stock awards "appreciation awards") covering more than 500,000 shares of common stock. Notwithstanding this limit, however, in connection with an employee's initial employment, he or she may be granted appreciation awards covering up to an additional 500,000 shares of common stock. Additional per-person limitations apply to performance stock awards, as described below in the section entitled "Terms of Performance Awards".

Full Value Stock Award Limitations. In addition, subject to adjustments upon changes in our capitalization or in connection with a merger or other similar event, the maximum number of shares of common stock that may be issued pursuant to the grant of "full value stock awards" (i.e., restricted stock, restricted stock units, performance stock and other stock awards, but not including stock options or stock appreciation rights) is 50% of the total number of shares of common stock issuable under the Amended 2011 Plan.

Minimum Vesting. Generally, no full value stock award that vests on the basis of the participant's continuous service with the Company shall vest at a rate that is any more rapid than ratably over a three-year period, and no full value stock award that vests based on the satisfaction of performance goals shall have a performance period of less than twelve months.

Limited Exception to Minimum Vesting Restrictions. Up to five percent (5%) of the total number of shares of common stock available for issuance under the Amended 2011 Plan may in the aggregate be issued as full value stock awards that are not subject to the minimum vesting requirements set forth in the Amended 2011 Plan.

Limit on Non-Employee Director Compensation. The aggregate value of all compensation granted or paid, as applicable, to any individual for service as a non-employee director with respect to any period commencing on the date of the Company's annual meeting of stockholders for a particular year and ending on the date of the Company's annual meeting of stockholders for the next subsequent year, including stock awards granted under the Amended 2011 Plan and cash fees paid to such non-employee director, will not exceed $1,250,000 in total value. In addition, the aggregate value of the initial option grant or other similar stock award(s) granted under the Plan or otherwise to any individual for service as a non-employee director upon or in connection with his or her initial election or appointment to the Board of Directors will not exceed $2,000,000 in total value. For purposes of these limitations, the value of stock awards is calculated based on the grant date fair value of such stock awards for financial reporting purposes. The Board of Directors has the authority to make exceptions to these limits in extraordinary circumstances, in its discretion, provided that any non-employee director who is granted or paid such additional compensation may not participate in the decision to grant or pay such additional compensation.

Section 162(m) Transition Relief for Performance-Based Compensation. Under Section 162(m) of the Code, compensation paid to any publicly held corporation's "covered employees" (as defined under Section 162(m) of the Code) that exceeds $1 million per taxable year for any covered employee is generally non-deductible. Certain provisions in the Amended 2011 Plan refer to the "performance-based compensation" exception to the $1 million deduction limit under Section 162(m) of the Code. Pursuant to the Tax Cuts and Jobs Act, this exception was repealed with respect to taxable years beginning after December 31, 2017. However, an award may still be eligible for this exception if, among other requirements, it is intended to qualify, and is eligible to qualify, as "performance-based compensation" under Section 162(m) of the Code pursuant to the transition relief provided by the Tax Cuts and Jobs Act for remuneration provided pursuant to a written binding contract which was in effect on November 2, 2017 and which was not modified in any material respect on or

after such date. For purposes of this Proposal Three, the term "Section 162(m) Transition Relief" refers to such transition relief. Accordingly, the provisions in the Amended 2011 Plan which refer to the "performance-based compensation" exception under Section 162(m) of the Code will only apply to any award that is intended to qualify, and is eligible to qualify, as "performance-based compensation" under Section 162(m) of the Code pursuant to the Section 162(m) Transition Relief and, therefore, such provisions are not applicable to any other awards granted under the Amended 2011 Plan. Because of certain ambiguities and uncertainties as to the application and interpretation of Section 162(m) of the Code, as well as other factors beyond the control of the Compensation Committee, no assurance can be given that any award granted under the Amended 2011 Plan will be eligible for such transition relief and be deductible by the Company in the future.

Terms and Conditions of Options and Stock Appreciation Rights

Options and stock appreciation rights may be granted under the Amended 2011 Plan pursuant to stock option agreements and stock appreciation right agreements. The following is a description of the permissible terms of options and stock appreciation rights under the Amended 2011 Plan. Individual grants may be more restrictive as to any or all of the permissible terms described below.

Exercise Price. The Administrator determines the exercise price of options and strike price of stock appreciation rights at the time the options or stock appreciation rights are granted as set forth in the applicable stock award agreement. The exercise price of a stock option and strike price of a stock appreciation right may not be less than 100% of the fair market value of the common stock on the date such award is granted. In the case of an incentive stock option granted to an optionee who owns more than 10% of all classes of stock of the Company or any parent or subsidiary of the Company, the exercise price may not be less than 110% of the fair market value of the common stock on the date such option is granted. The fair market value of the common stock is generally determined with reference to the closing sale price for the common stock on the date the option or stock appreciation right is granted.

Stock Appreciation Rights. Each stock appreciation right is denominated in shares of common stock equivalents. Upon exercise of a stock appreciation right, we will pay the participant an amount equal to the excess of (i) the aggregate fair market value of our common stock on the date of exercise over (ii) the strike price determined by the Administrator on the date of grant. The appreciation distribution upon exercise of a stock appreciation right will be paid in shares of our common stock, in cash, any combination of the two or any other form of consideration determined by the Administrator.

Repricing; Cancellation and Re-Grant of Stock Awards. Under the Amended 2011 Plan, the Administrator does not have the authority to reprice any outstanding stock awards by reducing the exercise price of the stock award or to cancel any outstanding stock awards in exchange for cash or other stock awards without obtaining the approval of our stockholders within 12 months prior to the repricing or cancellation and re-grant event.

Exercise; Form of Consideration. The Administrator determines when options and stock appreciation rights become exercisable as set forth in the applicable stock award agreement. The means of payment for shares issued upon exercise of an option is specified in each option agreement. The Amended 2011 Plan permits payment to be made to the extent permitted under applicable laws by cash, check, other shares of common stock of the Company (with some restrictions), net exercise, cashless exercise, any other form of consideration permitted by applicable law, or any combination thereof.

Term. The Administrator determines the term of options and stock appreciation rights granted under the Amended 2011 Plan as set forth in the applicable stock award agreement. The term of options and stock appreciation rights granted under the Amended 2011 Plan may be no more than 10 years from the date of grant. In the case of an incentive stock option granted to an optionee who owns more than 10% of all classes of stock of the Company or any parent or subsidiary of the Company, the term of the option may be no more than five years from the date of grant. No option or stock appreciation right may be exercised after the expiration of its term.

Termination of Continuous Service. Options and stock appreciation rights granted under the Amended 2011 Plan generally terminate three months after termination of the participant's service unless (i) such termination is due to the participant's disability, in which case the stock award may, but need not, provide that it may be exercised (to the extent the stock award was exercisable at the time of the termination of service) at any time within 12 months of such termination; (ii) the participant dies before the participant's service has terminated, or within the period specified in the stock award agreement after termination of such service, in which case the stock award may, but need not, provide that it may be exercised (to the extent the stock award was exercisable at the time of the participant's death) within 18 months of the participant's death by the person or persons to whom the rights to exercise such stock award pass by will or by the laws of descent and distribution; (iii) the stock award by its terms specifically provides otherwise, or (iv) the termination is for cause. Except as provided otherwise in a participant's stock award agreement, or otherwise set forth in an employment agreement, upon termination of a participant's service for cause, the stock award shall immediately terminate and may not thereafter be exercised. A participant may designate a beneficiary who may exercise the stock award following the participant's death. Individual grants by their terms may provide for exercise within a longer or shorter period of time following termination of service. In no event, however, may an option or stock appreciation right be exercised beyond the expiration of its maximum term. The option or stock appreciation right term generally is extended in the event that exercise of the stock award within the foregoing periods is prohibited. A participant's stock award agreement may provide that if the exercise of the stock award following the termination of the participant's service would be prohibited because the issuance of stock would violate the registration requirements under the Securities Act of 1933, as amended, then the stock award will terminate on the earlier of (i) the expiration of the term of the stock award or (ii) three months after the termination of the participant's service during which the exercise of the stock award would not be in violation of such registration requirements.

Other Provisions. The stock option agreement may contain other terms, provisions and conditions not inconsistent with the Amended 2011 Plan as may be determined by the Administrator.

Terms of Restricted Stock Awards and Restricted Stock Unit Awards

Restricted stock awards and restricted stock unit awards may be granted under the Amended 2011 Plan pursuant to restricted stock award and restricted stock unit award agreements. The following is a description of the permissible terms of restricted stock awards and restricted stock unit awards under the Amended 2011 Plan. Individual grants may be more restrictive as to any or all of the permissible terms described below.

Consideration. The Administrator may grant restricted stock awards and restricted stock unit awards in consideration for past services rendered to the Company or in exchange for any other form of legal consideration acceptable to the Administrator.

Vesting. Shares of stock issued under a restricted stock award agreement may, but need not, be subject to forfeiture to the Company in accordance with a vesting schedule as determined by the Administrator. Restricted stock unit awards vest and are issued at the rate specified in the restricted stock unit award agreement as determined by the Administrator. However, at the time of grant, the Administrator may impose additional restrictions or conditions that delay the delivery of stock to be issued in respect of the restricted stock unit award after vesting.

Termination of Service. Unless the Administrator determines otherwise, the restricted stock purchase agreement shall give the Company a repurchase option exercisable upon the voluntary or involuntary termination of the purchaser's employment or consulting relationship with the Company for any reason (including death and disability). The purchase price for any issued shares repurchased by the Company shall be the original price paid by the purchaser, if any. The repurchase option lapses at a rate determined by the Administrator. Except as otherwise provided in the applicable award agreement, restricted stock unit awards that have not vested will be automatically forfeited upon the participant's termination of service.

Dividend Equivalents. Dividend equivalent rights may be credited with respect to shares covered by a restricted stock unit award. However, we do not anticipate paying cash dividends on our common stock for the foreseeable future.

Terms of Performance Awards

The Amended 2011 Plan allows the Administrator to issue performance stock awards. Performance stock awards may be granted, vest or be exercised based upon the attainment during a certain period of time of certain performance goals and will be issued in shares of our common stock, or if determined by the Administrator, cash. All of our employees, consultants and directors are eligible to receive performance stock awards under the Amended 2011 Plan. The length of any performance period, the performance goals to be achieved during the performance period and the measure of whether and to what degree such performance goals have been attained shall be determined by the Administrator. The maximum amount to be granted to any individual in any calendar year attributable to such performance stock awards may not exceed 500,000 shares of our common stock. Notwithstanding this limit, however, in connection with an employee's initial employment, he or she may be granted performance stock awards covering up to an additional 500,000 shares of common stock.

In granting a performance stock award, the Administrator will set a period of time, or a performance period, over which the attainment of one or more goals, or performance goals, will be measured for the purpose of determining whether the stock award recipient has a vested right in or to such performance stock award. With respect to stock awards that are intended to qualify as performance based compensation for purposes of Section 162(m) of the Code, within the time period prescribed by Section 162(m) of the Code, the Administrator will establish the performance goals, based upon one or more pre-established criteria, or performance criteria, enumerated in the Amended 2011 Plan and described below. However, in order to qualify as "performance-based compensation" under Section 162(m) of the Code, among other requirements, such awards must be eligible to qualify for the Section 162(m) Transition Relief (as described in "Section 162(m) Transition Relief for Performance-Based Compensation" above). As soon as administratively practicable following the end of the performance period, the Administrator will certify (in writing) whether the performance goals have been satisfied.

Performance goals under the Amended 2011 Plan shall be established by the Administrator, based on one or more of the following performance criteria: (i) earnings (including earnings per share and net earnings, in either case before or after any or all of: interest, taxes, depreciation and amortization, legal settlements or other income (expense), or stock-based compensation, other non-cash expenses and changes in deferred revenue); (ii) total stockholder return; (iii) return on equity or average stockholder's equity; (iv) return on assets, investment, or capital employed; (v) stock price; (vi) margin (including gross margin); (vii) income (before or after taxes); (viii) operating income; (ix) operating income after taxes; (x) pre-tax profit; (xi) operating cash flow; (xii) sales or revenue targets; (xiii) increases in revenue or product revenue; (xiv) expenses and cost reduction goals; (xv) improvement in or attainment of working capital levels; (xvi) economic value added (or an equivalent metric); (xvii) market share; (xviii) cash flow; (xix) cash flow per share; (xx) cash burn; (xxi) share price performance; (xxii) debt reduction; (xxiii) implementation or completion of projects or processes (including, without limitation, discovery of a pre-clinical drug candidate, recommendation of a drug candidate to enter a clinical trial, clinical trial initiation, clinical trial enrollment and dates, clinical trial results, regulatory filing submissions, regulatory filing acceptances, regulatory or advisory committee interactions, regulatory approvals, presentation of studies and launch of commercial plans, compliance programs or education campaigns); (xxiv) customer satisfaction; (xxv) stockholders' equity; (xxvi) capital expenditures; (xxvii) debt levels; (xxviii) financings; (xxix) operating profit or net operating profit; (xxx) workforce diversity; (xxxi) growth of net income or operating income; (xxxii) billings; (xxxiii) employee hiring; (xxxiv) funds from operations; (xxxv) budget management; (xxxvi) strategic partnerships or transactions (including acquisitions, joint ventures or licensing transactions); (xxxvii) engagement of thought leaders and patient advocacy groups; (xxxviii) enhancement of intellectual property portfolio, filing of patent applications and granting of patents; (xxxix) litigation preparation and management; and (xl) to the extent that an award is not intended to comply with Section 162(m) of the Code, other measures of performance selected by the Administrator.

Unless otherwise determined by the Administrator, the attainment of performance goals for a performance period will be calculated: (i) to exclude restructuring and/or other nonrecurring charges; (ii) to exclude exchange rate effects, as applicable, for non-U.S. dollar denominated net sales and operating earnings; (iii) to exclude the effects of changes to generally accepted accounting standards required by the Financial Accounting Standards Board; (iv) to exclude the effects of any statutory adjustments to corporate tax rates; (v) to exclude the effects of items that are "unusual" in nature or occur "infrequently" as determined under generally accepted accounting principles; (vi) to exclude the dilutive effects of acquisitions or joint ventures; (vii) to assume that any business divested by the Company achieved performance objectives at targeted levels during the balance of a performance period following such divestiture; (viii) to exclude the effect of any change in the outstanding shares of common stock of the Company by reason of any stock dividend or split, stock repurchase, reorganization, recapitalization, merger, consolidation, spin-off, combination or exchange of shares or other similar corporate change, or any distributions to common stockholders other than regular cash dividends; (ix) to exclude the effects of stock based compensation and the award of bonuses under the Company's bonus plans; (x) to exclude costs incurred in connection with potential acquisitions or divestitures that are required to be expensed under generally accepted accounting principles; (xi) to exclude the goodwill and intangible asset impairment charges that are required to be recorded under generally accepted accounting principles; and (xii) to exclude the effects of the timing of acceptance for review and/or approval of submissions to the FDA or any other regulatory body. In addition, the Administrator retains the discretion to reduce or eliminate the compensation or economic benefit due upon attainment of performance goals.

Non-Discretionary Grant Program

The non-discretionary grant program under the Amended 2011 Plan provides for the grant of stock options to non-employee directors over their period of service on the Board of Directors. These stock options will be granted as follows:

Initial Option Grant. Each new non-employee director will, at the time of his or her initial election or appointment to the Board of Directors, receive an option to purchase a number of shares of the Company's common stock determined by the Board of Directors (the "initial option grant"). The initial option grant shall vest monthly with respect to 1/36th of the shares over the three-year period following the date of grant, subject to the director's continuous service through the applicable vesting dates, so that the initial option grant will be fully vested on the third anniversary of the date of grant.

Annual Option Grant. On each annual meeting, each continuing non-employee director will automatically be granted a stock option to purchase a number of shares of our common stock determined by the Board of Directors (the "annual option grant"). The annual option grant shall vest monthly with respect to 1/12th of the shares over the one year period following the date of grant, subject to the director's continuous service through the applicable vesting dates, so that the annual option grant will be fully vested on the first anniversary of the date of grant.

General Terms. The exercise price of each option granted under the non-discretionary grant program is 100% of the fair market value of the common stock subject to the option on the date of grant. The maximum term of options granted under the non-discretionary grant program is ten years. All other terms of each option granted under the non-discretionary grant program shall be consistent with the terms of the Amended 2011 Plan.

Corporate Transaction. Each option granted under the non-discretionary grant program shall automatically fully accelerate vesting upon a corporate transaction, subject to the non-employee director's continuous service through the date of the corporate transaction.

Terms of Other Stock Awards

The Administrator may grant other stock awards that are valued in whole or in part by reference to our common stock. Subject to the provisions of the Amended 2011 Plan, the Administrator has the authority to

determine the persons to whom, and the dates on which, such other stock awards will be granted, the number of shares of common stock (or cash equivalents) to be subject to each award, and other terms and conditions of such awards.

General Provisions

Tax Withholding. To the extent provided by the terms of any stock award agreement, a participant may satisfy any federal, state or local tax withholding obligation relating to such stock award by a cash payment, by authorizing the Company to withhold a portion of the stock otherwise issuable to the participant, by withholding from any amounts otherwise payable to the participant, by a combination of these means, or by such other method as set forth in the stock award agreement.

Transferability. Stock awards may not be sold, pledged, transferred, or disposed of in any manner other than by will or by the laws of descent and distribution, pursuant to a domestic relations order, or with respect to stock awards other than options or stock appreciation rights, with the Administrator's consent, and may be exercised, during the lifetime of the holder, only by the holder or such transferees as have been transferred a stock award with the Administrator's consent. If the Administrator makes a stock award transferable, such stock award shall contain such additional terms and conditions as the Administrator deems appropriate and such award will not otherwise be transferred for consideration.

Adjustments Upon Changes in Capitalization. In the event any change is made to the outstanding shares of the Company's common stock without the receipt of consideration (whether through a stock split or other specified change in our capital structure), the Administrator shall appropriately adjust the number and kind of shares of stock (or other securities or property) subject to the Amended 2011 Plan, the maximum number of shares that may be issued pursuant to the exercise of incentive stock options, the maximum numbers and/or class of securities for which any one person may be granted appreciation awards, full value stock awards and performance stock awards per calendar year, the number and kind of shares of stock (or other securities or property) subject to any stock award outstanding under the Amended 2011 Plan, and the exercise or purchase price of any such outstanding stock award.

Effect of Certain Corporate Events. In the event of a dissolution or liquidation of the Company, all outstanding stock awards under the Amended 2011 Plan shall terminate immediately prior to such dissolution or liquidation. The Amended 2011 Plan further provides that, in the event of a sale, or other disposition of all or substantially all of the Company's assets or specified types of mergers or consolidations (each, a "corporate transaction"), any surviving or acquiring corporation shall either assume stock awards outstanding under the Amended 2011 Plan or substitute similar stock awards for those outstanding under the Amended 2011 Plan. If any surviving corporation declines to assume stock awards outstanding under the Amended 2011 Plan or to substitute similar stock awards, then, with respect to participants whose service with the Company has not terminated prior to the time of such corporate transaction, the vesting and the time during which such stock awards may be exercised will be accelerated in full, and all outstanding stock awards will terminate if the participant does not exercise such stock awards at or prior to the corporate transaction. With respect to any stock awards that are held by other participants that terminated service with the Company prior to the corporate transaction, the vesting and exercisability provisions of such stock awards will not be accelerated and such stock awards will terminate if not exercised prior to the corporate transaction.

Amendment and Termination of the Amended 2011 Plan. The Board of Directors may amend, alter, suspend or terminate the Amended 2011 Plan, or any part thereof, at any time and for any reason. Unless sooner terminated, the Amended 2011 Plan will terminate on February 20, 2021. However, the Amended 2011 Plan requires stockholder approval for any amendment to the Amended 2011 Plan to the extent necessary to comply with applicable laws, rules and regulations. No action by the Board of Directors or stockholders may impair any award previously granted under the Amended 2011 Plan without the consent of the holder.

Federal Income Tax Consequences

Incentive Stock Options. An optionee who is granted an incentive stock option does not recognize taxable income at the time the option is granted or upon its exercise, although the exercise is an adjustment item for alternative minimum tax purposes and may subject the optionee to the alternative minimum tax. Upon a disposition of the shares more than two years after grant of the option and one year after exercise of the option, any gain or loss is treated as long-term capital gain or loss. If these holding periods are not satisfied, the optionee recognizes ordinary income at the time of disposition equal to the difference between the exercise price and the lesser of (i) the excess of the stock's fair market value on the date of exercise over the exercise price, or (ii) the participant's actual gain, if any, on the purchase and sale. Any gain or loss recognized on such a premature disposition of the shares in excess of the amount treated as ordinary income is treated as long-term or short-term capital gain or loss, depending on the holding period. A different rule for measuring ordinary income upon such a premature disposition may apply if the optionee is also an officer, director or 10% stockholder of the Company. Unless limited by Section 162(m) of the Code, the Company is entitled to a deduction in the same amount as the ordinary income recognized by the optionee.

Nonstatutory Stock Options. An optionee does not recognize any taxable income at the time he or she is granted a nonstatutory stock option. Upon exercise, the optionee recognizes taxable income generally measured by the excess of the then fair market value of the shares over the exercise price. Any taxable income recognized in connection with an option exercise by an employee of the Company is subject to tax withholding by the Company. Unless limited by Section 162(m) of the Code, the Company is entitled to a deduction in the same amount as the ordinary income recognized by the optionee. Upon a disposition of such shares by the optionee, any difference between the sale price and the optionee's exercise price, to the extent not recognized as taxable income as provided above, is treated as long-term or short-term capital gain or loss, depending on the holding period.

Stock Appreciation Rights. No taxable income is realized upon the receipt of a stock appreciation right. Upon exercise of the stock appreciation right, the fair market value of the shares (or cash in lieu of shares) received is recognized as ordinary income to the participant in the year of such exercise. Generally, with respect to employees, we are required to withhold from the payment made on exercise of the stock appreciation right or from regular wages or supplemental wage payments an amount based on the ordinary income recognized. Subject to the requirement of reasonableness, Section 162(m) of the Code and the satisfaction of a reporting obligation, we will be entitled to an income tax deduction equal to the amount of ordinary income recognized by the participant.

Restricted Stock Awards. For federal income tax purposes, if an individual is granted a restricted stock award, the recipient generally will recognize taxable ordinary income equal to the excess of the common stock's fair market value over the purchase price, if any. However, to the extent the common stock is subject to certain types of restrictions, such as a repurchase right in favor of the Company, the taxable event will be delayed until the vesting restrictions lapse unless the recipient makes a valid election under Section 83(b) of the Code. If the recipient makes a valid election under Section 83(b) of the Code with respect to restricted stock, the recipient generally will recognize ordinary income at the date of acquisition of the restricted stock in an amount equal to the difference, if any, between the fair market value of the shares at that date over the purchase price for the restricted stock. If, however, a valid Section 83(b) election is not made by the recipient, the recipient will generally recognize ordinary income when the restrictions on the shares of restricted stock lapse, in an amount equal to the difference between the fair market value of the shares at the date such restrictions lapse over the purchase price for the restricted stock. With respect to employees, the Company is generally required to withhold from regular wages or supplemental wage payments an amount based on the ordinary income recognized. Generally, the Company will be entitled (subject to the requirement of reasonableness, the provisions of Section 162(m) of the Code and the satisfaction of a tax reporting obligation) to a business expense deduction equal to the taxable ordinary income realized by the recipient. Upon disposition of the common stock, the recipient will recognize a capital gain or loss equal to the difference between the selling price and the sum of the

amount paid for such common stock, if any, plus any amount recognized as ordinary income upon acquisition (or the lapse of restrictions) of the common stock. Such gain or loss will be long-term or short-term depending on how long the common stock was held. Slightly different rules may apply to recipients who are subject to Section 16(b) of the Exchange Act.

Restricted Stock Unit Awards. No taxable income is recognized upon receipt of a restricted stock unit award. The participant will recognize ordinary income in the year in which the shares subject to that unit are actually issued to the participant in an amount equal to the fair market value of the shares on the date of issuance. The participant and the Company will be required to satisfy certain tax withholding requirements applicable to such income. Subject to the requirement of reasonableness, Section 162(m) of the Code and the satisfaction of a tax reporting obligation, we will be entitled to an income tax deduction equal to the amount of ordinary income recognized by the participant at the time the shares are issued. In general, the deduction will be allowed for the taxable year in which such ordinary income is recognized by the participant.

Potential Limitation on Company Deductions. Under Section 162(m) of the Code, compensation paid to any publicly held corporation's "covered employees" (as defined under Section 162(m) of the Code) that exceeds $1 million per taxable year for any covered employee is generally non-deductible. Prior to the enactment of the Tax Cuts and Jobs Act, Section 162(m) of the Code provided a performance-based compensation exception, pursuant to which the deduction limit under Section 162(m) of the Code did not apply to any compensation that qualified as "performance-based compensation" under Section 162(m) of the Code. Pursuant to the Tax Cuts and Jobs Act, the performance-based compensation exception under Section 162(m) of the Code was repealed with respect to taxable years beginning after December 31, 2017, except that certain transition relief is provided for compensation paid pursuant to a written binding contract which was in effect on November 2, 2017 and which is not modified in any material respect on or after such date. Compensation paid to each of the Company's "covered employees" in excess of $1 million per taxable year generally will not be deductible unless it qualifies for the performance-based compensation exception under Section 162(m) of the Code pursuant to the transition relief described above. Because of certain ambiguities and uncertainties as to the application and interpretation of Section 162(m) of the Code, as well as other factors beyond the control of the Compensation Committee, no assurance can be given that any compensation paid by the Company (including any award granted under the Amended 2011 Plan) will be eligible for such transition relief and be deductible by the Company in the future.

The foregoing is only a summary of the effect of federal income taxation upon holders of stock awards and the Company with respect to the grant and exercise of stock awards under the Amended 2011 Plan. It does not purport to be complete, and does not discuss the tax consequences of the holder's death or the provisions of the income tax laws of any municipality, state or foreign country in which the holder may reside.

New Plan Benefits

Amended 2011 Plan

Name	Dollar value	Number of shares
Kevin C. Gorman, Ph.D. Chief Executive Officer and Director	(1)	(1)
Matthew C. Abernethy Chief Financial Officer	(1)	(1)
Eric Benevich Chief Commercial Officer	(1)	(1)
Kyle W. Gano, Ph.D. Chief Business Development Officer	(1)	(1)
Eiry W. Roberts, M.D. Chief Medical Officer	(1)	(1)
All current executive officers as a group (nine persons)	(1)	(1)
All current non-employee directors as a group (six persons)	(2)	(2)
All employees, including all current officers who are not executive officers, as a group (approximately 690 persons)	(1)	(1)

(1) Awards granted under the Amended 2011 Plan to our executive officers and other employees are discretionary and are not subject to set benefits or amounts under the terms of the Amended 2011 Plan, and our Board of Directors and our Compensation Committee have not granted any awards under the Amended 2011 Plan subject to stockholder approval of this Proposal Three. Accordingly, the benefits or amounts that will be received by or allocated to our executive officers and other employees under the Amended 2011 Plan are not determinable.

(2) Pursuant to the terms of the Amended 2011 Plan, non-employee directors are entitled to receive options as described in "Non-Discretionary Grant Program" above. Under our compensation arrangements for non-employee directors and the Amended 2011 Plan, in 2018 each of our six current non-employee directors was granted a nonstatutory stock option to purchase 12,500 (15,000 in the case of our Chairman) shares at the 2018 Annual Meeting and such options were granted under the Amended 2011 Plan. For additional information regarding our current compensation arrangements for non-employee directors, please see "Director Compensation" below. The actual value realized upon exercise of an option will depend on the excess, if any, of the stock price over the exercise prices on the date of exercise. Only non-employee directors of the Company are eligible to receive non-discretionary grants under the Amended 2011 Plan. All other grants under the Amended 2011 Plan are within the discretion of the Administrator.

Plan Benefits

The following table sets forth, for each of the individuals and groups indicated, the total number of shares of our common stock subject to options and stock awards that have been granted (even if not currently outstanding) under the 2011 Plan through the Record Date.

2011 Plan

Name and position	Number of shares Granted
Kevin C. Gorman, Ph.D.	
Chief Executive Officer and Director	1,882,272
Matthew C. Abernethy	
Chief Financial Officer	123,264
Eric Benevich	
Chief Commercial Officer	309,714
Kyle W. Gano, Ph.D.	
Chief Business Development Officer	728,212
Eiry W. Roberts, M.D.	
Chief Medical Officer	109,662
All current executive officers as a group (nine persons)	5,396,601
All current directors who are not executive officers as a group (six persons)	643,500
Each nominee for election as a director: (two persons)	
Richard F. Pops.	112,500
Stephen A. Sherwin, M.D.	112,500
All employees, including all current officers who are not executive officers, as a group (approximately 690 persons)	8,448,958

EQUITY COMPENSATION PLANS

The following table sets forth information regarding all of the Company's equity compensation plans as of March 1, 2019:

Plan Category	Number of Securities to be Issued upon Exercise of Outstanding Options, Warrants and Rights (a)	Weighted Average Exercise Price of Outstanding Options, Warrants and Rights (b)	Number of Securities Remaining Available for Future Issuance Under Equity Compensation Plans (Excluding Securities Reflected in Column a) (c)
Equity compensation plans approved by security holders (1)	8,406,021	$48.17	5,002,799
Equity compensation plans not approved by security holders (2)	240,162	$59.37	55,182
Total	8,646,183	$48.45	5,057,981

(1) The number of securities remaining available for future issuance under equity compensation plans as of March 1, 2019 are from the 2011 Plan. The shares available for issuance under the 2011 Plan may be issued in the form of option awards, restricted stock awards, restricted stock unit awards or stock bonus awards subject to limitations set forth in the 2011 Plan.

(2) Consists of shares of common stock issuable pursuant to employment commencement nonstatutory stock option awards and restricted stock unit awards.

OUR BOARD OF DIRECTORS RECOMMENDS A VOTE "FOR" PROPOSAL THREE

PROPOSAL FOUR: RATIFICATION OF APPOINTMENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

General

The Audit Committee has selected Ernst & Young LLP to audit the financial statements of the Company for the current fiscal year ending December 31, 2019. Ernst & Young LLP has audited the Company's financial statements since 1992. Representatives of Ernst & Young LLP are expected to be present at the Annual Meeting, will have the opportunity to make a statement if they so desire, and are expected to be available to respond to appropriate questions.

Stockholders are not required to ratify the selection of Ernst & Young LLP as the Company's independent registered public accounting firm. However, the Audit Committee is submitting the selection of Ernst & Young LLP to the stockholders for ratification as a matter of good corporate practice. If the stockholders fail to ratify the selection, the Audit Committee will reconsider whether or not to retain that firm. Even if the selection is ratified, the Audit Committee in their discretion may direct the selection of a different independent registered public accounting firm at any time during the year if they determine that such a change would be in the best interests of the Company and its stockholders.

Vote Required

The affirmative vote of the holders of a majority of the shares represented in person or by proxy at the Annual Meeting and entitled to vote on the item will be required to approve and ratify the Audit Committee's selection of Ernst & Young LLP. **The Board of Directors unanimously recommends voting "FOR" approval and ratification of such selection.** In the event of a negative vote on such ratification, the Audit Committee will reconsider its selection.

EXECUTIVE OFFICERS

As of the Record Date, our executive officers were as follows:

Name	Age	Position
Kevin C. Gorman, Ph.D.	61	Chief Executive Officer and Director
Matthew C. Abernethy	39	Chief Financial Officer
Eric Benevich	53	Chief Commercial Officer
Haig P. Bozigian, Ph.D.	61	Chief Development Officer
Kyle W. Gano, Ph.D.	46	Chief Business Development Officer
Dimitri E. Grigoriadis, Ph.D.	61	Chief Research Officer
Darin M. Lippoldt	53	Chief Legal Officer and Corporate Secretary
Malcolm C. Lloyd-Smith	63	Chief Regulatory Officer
Eiry W. Roberts, M.D.	55	Chief Medical Officer

See above for biographical information concerning Kevin C. Gorman, Ph.D.

Matthew C. Abernethy was appointed Chief Financial Officer in November 2017 and is responsible for leading corporate finance activities and commercial supply chain operations, as well as information technology and investor relations functions at Neurocrine. Mr. Abernethy has nearly 15 years of experience in the financial sector and investor relations with expertise in the healthcare industry. He joined Neurocrine from Zimmer Biomet, where he held various positions from February 2009 to November 2017, including most recently, Vice President, Investor Relations and Treasurer and Vice President of Finance for the Americas and Global Product Engines. He began his career with KPMG LLP and is a certified public accountant. Mr. Abernethy earned his B.S. in Accounting and Business Administration from Grace College and an MBA from the University of Chicago.

Eric Benevich was appointed Chief Commercial Officer in May 2015 and is responsible for all aspects of commercial development, marketing and sales of the Neurocrine product portfolio. Previously, Mr. Benevich was at Avanir Pharmaceuticals, Inc., from 2005 to 2015, serving most recently as Vice President of Marketing where he was responsible for NUEDEXTA® and commercialization of their CNS pipeline. Mr. Benevich has over 20 years of experience in the pharmaceutical industry and previously served in various positions of increasing responsibility at Peninsula Pharmaceuticals Inc., Amgen and AstraZeneca in the sales and marketing of drugs such as Enbrel®, Epogen® and Prilosec®. Mr. Benevich has a BBA in International Business from Washington State University.

Haig P. Bozigian, Ph.D. was appointed Chief Development Officer in 2013 after having served as Senior Vice President of Pharmaceutical and Preclinical Development. Dr. Bozigian is responsible for all preclinical development, chemistry manufacturing and controls (CMC) and clinical pharmacology, and has led such functions since 2006. Dr. Bozigian joined Neurocrine in 1997. With extensive expertise in CNS related new product development, Dr. Bozigian has participated in research and development for approximately 30 years. Prior to joining Neurocrine, Dr. Bozigian served as Director of Pharmaceutical Development at Procyte Corporation, Associate Director of Pharmacokinetics and Drug Metabolism at Sphinx Pharmaceuticals Corporation and as a Clinical Pharmacokineticist at GlaxoSmithKline. Dr. Bozigian earned his B.S. in Microbiology from the University of Massachusetts, his M.S. in Pharmacodynamics and Toxicology from the University of Nebraska Medical Center, and earned his Ph.D. in Pharmaceutical Sciences from the University of Arizona.

Kyle W. Gano, Ph.D. was appointed Chief Business Development Officer in 2011 and is responsible for all business and corporate development activities, including the management of ongoing collaborations with AbbVie, Mitsubishi Tanabe Pharma, BIAL, Jnana Therapeutics and Voyager Therapeutics. From 2001 to 2011, Dr. Gano held several positions of increasing responsibility at Neurocrine spanning marketing analytics to

business development. Dr. Gano received his B.S. in Chemistry from the University of Oregon, B.S. in Biochemistry from the University of Washington, and his Ph.D. in Organic Chemistry and M.B.A in Finance from the University of California, Los Angeles.

Dimitri E. Grigoriadis, Ph.D. was appointed Chief Research Officer in 2013. Dr. Grigoriadis oversees all research functions, including drug discovery, biology and chemistry, and has led such functions since 2006. Dr. Grigoriadis joined Neurocrine in 1993, established the pharmacology and drug screening groups and was most recently a Neurocrine Fellow and Vice President of Discovery Biology. Prior to joining Neurocrine, he was a Senior Scientist in the Neuroscience group at the DuPont Pharmaceutical Company from 1990 to 1993. Dr. Grigoriadis received his B.Sc. from the University of Guelph in Ontario, Canada, and his M.Sc. and Ph.D. in Pharmacology from the University of Toronto, Ontario, Canada. He conducted his postdoctoral research at the National Institute on Drug Abuse from 1987 to 1990.

Darin M. Lippoldt was appointed Chief Legal Officer and Corporate Secretary in October 2014 and has oversight of all corporate legal matters, intellectual property, compliance, and government relations. Prior to joining Neurocrine, Mr. Lippoldt served as Executive Vice President, General Counsel, Chief Compliance Officer and Corporate Secretary of Volcano Corporation, a company he joined in 2010. Prior to Volcano, Mr. Lippoldt served as Associate General Counsel at Amylin Pharmaceuticals, Inc. since 2003. He previously practiced corporate and securities law with the law firms of Fulbright & Jaworski LLP and Matthews and Branscomb, P.C. Mr. Lippoldt received a B.B.A. in Finance, an M.A. in International Relations and a J.D. from St. Mary's University.

Malcolm C. Lloyd-Smith was appointed Chief Regulatory Officer in September 2014 and is responsible for regulatory affairs and quality assurance. Prior to joining Neurocrine, Mr. Lloyd-Smith served at Cadence Pharmaceuticals, Inc. as Senior Vice President, Regulatory Affairs, Quality and Clinical from August 2012 to September 2014, and previously as Senior Vice President, Regulatory Affairs and Quality Assurance from August 2008. Mr. Lloyd-Smith served as Vice President and Head of Global Regulatory Affairs for Elan Pharmaceuticals, Inc. from September 2003 to August 2008, after having served in the United Kingdom as its Vice President, International Regulatory Affairs from March 2002 to August 2003. Previously, Mr. Lloyd-Smith served in various positions of increasing responsibility with DuPont Pharmaceuticals in Germany, Switzerland, USA and UK. Mr. Lloyd-Smith holds a B.Sc. in Pharmacology from the University of Leeds and a M.Sc. in Pharmacological Biochemistry from Hatfield Polytechnic.

Eiry W. Roberts, M.D., was appointed Chief Medical Officer in January 2018 and is responsible for all clinical development and medical affairs activities at Neurocrine. Dr. Roberts has over 25 years of research and development experience in the pharmaceutical industry across all phases of drug development from research through commercialization in multiple therapeutic areas, including neuroscience, inflammation, oncology and metabolic diseases. She joined Neurocrine from Eli Lilly and Company where she had worked since May 1991. During her tenure at Eli Lily and Company Dr. Roberts held various positions of increasing responsibility, including Vice President, Clinical Pharmacology/Managing Director of Chorus a position she held from October 2014 until December 2017 and Vice President of R&D, BioMedicines Business Unit. At Eli Lilly Dr. Roberts was the Chair of the Medical Review Committee, where she was responsible for review and approval of all the integrated clinical plans for molecules in the Lilly portfolio. Dr. Roberts was accountable for early clinical development programs across all therapeutic areas within Lilly, as well as registration for new chemical entities and biproducts in Phase III development. During her time at Lilly, Dr. Roberts established a new therapeutic area, which resulted in the development of five potential novel medicines from Phase I through to approval, with two of them successfully receiving regulatory approval. Dr. Roberts also has extensive leadership and business development experience, including the management of strategic alliances, business partnerships and venture capital collaborations. Dr. Roberts is a physician who trained in pharmacology and medicine in the UK, qualifying from the University of London in 1987. Her post-graduate clinical training was in clinical pharmacology and cardiology at St. Bartholomew's Hospital and the Royal London Hospital.

COMPENSATION DISCUSSION AND ANALYSIS

This Compensation Discussion and Analysis describes Neurocrine's executive officer compensation program for 2018 and certain elements of our 2019 program. It provides qualitative information on the factors relevant to these decisions and the manner in which compensation is awarded to the following individuals who are our Named Executive Officers ("NEOs") for 2018:

- Chief Executive Officer, Kevin C. Gorman, Ph.D.;
- Chief Financial Officer, Matthew C. Abernethy;
- Chief Commercial Officer, Eric Benevich;
- Chief Business Development Officer, Kyle W. Gano, Ph.D.; and
- Chief Medical Officer, Eiry W. Roberts, M.D.(1)

(1) Dr. Roberts joined the Company as our Chief Medical Officer on January 8, 2018.

Executive Summary

Business Overview

We are a company focused on discovering, developing, and commercializing innovative and life-changing pharmaceuticals, in diseases with high unmet medical needs, through our novel research and development (R&D) platform, focused on neurological and endocrine related diseases and disorders. Utilizing a portfolio approach to drug discovery, we have multiple small molecule drug candidates at various stages of pharmaceutical development. We develop proprietary pharmaceuticals for our pipeline, as well as collaborate with other pharmaceutical companies on our products and product candidates.

On April 11, 2017, the United States Food and Drug Administration (FDA) approved INGREZZA® (valbenazine) capsules for the treatment of adults with tardive dyskinesia (TD). We market INGREZZA for TD in the United States (U.S.) through our specialty sales force focused primarily on physicians who treat TD patients, including psychiatrists and neurologists. The commercial launch of INGREZZA occurred on May 1, 2017.

On July 24, 2018, we were notified by AbbVie Inc. (AbbVie) that FDA approval was granted for ORILISSA® (elagolix) for the management of moderate to severe endometriosis pain in women. Discovered and developed through Phase II clinical trials by us, ORILISSA, the first FDA-approved oral medication for the management of endometriosis with associated moderate to severe pain in over a decade, began to be marketed by AbbVie in August 2018 as part of a collaboration to develop and commercialize elagolix for women's health.

Our clinical development programs include opicapone as an adjunctive therapy to levodopa/DOPA decarboxylase inhibitors in adult Parkinson's disease patients, elagolix for uterine fibroids partnered with AbbVie, NBI-74788 for the treatment of congenital adrenal hyperplasia, a vesicular monoamine transporter 2 inhibitor and a first-in-class central nervous system compound each with potential use in the treatment of neurologic and psychiatric disorders, and two gene therapy programs in which we are partnered with Voyager Therapeutics, Inc. (Voyager) for the treatment of Parkinson's disease and Friedreich's ataxia.

We currently have several collaborations with other companies. In June 2010, we announced an exclusive worldwide collaboration with AbbVie to develop and commercialize elagolix and all next-generation gonadotropin-releasing hormone antagonists. In March 2015, we entered into a collaboration and license agreement with Mitsubishi Tanabe Pharma Corporation for the development and commercialization of INGREZZA for movement disorders in Japan and other select Asian markets. In February 2017, we in-licensed technology from BIAL—Portela & Ca, S.A. for the development and commercialization of opicapone for the

treatment of human diseases and conditions, including Parkinson's disease, in the U.S. and Canada. In October 2018, we entered into a research collaboration with Jnana Therapeutics, Inc. aimed at discovering novel small molecule therapeutics for multiple targets for CNS disorders. In January 2019, we entered into a collaboration and license agreement with a Voyager, clinical-stage gene therapy company. The collaboration is focused on the development and commercialization of four programs using Voyager's proprietary gene therapy platforms. The four programs consist of Voyager's VY-AADC program for Parkinson's disease and VY-FXN01 program for Friedreich's ataxia, as well as rights to two programs to be determined by the parties in the future.

2018 Corporate Performance Highlights

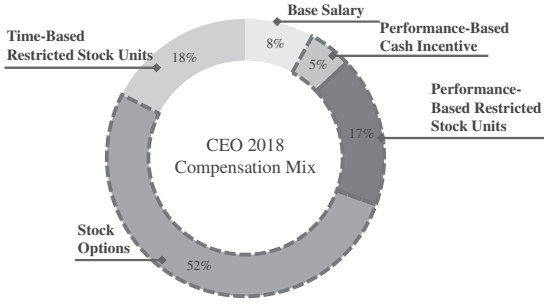
2018 was a year of significant achievement for the Company as we:

- continued the successful launch of INGREZZA for the treatment of TD with product revenues of over $400 million in its first full year of commercialization;
- prepared for the submission to the FDA of a New Drug Application for opicapone;
- entered into a collaboration with Jnana Therapeutics;
- expanded early stage pipeline by filing two new Investigational New Drug Applications (INDs) with the FDA; and
- recorded earnings of $18.1 million.

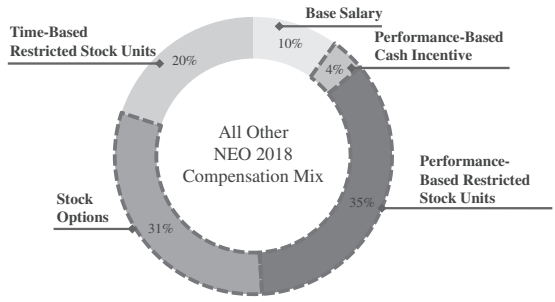
Pay for Performance/At Risk Pay

Our executive officer compensation program is designed to reward achievement of the specific strategic goals that we believe will advance our business strategy and create long-term value for our stockholders. Consistent with our goal of attracting, motivating and retaining a high-caliber executive team, our executive officer compensation program is designed to pay for performance. We utilize compensation elements that meaningfully align our NEOs' interests with those of our stockholders to create long-term value. As such, a significant portion of our CEO's and other executive officers' compensation is "at-risk," performance-based compensation, in the form of long-term equity awards, and annual cash incentives that are only earned if we achieve multiple corporate metrics. The graphics below illustrate the elements of our CEO's compensation mix for 2018 and the aggregate compensation mix for 2018 for the other named executive officers as a group.

CEO 2018 Compensation Mix
75% At-Risk



All Other NEO 2018 Compensation Mix
70% At-Risk



= Performance-Based Compensation

Our Compensation Practices

Below are key elements of our compensation program, as well as problematic pay practices that we avoid:

What We Do	What We Don't Do
✓ Heavily weight our NEO compensation toward "at risk," performance-based compensation	× Allow for the repricing of stock options without stockholder approval
✓ Use multi-year vesting for all executive officer equity awards	× Pay dividends or dividend equivalents on unearned shares
✓ Have an incentive compensation recoupment or clawback policy	× Permit hedging or other forms of speculative transactions by employees or directors, or permit borrowing against our stock by employees or directors
✓ Structure our executive officer compensation program to minimize inappropriate risk-taking	× Provide single-trigger change in control benefits
✓ Cap annual cash incentives at a maximum payout amount	
✓ Select peer companies that we compete with for executive officer talent, have a similar business and are of similar size as us, and review their pay practices	
✓ Solicit advice from the Committee's independent compensation consultant	
✓ Have meaningful stock ownership guidelines for NEOs	
✓ Have three independent non-employee directors serve on the Committee	

Role of the Compensation Committee

As discussed in greater detail below, the Compensation Committee of our Board of Directors (the "Committee") takes into consideration a peer group, survey data and advice from an independent compensation consultant when setting the compensation philosophy and compensation structure for the Company. The Committee's complete roles and responsibilities are set forth in a written charter which was adopted by the Board of Directors and is available at *www.neurocrine.com*. Some of the significant roles and responsibilities of the Committee include:

- reviewing and, if necessary, revising the compensation philosophy of the Company;
- reviewing and approving corporate goals and objectives relating to the compensation of the Company's employees, including executive officers, and evaluating the performance of the Company, and its executive officers, in light of these corporate goals and objectives;
- reviewing and approving compensation for all executive officers, including perquisite benefits, if any;
- reviewing and approving all employment agreements for executive officers;
- reviewing and approving all promotions to executive officer positions and the hiring of all new executive officers;
- reviewing director compensation by taking into consideration peer group data and advice from an independent compensation consultant, and making recommendations to the Board of Directors;
- reviewing and approving guidelines for salaries, merit salary increases, cash incentive payments, stock-based grants and performance-based stock grants for all non-executive officer employees of the Company;

- reviewing and approving equity grants to non-employees of the Company, if any;
- making recommendations to the Board of Directors with regard to amendments or modifications to equity incentive plans;
- administering the Company's equity incentive plans;
- reviewing and taking into consideration stockholder feedback regarding compensation matters, including our annual "say-on-pay" vote;
- retaining independent compensation consultant and advisors when appropriate to advise the Committee on compensation policies and plans;
- complying with requirements established by the SEC, assessing the risks arising from the Company's compensation policies and taking any actions required as a result thereof;
- reviewing executive officer and director compliance with our Stock Ownership Guidelines; and
- preparing and approving the Compensation Discussion and Analysis to be included as part of the Company's annual proxy statement.

Committee Actions in Connection with Say-on-Pay Vote

Our Committee is committed to ensuring that our executive officer compensation program is effective and aligned with our stockholders' interests and concerns. Accordingly, a critical component of our Committee's process has been to continue to:

- review emerging compensation "best practices" in the U.S., with a focus toward companies of similar size; and
- solicit advice from our Committee's independent compensation consultant.

In 2018, we sought an advisory vote from our stockholders regarding our executive officer compensation program and received a 98.2% favorable vote supporting the program. Each year, the Committee considers the results of the advisory vote as it completes its annual review of each pay element and the compensation provided to our NEOs and other executive officers. Given the significant level of stockholder support, the Committee concluded that our executive officer compensation program continues to align executive officer pay with stockholder interests and provides competitive pay that encourages retention and effectively incentivizes performance of talented NEOs and executive officers. Accordingly, the Committee determined not to make any significant changes to our programs as a result of the vote. The Committee will continue to consider the outcome of our say-on-pay votes and our stockholders' views when making future compensation decisions for the NEOs and executive officers.

Compensation Philosophy and Overall Compensation Determination Process

We believe that in order to create value for our stockholders, it is critical to attract, motivate and retain key executive officer talent by providing competitive compensation packages. Accordingly, we design our executive officer compensation programs to attract, motivate and retain executive officers with the skills and expertise to execute our business plans, and reward those executive officers fairly over time for actions consistent with creating long-term stockholder value. The market for talented individuals in the life sciences industry is highly competitive and becoming more challenging for employers.

Our compensation philosophy for executive officers provides that cash compensation should be structured such that at least one-third of each executive officer's total cash compensation, consisting of base salary and target cash incentives, is at risk and dependent upon the Company's achievement of specific corporate metrics that drive shareholder value. Non-cash long-term equity compensation for executive officers is generally a

combination of performance-based and time-based vesting, and is designed to motivate executive officers to increase long-term stockholder value as well as reward and retain key employees. The Committee believes that this approach provides an appropriate blend of short-term and long-term incentives to maximize stockholder value.

The implementation of the compensation philosophy is carried out under the supervision of the Committee. The Committee uses the services of an independent compensation consultant who is retained by, and reports directly to, the Committee. Management, under guidelines and procedures approved by the Committee, determines the compensation of our non-executive officer employees.

In the early part of each year, the Committee, without the presence of our Chief Executive Officer, deliberates and makes decisions regarding the base salary, target cash incentives and long-term equity award components of compensation to be awarded to our Chief Executive Officer for the new fiscal year, as well as performance-based compensation payouts for the prior fiscal year. In setting compensation for our other NEOs, the Committee solicits the input of our Chief Executive Officer, who recommends to the Committee the base salary, target cash incentives and long-term equity award components of compensation to be awarded to our NEOs for the new fiscal year, as well as performance-based compensation payouts for the prior fiscal year. The Committee remains solely responsible for making the final decisions on compensation for all of our NEOs. Our NEOs are not present during discussions of their compensation packages nor do they participate in approving any portion of their own or other NEO compensation packages.

The Chief Executive Officer annually reviews the performance of each NEO (other than himself) and discusses these performance reviews with the Committee. These recommendations reflect his consideration of the overall performance of the Company, market data prepared by the Committee's independent compensation consultant, the performance of each NEO, internal pay equity among individuals (including qualifications and contributions to meeting our corporate objectives), criticality and scope of job function and our Chief Executive Officer's extensive industry experience. The Committee considers a variety of factors, as described below, which may vary from year to year, to set the compensation of our NEOs at levels that the Committee considers to be competitive and appropriate for each NEO, using the Committee's professional experience and judgment:

- ✓ Market data from the independent compensation consultant
- ✓ Chief Executive Officer's recommendations (other than for himself)
- ✓ Independent compensation consultant recommendations
- ✓ Internal pay equity among individuals and positions
- ✓ Criticality and scope of job function
- ✓ Retention risk
- ✓ Company performance
- ✓ Individual performance
- ✓ Total targeted and historical compensation
- ✓ Any other factors the Committee determines appropriate

In the first quarter of the year, the performance of each executive officer for the prior year and market data are reviewed by the Committee, and base salary adjustments, cash incentive payouts, following year targets and annual equity grants are discussed and approved. Also, during the first quarter of the year, Company-wide performance goals for the then current year are finalized by the Committee and the Board of Directors. At mid-year meetings, the Committee reviews the Company's compensation philosophy, policies and procedures. Committee meetings in the fourth quarter of the year generally focus on Company goal achievement, selection of the peer group for the following year and the structure of executive officer performance reviews.

Compensation Consultants

The Committee uses the services of an independent compensation consultant who is retained by, and reports directly to, the Committee to provide the Committee with an additional external perspective with respect to its evaluation of relevant market and industry practices. The Committee continued to select Radford, an AON Hewitt Company, as a third-party compensation consultant to assist the Committee in establishing 2018 and 2019 overall compensation levels. Radford conducted analyses and provided advice on, among other things, the appropriate peer group, executive officer compensation for our executive officers and compensation trends in the life sciences industry.

In weighing its recommendations for executive officer compensation for the fiscal year 2018, the Committee directed Radford to advise the Committee on both best practices and peer practices when designing and modifying our compensation program for executive officers in order to achieve our objectives. As part of its duties, Radford provided the Committee with the following services with respect to 2018 compensation decisions:

- carried out a comprehensive review of our peer group for use in making 2018 executive officer compensation decisions;
- provided compensation data for the peer group and relevant executive officer pay survey data and an analysis of the compensation of the Company's executive officers as compared to this market data;
- provided a competitive assessment of, and comparison to, incentive design and executive officer pay program structure based on peer group data;
- conducted a comprehensive pay for performance assessment;
- provided recommendations regarding the annual cash incentive and long-term equity incentive program design for 2018;
- assisted the Committee with the design of 2018 pay programs consistent with the Company's business strategy and pay philosophy;
- provided background information and data for 2018 adjustments to the Company's executive officer compensation program consistent with good governance practices and the Company's objectives; and
- prepared an analysis of the Board's 2018 compensation program.

The Committee annually assesses whether the work of Radford as a compensation consultant has raised any conflict of interest, taking into consideration the following factors: (i) the provision of other services, if any, to the Company by Radford; (ii) the amount of fees the Company paid to Radford as a percentage of the firm's total revenue; (iii) Radford's policies and procedures that are designed to prevent conflicts of interest; (iv) any business or personal relationship of Radford or the individual compensation advisors employed by the firm with an executive officer of the Company; (v) any business or personal relationship of the individual compensation advisors with any member of the Committee and (vi) any stock of the Company owned by Radford or the individual compensation advisors employed by the firm. The Committee has determined, based on its analysis of the above factors, that the work of Radford and the individual compensation advisors employed by Radford as compensation consultants to the Company have not created any conflict of interest.

Competitive Assessment of Compensation—Peer Group and Market Data

2018 Peer Group. When developing a proposed list of our peer group companies to be used in connection with making compensation decisions for 2018, Radford reexamined our compensation philosophy and peer group and recommended changes to our 2017 peer group company list to reflect our growth, market capitalization and the stage of our commercial development. Radford suggested biopharmaceutical companies that were primarily recently commercial companies with revenue generally less than $300 million, had market values of

approximately one half (0.5x) to two-and-a-half (2.5x) our market capitalization at the time (resulting in a range of between $2 billion to $12 billion in market capitalization) and had headcounts approximately one half (0.5x) to two-and-a-half (2.5x) our headcount at the time (resulting in a range generally between 200 to 1,000 employees approximately). As a result of the growth in revenue, market capitalization and headcount that we experienced from when our 2017 peer group was determined, there was a change to the criteria used to determine our 2018 peer group, as compared to the criteria used to determine our 2017 peer group.

Based on these criteria, for 2018 Radford recommended, and our Committee approved the following peer group:

ACADIA Pharmaceuticals, Inc.	Agios Pharmaceuticals, Inc.	Alnylam Pharmaceuticals, Inc.
bluebird bio, Inc.	Clovis Oncology, Inc.	Exelixis, Inc.
Halozyme Therapeutics, Inc.	Ionis Pharmaceuticals, Inc.	Ironwood Pharmaceuticals, Inc.
Juno Therapeutics, Inc.	Nektar Therapeutics	Portola Pharmaceuticals, Inc.
Puma Biotechnology, Inc.	Sarepta Therapeutics, Inc.	Seattle Genetics, Inc.
TESARO, Inc.	The Medicines Company	Ultragenyx Pharmaceutical Inc.

The 2018 peer group reflects the following changes from our 2017 peer group, all of which were recommended by Radford and approved by our Committee: (i) the removal of the following company Intercept Pharmaceuticals, Inc., which no longer met the criteria above, (ii) the removal of the following companies due to such companies being acquired since the 2017 peer group had been approved: ARIAD Pharmaceuticals, Inc. and Kite Pharma, Inc., and (iii) the addition of the following companies, which met the criteria above: Clovis Oncology, Inc., Halozyme Therapeutics, Inc. and Portola Pharmaceuticals, Inc.

In determining executive officer compensation for 2018, the Committee reviewed data from this group of peer companies. At the time of approval of our 2018 peer group, our Company was approximately in the 66th percentile of the peer group for market capitalization, in the 8th percentile of the peer group for revenue.

In early 2018, Radford completed an assessment of executive officer compensation based on the 2018 peer group to inform the Committee's determinations of executive officer compensation for 2018. The data for this assessment was compiled from multiple sources, including: (i) the 2018 peer group companies' publicly disclosed information, or public peer data and (ii) data from public biotechnology and pharmaceutical companies in the Radford Global Life Sciences Survey that had market values between $2 billion and $12 billion or the general survey data. The components of this data were based on the availability of sufficient comparative data for an executive officer's position. The general survey data and the public peer data, collectively referred to in this proxy statement together as market data, were reviewed by the Committee, with the assistance of Radford, and used as one reference point, in addition to other factors, in setting our executive officers' compensation.

The Committee generally reviews target total direct compensation, comprising both target cash compensation and equity compensation, against the market data described above primarily to ensure that our executive officer compensation program as a whole is positioned competitively to attract and retain the highest caliber executive officers and that the total direct compensation opportunity for the executive officer group is aligned with our corporate objectives and strategic needs. The Committee does not have a specific target compensation level for the NEOs; rather, the Committee reviews a range of market data reference points (generally at the 25th, 50th and 75th percentiles of the market data) with respect to target total direct compensation, target total cash compensation (including both base salary and the target annual cash incentive) and equity compensation (valued based on an approximation of grant date fair value). In making compensation determinations, the Committee considers the market data, along with the other factors described above under "Compensation Philosophy and Overall Compensation Determination Process".

2019 Peer Group. In November 2018, when developing a proposed list of our peer group companies to be used in connection with making compensation decisions for 2019, Radford selected primarily recently

commercial or commercial biopharmaceutical companies with revenue generally between $200 million and $1.5 billion, market capitalization between $4 billion to $25 billion and employee headcounts up to 2,000, reflecting our growth in revenue, market capitalization and headcount.

Based on these criteria, for 2019 Radford recommended, and our Committee approved the following peer group:

Agios Pharmaceuticals, Inc.	Alexion Pharmaceuticals, Inc	Alkermes
Alnylam Pharmaceuticals, Inc.	BeiGene	BioMarin Pharmaceuticals, Inc.
bluebird bio, Inc.	Exelixis, Inc.	Incyte Corporation
Ionis Pharmaceuticals, Inc.	Intercept Pharmaceuticals, Inc.	Jazz Pharmaceuticals, Inc.
Nektar Therapeutics	Sage Therapeutics, Inc.	Sarepta Therapeutics, Inc.
Seattle Genetics, Inc.	Ultragenyx Pharmaceutical Inc.	United Therapeutics Corporation

The 2019 peer group reflects the following changes from our 2018 peer group, all of which were recommended by Radford and approved by our Committee: (i) the removal of the following companies ACADIA Pharmaceuticals, Inc., Clovis Oncology, Inc., Halozyme Therapeutics, Inc., Ironwood Pharmaceuticals, Inc., Juno Therapeutics, Inc., Portola Pharmaceuticals, Inc., Puma Biotechnology, Inc., TESARO, Inc. and The Medicines Company, which no longer meet the criteria above or were acquired since the 2018 peer group had been approved and (ii) the addition of the following companies, which met the criteria above: Alexion Pharmaceuticals, Inc., Alkermes, BeiGene, BioMarin Pharmaceuticals, Inc., Incyte Corporation, Intercept Pharmaceuticals, Inc., Jazz Pharmaceuticals, Inc., Sage Therapeutics, Inc., and United Therapeutics Corporation.

Components of Executive Compensation

The Committee considers each executive officer's performance, contribution to Company goals, responsibilities, experience, qualifications, and where in the competitive range the executive officer's compensation compares to the Company's identified peer group when determining the appropriate compensation for each executive officer. The Committee considers each component of compensation independently and each component in the context of each executive officer's total compensation. Compensation for our NEOs currently consists of three key elements that are designed to reward performance in a simple and straightforward manner: base salaries, annual performance-based cash incentives and long-term equity awards, which generally include restricted stock unit awards ("RSUs") and stock options, which both vest based on continued service over time, and in some years include performance restricted stock units ("PRSUs"), which vest upon achievement of key corporate metrics that we believe will create shareholder value. The purpose and key characteristics of each of these elements are summarized below.

Element	Purpose	Key Characteristics
Base Salary	Designed to compensate competitively at levels necessary to attract and retain qualified executive officers in the life sciences industry; generally based on the scope of each executive officer's responsibilities, as well as his/her qualifications, breadth of experience, performance record and depth of applicable functional expertise; established and adjusted to be appropriate as compared to the applicable market data, enabling the Company to attract, motivate, reward and retain	Fixed compensation where year-to-year adjustments to each executive officer's base salary are based upon sustained superior performance, changes in the general level of base salaries of persons in comparable positions within our industry, and any average merit salary increase for such year for all employees of the Company established by the Committee, as well as other factors the Committee judges to be pertinent during an assessment period.

Element	Purpose	Key Characteristics
	highly skilled executive officers; gives executive officers a degree of certainty in light of having a majority of their compensation at risk.	In making base salary decisions, the Committee exercises its judgment to determine the appropriate weight to be given to each of these factors. Adjustments may also be made during the fiscal year for promotions, highly urgent retention reasons, superior performance in response to changed or challenging circumstances, and similar special circumstances.
Annual Cash Incentives	Motivates executive officers to achieve our short-term strategic plan and milestones that are designed to drive long-term growth and performance while providing flexibility to respond to opportunities and changing market conditions.	Annual cash award opportunity based on corporate performance compared to pre-established corporate goals with pre-established target and maximum payout opportunities for each executive officer. The cash incentive program, including corporate goals and target payouts, are reviewed and approved by the Committee annually and may include individual performance targets for each executive officer. The corporate goals are prepared in an interactive process between management and the Board of Directors based on the Company's business plan and budget for the year. Cash incentive payments are linked to the attainment of overall corporate goals and may include individual performance targets for each executive officer, or other factors the Committee determines appropriate.
Long-Term Equity Incentives (RSUs)	Motivates executive officers to achieve our business objectives by tying compensation to the performance of our common stock over the long term; creates an ownership culture; motivates our executive officers to remain with the Company by mitigating swings in incentive values during periods when market volatility impacts our stock price; directly motivates an executive officer to maximize long-term stockholder value and serve as an	RSUs generally vest on an annual basis, ratably over four years subject to executive officer's continued service; the ultimate value realized varies with our common stock price.

Element	Purpose	Key Characteristics
	effective tool for incentivizing and retaining those executive officers who are most responsible for influencing stockholder value.	
Long-Term Equity Incentives (Stock Options)	Motivates executive officers to achieve our business objectives by tying incentives to the appreciation of our common stock over the long-term and creates an ownership culture.	Stock options with an exercise price equal to the fair market value on the date of grant generally vesting monthly over four years subject to executive officer's continued service; the ultimate realizable value, if any, depends on the appreciation of our common stock price from the date of grant.
Long-Term Equity Incentives (PRSUs)	Creates a strong link to the Company's long-term performance, creates an ownership culture and closely aligns the interests of our executive officers with those of our stockholders because the value that the grants deliver are directly dependent on our performance goal attainment.	PRSUs only vest upon achievement of objectively measurable performance goals tied to our business strategy that focus executive officers on achieving these long-term Company performance goals and increasing stockholder value.
Other Compensation	Provides benefits that promote employee health and welfare, which assists in attracting and retaining our executive officers; certain additional benefits reflect market standards and are reasonable and necessary to attract and/or retain each of our executive officers and allow the executive officers to realize the full benefit of the other elements of compensation we provide.	Executive officers are eligible to participate in the Company's employee benefit plans on the same terms as all other full-time employees. These plans include medical, dental and life insurance and eligibility to participate in the Company's employee stock purchase plan. Additional benefits include disability insurance premiums, an annual physical examination and financial planning services. The terms of the Company's 401(k) Savings Plan (the "401(k) Plan") provide for executive officer and broad-based employee participation on the same general terms. Under the 401(k) Plan, all Company employees are eligible to receive basic matching contributions from the Company that vest annually over three years from date of hire.
Severance and Change in Control Benefits	Serves our retention objectives by helping our NEOs maintain continued focus and dedication to their responsibilities to maximize	Provides protection in the event of a termination of employment under specified circumstances, including following a change in control of the

Element	Purpose	Key Characteristics
	stockholder value, including in the event of a transaction that could result in a change in control of the Company.	Company as described below under "Potential Payments Upon Termination or Change-in-Control". Compensation components for executive officers in the event of a termination by the Company without cause or termination by the executive officer due to constructive termination within six months after the consummation of a change in control include payments for accrued annual base salary, a cash compensation payment, cash compensation for the value of all outstanding stock awards, limited Company-paid health insurance benefits, and any accrued vacation and any accrued benefits under any plans of the Company in which the executive officer is a participant. Eligibility for these benefits requires a signed release agreement by the executive officer. Certain individuals whose offer letters were entered into in or before 2007, including Dr. Gorman, are entitled to tax gross-ups in the event of certain levels of payments they may receive upon a change in control. We have not entered into any new change in control gross-ups for executive officers since 2007, nor does the Company intend to enter into any new agreements containing such gross-ups. Accordingly, Mr. Benevich's, Mr. Abernethy's, Dr. Gano's and Dr. Roberts' employment agreements do not provide for such tax gross-ups.

2018 Executive Officer Compensation Decisions

Base Salary

In February 2018, our Committee reviewed and determined the 2018 base salaries for each of the NEOs as set forth in the table below, except for Mr. Abernethy's and Dr. Roberts' base salary, which the Committee determined in connection with the commencement with Mr. Abernethy's employment in the fourth quarter of 2017 and the commencement of Dr. Roberts' employment in the first quarter of 2018, respectively. In making these 2018 decisions, the Committee considered the market data for each individual NEO's position, as well as the individual's historical salary levels (if applicable), our then-current budget for employee salary adjustments,

anticipated role and responsibilities for the coming year, along with the other factors described under "Compensation Philosophy and Overall Compensation Determination Process" set forth above. The changes also take into account the adjustments made to our peer group for 2018 as a result of our growth in revenue, market capitalization and headcount since late 2016 when our 2017 peer group was determined. Although the Committee does not have a specific target compensation level for each NEO, the NEOs' salaries are generally within the 25th to 50th percentiles of the market data.

Named Executive Officer	2018 Base Salary	% Change from 2017 Base Salary
Kevin C. Gorman, Ph.D	$675,000	5.5%
Matthew C. Abernethy	$420,000	N/A
Eric Benevich	$432,600	5.5%
Kyle W. Gano, Ph.D.	$403,100	7.5%
Eiry W. Roberts, M.D.	$520,000	N/A

Annual Cash Incentives

In February 2018, the Committee approved the Company's executive officer cash incentive target percentages and performance goals for 2018, with the exception of Dr. Roberts' percentage, which the Committee determined in connection with her commencement of employment with us in January 2018. The table below sets forth the targets for our Chief Executive Officer and other NEOs for 2018. No changes were made to the target percentages of our NEOs who were employed with us in 2017. The target percentage is paid as a percentage of such executive officer's base salary. For example, if 100% of the Company's performance goals are achieved for 2018, this would yield our Chief Executive Officer a cash incentive award of 70% of his 2018 base salary.

Executive Officer	Target Percentage of Base Salary
Chief Executive Officer	70%
All Other Executive Officers	50%

In early 2018, the Committee established the corporate goals described below. Our objective corporate goals are directly aligned with our specific strategic goals, including advancing our development programs, our research function, our clinical activities, commercialization activities and certain corporate and financial goals, which we believe will create long-term value for stockholders. The Board of Directors and the Committee did not assign specific relative weightings to the goals for 2018. The maximum corporate achievement for 2018 was 120% of our 2018 corporate goals. In February 2019, the Committee evaluated the accomplishments and performance of the Company against such corporate goals. After its consideration of the Company's performance, as more specifically described below, the Committee rated our 2018 corporate achievement at 90% of our 2018 corporate goals.

Corporate Goal	Corporate Achievement
Maximize the medical and economic impact of INGREZZA®	Partial Achievement
Enter into collaboration	Achieved
Expand internal clinical pipeline	Achieved
Prepare for 2019 NDA for opicapone	Achieved

In February 2019, after making these determinations regarding level of corporate performance achieved against the pre-established performance goals, the Committee reviewed and approved corporate cash incentives as set forth in the table below. The Committee may, in its sole discretion, eliminate any individual cash incentive or reduce or increase the amount of compensation payable with respect to any individual cash incentive. The

Committee exercised its discretion to increase the amount of individual cash incentives with respect to Mr. Abernethy, Mr. Benevich and Dr. Gano for 2018 by paying their cash incentives at the rates noted below, rather than 90%, due to their significant individual performances related to the achievement of the corporate goals and their individual goals.

	2018 Target Annual Cash Incentive		2018 Actual Annual Cash Incentive Paid	
Named Executive Officer	% of Base Salary	$	% of Target Annual Cash Incentive	$
Kevin C. Gorman, Ph.D.	70%	$472,500	90%	$425,250
Matthew C. Abernethy	50%	$210,000	95%	$199,500
Eric Benevich	50%	$216,300	95%	$205,485
Kyle W. Gano, Ph.D.	50%	$201,550	95%	$191,473
Eiry W. Roberts, M.D. (1)	50%	$245,333	90%	$220,800

(1) Dr. Roberts' award was pro-rated due to her commencement of employment with us in January 2018.

Long-Term Equity Awards

Size of Equity Awards. In determining the size of the total equity compensation opportunity in 2018, the Committee:

- aimed to have the aggregate target award value result in target total direct compensation at a level that is competitive in the marketplaces in which we compete;
- focused a larger portion of total direct compensation in the form of long-term and performance-based equity awards intended to drive long-term differentiated value relative to our peers and maximize long-term stockholder value;
- aimed to structure a substantial portion of equity opportunity in the form of awards that vest based on achievement of performance goals to better align our executive officers' long-term compensation opportunity with our stockholders' interests; and
- considered the recommendations of Dr. Gorman for the other NEOs.

Equity Award Mix. The Committee determined that the equity awards granted to the NEOs on February 5, 2018 should consist of stock options, time-vesting RSU grants and performance-vesting RSU grants, or PRSUs, as set forth in the table below. The Committee determined these three types of equity awards provided the appropriate balance of long-term incentives for our executive officers. Specifically, PRSUs that vest based on objectively measurable performance goals focus executive officers on achieving longer-term Company performance goals that are key to our business strategy and increasing stockholder value and RSUs that vest over time provide tangible value to executive officers and serve as an incentive and retention tool during a difficult operating or volatile business environment, while still being tied to our stockholder value. It is the Committee's view that stock options are inherently performance oriented because the executive officer realizes no value from stock options unless and until the Company's stock price increases over the strike price. The Committee believes it is important to evaluate the equity award mix each year to determine what types of equity awards should be granted.

In setting the mix of the three types of equity awards for 2018, the Committee determined that a substantial portion of the equity grants should consist of awards that vest based on our performance (in the form of specific and measurable performance goals), in addition to continued service over time. The mix between the three types of awards was determined based on market data of the equity award practices of peer group companies provided by the Committee's consultant. Accordingly, the Committee structured the mix of equity such that the baseline award of options and RSUs would generally deliver value, as determined by the Black-Scholes value of stock options and the value of RSUs as if they were fully vested, to NEOs between approximately the 75th and 90th

percentiles of the market data with PRSUs providing the opportunity for above-market compensation if earned. The opportunity for higher performance-based compensation opportunity reflects our commitment to pay for performance, with compensation above the median of our peers for exceptional performance and compensation below this level if our performance goals are not reached.

Named Executive Officer	Stock Options	RSU—Time Vesting	PRSU—Performance-based Vesting
Kevin C. Gorman, Ph.D.	104,200	18,400	18,400
Matthew C. Abernethy (1) (2) . . .	N/A	N/A	24,500
Eric Benevich	34,750	6,150	12,250
Kyle W. Gano, Ph.D. (3)	30,400	20,350	12,250
Eiry W. Roberts, M.D. (2) (4) . . .	70,000	20,000	30,650

(1) Mr. Abernethy received grants in connection with his employment with us in fourth quarter 2017, and thus was only awarded PRSUs in early 2018.

(2) Mr. Abernethy and Dr. Roberts received a grant of 12,250 and 18,400 PRSUs, respectively, in February 5, 2018 to align them with the PRSU grant that was made to the other executive officers in February 2016. The performance criteria for such PRSU grants remains the same as the February 2016 PRSU grant in that such PRSUs vest upon: (i) obtaining positive pivotal clinical trial data for the treatment of Tourette syndrome with valbenazine as determined by the Committee and (ii) the FDA's acceptance of our NDA submission of valbenazine for the treatment of Tourette syndrome. Additionally, these PRSUs have a limited term until February 5, 2020 for us to achieve the objectives required for vesting. The individual PRSUs either fully vest upon completion of the corporate objectives by February 5, 2020 or never vest.

(3) Dr. Gano received a one-time RSU award of 15,000 shares in recognition of his contributions over time to us, including being the primary inventor of the valbenazine molecule.

(4) Dr. Roberts received stock option and RSU grants in connection with her commencement of employment with us, as further described under "New Hire Awards" below.

2018 Award Vesting Criteria. The Committee, in consultation with the independent members of the Board of Directors, determined with respect to the February 5, 2018 equity grants that the use of both stock options which vest monthly, on a pro-rata basis, over a four-year period and RSUs which vest annually, on a pro-rata basis, over a four-year period were the appropriate time-vesting equity compensation vehicles to use in combination with the PRSU awards. The Committee and Board of Directors believe that these long-term equity based compensation awards closely align stockholder and management interests.

The Committee also carefully set the PRSU award goals to be rigorous and ultimately serve to align management and our stockholders' interests. A portion of the 2018 PRSUs will vest upon FDA approval of opicapone within a specified time period, and a portion of the 2018 PRSUs will vest upon achievement of specified revenue milestones within a specified time period. If the vesting criteria are achieved, we believe significant stockholder value will be created. Additionally, these PRSUs have a limited term until March 15, 2021 for us to achieve the objectives required for vesting. The individual PRSUs either fully vest upon completion of the corporate objectives by March 15, 2021 or never vest.

New Hire Awards. In connection with her commencement of employment, on January 8, 2018, Dr. Roberts was granted: (i) an initial stock option to purchase up to 70,000 shares of the Company's common stock, 25% of which will vest on the first anniversary of the grant date, and the remainder of which will vest in equal monthly installments thereafter over three years and (ii) an RSU award covering 20,000 shares of the Company's common stock which vests in equal annual installments over four years, which has generally been the vesting schedule for all new hire grants. The Committee and Board of Directors structures the vesting schedules for new hire awards in order to serve as an effective tool for incentivizing and retaining our NEOs.

Retirement Benefits

The Company's matching contribution to the 401(k) Plan for 2018 was 50% of eligible participant contributions, subject to applicable federal limits. Our NEOs are eligible for these benefits on the same basis as our other employees. The Company made no additional discretionary contributions to the 401(k) Plan in 2018.

Equity Ownership Guidelines

Since 2014, we have maintained equity ownership guidelines for our executive officers. The Committee amended these guidelines in November 2018 to increase the guideline for our Chief Executive Officer from three to six times his base salary. The equity ownership guidelines are designed to further align the interests of the executive officers with those of our stockholders by ensuring that our executive officers have a meaningful financial stake in the Company's long-term success. The equity ownership guidelines establish a minimum equity ownership level by position, with such values determined based on the value of our common stock owned by such persons as of certain measurement dates. All shares directly or beneficially owned by the executive officer, including the net exercisable value of outstanding vested stock options (where the market price of our common stock exceeds the strike price of such option) are included in determining the value of equity owned under our equity ownership guidelines. The equity ownership requirements are as follows:

Chief Executive Officer	6 times base salary
All other executive officers	1 times base salary

New executive officers are granted a five-year period to reach the equity ownership requirements set forth in the guidelines and are expected to make annual progress toward the equity ownership requirements during this five-year period. When an executive officer does not meet the equity ownership requirements set forth in the guidelines, he/she is restricted from selling any held shares until such requirements are met. Additionally, should an executive officer who does not meet the equity ownership requirements choose to exercise a stock option or vest in any RSUs, he or she is required to retain all shares acquired through those transactions, aside from any shares necessary to fulfill such transaction related tax obligations, until full compliance with the equity ownership guidelines is attained.

Annual compliance with the equity ownership guidelines is assessed during the first quarter of each year. As of March 1, 2019, each of our executive officers is in compliance with the equity ownership guidelines.

Equity Trading Policies and Procedures

The Company has policies and procedures to prohibit direct or indirect participation by employees of the Company in transactions involving trading activities in Company common stock which by their aggressive or speculative nature may give rise to an appearance of impropriety. Such prohibited activities would include the purchase of put or call options, or the writing of such options as well as short sales, hedging transactions such as "cashless" collars, forward sales, equity swaps and other related arrangement which may indirectly involve short-sale and any other transactions designed for profit from short-term movement in the Company's stock price. In addition, no officer, director or employee of the Company may margin, or make any offer to margin, any Company common stock, including without limitation, borrowing against such stock, at any time.

To the Company's knowledge, there were no transactions involving hedging, pledging or margining Company common stock during 2018, nor were there any such transactions as of the Record Date.

The Company also requires directors and executive officers to complete all equity related open-market purchase and sale transactions via a 10b5-1 plan. The 10b5-1 plans typically cover, among other transactions, direct sales and purchases of Company stock, as well as same-day-sales related to option exercises and sales of stock for tax payments upon the vesting of restricted stock units. All 10b5-1 plans are required to have a waiting period from the election date to the date of the first transaction. Additionally, Company policy restricts the executive officers from making certain changes to 10b5-1 trading plan subsequent to adoption of the plan.

Compensation Recoupment Policy

In February 2017, we adopted a clawback policy, even though the SEC has not yet issued final rules implementing the Dodd-Frank Wall Street Reform and Consumer Protection Act requirement. Our policy currently provides that, in the event that (i) we are required to prepare an accounting restatement for any fiscal quarter or year due to our material noncompliance with any financial reporting requirement and (ii) it is determined that misconduct contributed to the noncompliance that resulted in the obligation to restate our financial statements, we may take action to recover from any officer whose misconduct contributed to the noncompliance which resulted in the obligation to restate our financial statements, the incentive compensation that was paid or vested to such officer during the twelve-month period preceding the restatement obligation. We will also comply with the requirements of the Dodd-Frank Wall Street Reform and Consumer Protection Act and will modify our policy to the extent required by law once the SEC adopts final regulations on the subject.

2019 Named Executive Officer Compensation Decisions

Base Salary

In February 2019, our Committee reviewed and determined the 2019 base salaries and target cash bonus for each of the NEOs as set forth in the table below. In making these 2019 decisions, the Committee considered the market data for each individual NEO's position, as well as the individual's historical salary levels, our then-current budget for employee salary adjustments, anticipated role and responsibilities for the coming year, along with the other factors described under "Compensation Philosophy and Overall Compensation Determination Process" set forth above. Although the Committee does not have a specific target compensation level for each NEO, the NEOs' salaries are generally within the 25th to 50th percentiles of the market data.

Named Executive Officer	2019 Base Salary	2019 Target Percentage of Base Salary
Kevin C. Gorman, Ph.D	$725,000	80%
Matthew C. Abernethy	$495,600	50%
Eric Benevich	$467,200	50%
Kyle W. Gano, Ph.D.	$443,400	50%
Eiry W. Roberts, M.D.	$538,200	50%

Long-Term Equity Awards

In February 2019, our Committee approved a grant of options and RSUs to each of the NEOs as set forth in the table below. The stock options vest monthly, on a pro-rata basis, over a four-year period and the RSUs vest annually, on a pro-rata basis, over a four-year period. The Committee determined that these two types of equity awards provided the appropriate balance of long-term incentives for our executive officers. The mix between the two types of awards was determined based on market data of the equity award practices of peer group companies provided by the Committee's consultant. Accordingly, the Committee structured the mix of equity such that the baseline award of options and RSUs would generally deliver value, as determined by the Black-Scholes value of stock options and the value of RSUs as if they were fully vested, to NEOs between approximately the 75th and 90th percentiles of our peer group. The opportunity for higher performance-based compensation opportunity reflects our commitment to pay for performance, with compensation above the median of our peers for exceptional performance and compensation below this level if our performance goals are not reached.

Named Executive Officer	Stock Options	RSU—Time Vesting
Kevin C. Gorman, Ph.D.	133,345	24,677
Matthew C. Abernethy	83,341	15,423
Eric Benevich	83,341	15,423
Kyle W. Gano, Ph.D.	66,673	12,339
Eiry W. Roberts, M.D.	66,673	12,339

Tax Considerations

Internal Revenue Code Section 162(m)

Under Section 162(m) of the Internal Revenue Code ("Section 162(m)"), compensation paid to any publicly held corporation's "covered employees" that exceeds $1 million per taxable year for any covered employee is generally non-deductible. Prior to the enactment of the Tax Cuts and Jobs Act, Section 162(m) provided a performance-based compensation exception, pursuant to which the deduction limit under Section 162(m) did not apply to any compensation that qualified as "performance-based compensation" under Section 162(m). Pursuant to the Tax Cuts and Jobs Act, the performance-based compensation exception under Section 162(m) was repealed with respect to taxable years beginning after December 31, 2017, except that certain transition relief is provided for compensation paid pursuant to a written binding contract which was in effect on November 2, 2017 and which is not modified in any material respect on or after such date.

Compensation paid to each of the Company's "covered employees" in excess of $1 million per taxable year generally will not be deductible unless it qualifies for the performance-based compensation exception under Section 162(m) pursuant to the transition relief described above. Because of certain ambiguities and uncertainties as to the application and interpretation of Section 162(m), as well as other factors beyond the control of the Committee, no assurance can be given that any compensation paid by the Company will be eligible for such transition relief and be deductible by the Company in the future. Although the Committee will continue to consider tax implications as one factor in determining executive officer compensation, the Committee also looks at other factors in making its decisions and retains the flexibility to provide compensation for the Company's NEOs in a manner consistent with the goals of the Company's executive officer compensation program and the best interests of the Company and its stockholders, which may include providing for compensation that is not deductible by the Company due to the deduction limit under Section 162(m). The Committee also retains the flexibility to modify compensation that was initially intended to be exempt from the deduction limit under Section 162(m) if it determines that such modifications are consistent with the Company's business needs.

Internal Revenue Code Section 409A

Section 409A governs deferred compensation arrangements. The Committee structures our deferred compensation programs with the assistance of our external counsel to be exempt from, or compliant with, Section 409A.

Accounting Considerations

The Company accounts for equity compensation paid to our employees under the FASB ASC Topic 718, which requires us to estimate and record an expense over the service period of the equity award. Our cash compensation is recorded as an expense at the time the obligation is incurred. The accounting impact of our compensation programs are one of many factors that the Committee considers in determining the structure and size of our executive officer compensation programs.

Risk Analysis of Our Compensation Program

Our Committee has reviewed our compensation policies as generally applicable to our employees and believes that our policies do not encourage excessive or inappropriate risk taking and that the level of risk that they do encourage is not reasonably likely to have a material adverse effect on the Company. As part of its assessment, the Committee considered, among other factors, the allocation of compensation among base salary and short- and long-term compensation, our approach to establishing Company-wide and individual financial, operational and other performance targets, our bonus structure of payouts at multiple levels of performance (including maximum payout caps and payments for performance below target levels) and the nature of our key performance metrics. We believe these practices encourage our employees to focus on sustained, long-term Company growth, which we believe will ultimately contribute to the creation of stockholder value.

EXECUTIVE COMPENSATION AND OTHER INFORMATION

Summary Compensation Table The following table sets forth the compensation paid by the Company for the fiscal years ended December 31, 2016, 2017 and 2018 to the NEOs named below.

Summary Compensation Table

Name and Principal Position (1)	Year	Salary ($) (2)	Bonus ($) (2)	Option Awards ($) (3)	Stock Awards ($) (4)	All Other Compensation ($) (5)	Total ($)
Kevin C. Gorman, Ph.D.	2016	$592,000	$337,440	$2,202,729	$2,114,413	$ 43,076	$5,289,658
Chief Executive Officer	2017	$640,000	$515,200	$4,929,898	$1,426,920	$ 44,356	$7,556,374
	2018	$675,000	$425,250	$4,486,852	$2,998,832	$ 47,045	$8,632,979
Matthew C. Abernethy	2017	$ 38,231	$ 20,071	$2,416,800	$ 920,000	$394,190	$3,789,292
Chief Financial Officer	2018	$420,000	$199,500	$ —	$1,996,506	$ 69,741	$2,685,747
Eric Benevich	2016	$376,000	$169,200	$ 831,828	$1,050,908	$ 62,663	$2,490,599
Chief Commercial Officer	2017	$410,000	$246,000	$1,825,536	$ 458,344	$ 37,722	$2,977,602
	2018	$432,600	$205,485	$1,496,335	$1,499,417	$ 38,768	$3,672,605
Kyle W. Gano, Ph.D.	2016	$345,000	$155,250	$ 734,916	$1,014,918	$ 4,363	$2,254,447
Chief Business Development	2017	$375,000	$215,625	$1,426,200	$ 328,624	$ 5,123	$2,350,572
Officer	2018	$403,100	$191,473	$1,309,024	$2,656,575	$ 8,069	$4,568,241
Eiry W. Roberts, M.D.	2018	$490,700	$220,800	$2,863,700	$4,053,869	$671,554	$8,300,623
Chief Medical Officer							

(1) The titles and capacities set forth in the table above are as of March 1, 2019.

(2) Salary and bonus figures represent amounts earned during each respective fiscal year, regardless of whether part or all of such amounts were paid in subsequent fiscal year(s). Bonuses are awarded pursuant to a bonus program.

(3) The amounts shown are the full grant date fair value in accordance with Accounting Standards Codification 718-10, Compensation—Stock Compensation (ASC 718). The assumptions used to calculate the grant date fair value of stock awards are set forth under Note 8 of the Notes to the Consolidated Financial Statements included in the Company's Annual Report on Form 10-K for the year ended December 31, 2018 filed with the SEC on February 8, 2019. The grant date fair values of option awards for 2016, 2017 and 2018 (other than Mr. Abernethy's 2017 option award and Dr. Roberts' new hire award) are based on per share Black-Scholes values of $20.19, $23.77 and $43.06, respectively. Mr. Abernethy's 2017 option awards are based on per share Black-Scholes value of $40.28 and Dr. Roberts' new hire option awards are based on per share Black-Scholes value of $40.91.

(4) The amounts shown are the full grant date fair value in accordance with Accounting Standards Codification 718-10, Compensation—Stock Compensation (ASC 718). The assumptions used to calculate the grant date fair value of stock awards are set forth under Note 8 of the Notes to the Consolidated Financial Statements included in the Company's Annual Report on Form 10-K for the year ended December 31, 2018 filed with the SEC on February 8, 2019. The fair values of restricted stock units granted in 2016, 2017 and 2018 are based on the Company's closing market price per share on the grant date, which was $35.99 for all 2016 grants, which was $43.24 for all 2017 grants (other than Mr. Abernethy's grant, for which it was $73.60) and which was $81.49 for all 2018 grants (other than Dr. Roberts' new hire grant, for which it was $77.81).

(5) Includes all other compensation as described in the table below.

All Other Compensation Table

Name	Year	401(k) Employer Match	Insurance Premiums (1)	Inducement Payments	Relocation Expense	Total Other
Kevin C. Gorman, Ph.D.	2016	$7,950	$35,126	$ —	$ —	$ 43,076
	2017	$7,950	$36,406	$ —	$ —	$ 44,356
	2018	$8,250	$38,795	$ —	$ —	$ 47,045
Matthew C. Abernethy	2017	$ —	$ 2,190	$180,000	$212,000	$394,190
	2018	$8,250	$27,817	$ —	$ 33,674	$ 69,741
Eric Benevich.	2016	$7,393	$28,454	$ —	$ 26,816	$ 62,663
	2017	$7,950	$29,772	$ —	$ —	$ 37,722
	2018	$8,250	$30,518	$ —	$ —	$ 38,768
Kyle. W. Gano, Ph.D.	2016	$1,725	$ 2,638	$ —	$ —	$ 4,363
	2017	$1,875	$ 3,248	$ —	$ —	$ 5,123
	2018	$5,375	$ 2,694	$ —	$ —	$ 8,069
Eiry W. Roberts, M.D.	2018	$8,250	$35,522	$225,000	$402,782	$671,554

(1) The amounts in this column represent the costs for medical insurance for Company-wide plans, as well as disability insurance premiums and related tax gross-up amounts.

Grants of Plan-Based Awards During the Fiscal Year Ended December 31, 2018

The following table sets forth certain information regarding plan based-awards granted by the Company during the year ended December 31, 2018 to the NEOs below:

Name	Grant Date	Estimated Future Payouts Under Equity Incentive Plan Awards Target(#)	All Other Stock Awards: Number of Shares of Stock or Units (#) (2)	All Other Option Awards: Number of Securities Underlying Options (#) (2)	Exercise or Base Price of Awards ($/Sh) (2)	Grant Date Fair Value (3)
Kevin C. Gorman, Ph.D.	2/5/2018		18,400		$ —	$1,499,416
	2/5/2018 (1)	18,400			$ —	$1,499,416
	2/5/2018			104,200	$81.49	$4,486,852
Matthew C. Abernethy.	2/5/2018 (1)	12,250			$ —	$ 998,253
	2/5/2018 (4)	12,250			$ —	$ 998,253
Eric Benevich.	2/5/2018		6,150		$ —	$ 501,164
	2/5/2018 (1)	12,250			$ —	$ 998,253
	2/5/2018			34,750	$81.49	$1,496,335
Kyle W. Gano, Ph.D.	2/5/2018		20,350		$ —	$1,658,322
	2/5/2018 (1)	12,250			$ —	$ 998,253
	2/5/2018			30,400	$81.49	$1,309,024
Eiry W. Roberts, M.D..	1/8/2018		20,000		$ —	$1,556,200
	2/5/2018 (1)	18,400			$ —	$1,499,416
	2/5/2018 (4)	12,250			$ —	$ 998,253
	1/8/2018			70,000	$77.81	$2,863,700

(1) Represents the target number of shares that may be earned under the PRSUs granted to NEOs in 2018 under the Company's 2011 Plan. The PRSUs did not include threshold or maximum award amounts. The PRSUs vest upon the following: (i) a portion of each grant shall vest automatically on the date the FDA approves the NDA for opicapone within a specified period of time; and (ii) a portion of each grant shall vest upon the achievement of specified revenue

milestones within a specified time period. These PRSUs either fully vest upon the completion of the above criteria by March 15, 2021 or never vest.

(2) All options and restricted stock units were granted and approved on the same date with option awards having an exercise price equal to the closing market price of the Company's common stock on the date of grant. All option awards are time-based awards, which vest monthly, on a pro-rata basis, over four years and have an option term of ten years. These restricted stock units vest annually, on a pro-rata basis, over a four-year period.

(3) Reflects the grant date per share Black-Scholes value of $43.06 for option awards and the grant date per share value of $81.49 for restricted stock units, each granted on February 5, 2018 (other than with respect to Dr. Roberts' new hire equity awards) which was calculated in accordance with ASC 718. The grant date per share Black-Scholes value for Dr. Roberts' new hire option awards and restricted stock units was $40.91 and $77.81, respectively.

(4) Represents additional PRSU grant made to Mr. Abernethy and Dr. Roberts, which grant was made on February 5, 2018 and was made to align with the PRSU grant that was made to the other executive officers in February 2016. The performance criteria for such grant remains the same as the February 2016 PRSU grant in that such PRSUs vest upon: (i) obtaining positive pivotal clinical trial data for the treatment of Tourette syndrome with valbenazine as determined by the Committee and (ii) the FDA's acceptance of our NDA submission of valbenazine for the treatment of Tourette syndrome.

Agreements with Named Executive Officers

Kevin C. Gorman, Ph.D. has an employment contract that provides that: (i) Dr. Gorman will serve as the Company's Executive Vice President and Chief Operating Officer commencing on August 1, 2007 at an initial annual salary of $400,000, subject to annual adjustment by the Board of Directors (subsequent to entering into the employment contract, Dr. Gorman became Chief Executive Officer and his annual base salary for 2018 is $675,000); (ii) the agreement terminates upon death, disability, termination by the Company with or without cause, constructive termination or voluntary resignation; (iii) Dr. Gorman is eligible for a discretionary annual bonus as determined by the Board of Directors, based upon achieving certain performance criteria; and (iv) each year starting in 2007 and continuing for the term of the agreement, Dr. Gorman will be eligible to receive equity awards with the number of shares, vesting terms, and exercise price as shall be determined by the Board of Directors.

Matthew C. Abernethy has an employment contract that provides that: (i) Mr. Abernethy will be entitled to receive an initial base salary of $420,000 per year, which was his base salary for 2018, subject to future adjustments; (ii) the agreement terminates upon death, disability, termination by the Company with or without cause, constructive termination or voluntary resignation; (iii) Mr. Abernethy is eligible for a discretionary annual bonus as determined by the Board of Directors, based upon achieving certain performance criteria; (iv) Mr. Abernethy is eligible to receive equity awards with the number of shares, vesting terms, and exercise price as shall be determined by the Board of Directors; (v) Mr. Abernethy received a one-time cash inducement advance in the amount of $180,000, which will be deemed earned when Mr. Abernethy completes two full years of employment with the Company; and (vi) Mr. Abernethy received relocation benefits, including a one-time cash relocation advance in the amount of $140,000.

Eric Benevich has an employment contract that provides that: (i) Mr. Benevich will serve as the Company's Chief Commercial Officer commencing on May 26, 2015 at an initial annual salary of $365,000, subject to annual adjustment by the Board of Directors (Mr. Benevich's annual base salary for 2018 is $432,600); (ii) the agreement terminates upon death, disability, termination by the Company with or without cause, constructive termination or voluntary resignation; (iii) Mr. Benevich is eligible for a discretionary annual bonus as determined by the Board of Directors, based upon achieving certain performance criteria; and (iv) Mr. Benevich is eligible to receive stock option awards with the equity awards with the number of shares, vesting terms, and exercise price as shall be determined by the Board of Directors.

Kyle W. Gano, Ph.D. has an employment contract that provides that: (i) Dr. Gano will serve as the Company's Chief Business Development Officer commencing on November 12, 2014 at an initial annual salary of $310,000, subject to annual adjustment by the Board of Directors (Dr. Gano's annual base salary for 2018 is $403,100); (ii) the agreement terminates upon death, disability, termination by the Company with or without cause, constructive termination or voluntary resignation; (iii) Dr. Gano is eligible for a discretionary annual

bonus as determined by the Board of Directors, based upon achieving certain performance criteria; and (iv) Dr. Gano is eligible to receive stock option awards with the equity awards with the number of shares, vesting terms, and exercise price as shall be determined by the Board of Directors.

Eiry W. Roberts, M.D. has an employment contract that provides that: (i) Dr. Roberts will serve as the Company's Chief Medical Officer commencing on January 8, 2018 at an initial annual salary of $520,000, subject to annual adjustment by the Board of Directors; (ii) the agreement terminates upon death, disability, termination by the Company with or without cause, constructive termination or voluntary resignation; (iii) Dr. Roberts is eligible for a discretionary annual bonus as determined by the Board of Directors, based upon achieving certain performance criteria; (iv) Dr. Roberts is eligible to receive stock option awards with the equity awards with the number of shares, vesting terms, and exercise price as shall be determined by the Board of Directors, (v) Dr. Roberts received a one-time cash inducement advance in the amount of $225,000, which will be deemed earned when Dr. Roberts completes two full years of employment with the Company; and (vi) Dr. Roberts received relocation benefits, including a one-time cash relocation advance in the amount of $220,000.

Outstanding Equity Awards at Fiscal Year-End. The following table sets forth the outstanding equity awards held by the NEOs at December 31, 2018.

	Option Awards						Stock Awards		
Name	Award Grant and Commencement of Vesting Date	Number of Securities Underlying Unexercised Options (#) Exercisable	Number of Securities Underlying Unexercised Options (#) Unexercisable	Equity Incentive Plan Awards: Number of Securities Underlying Unexercised Unearned Options (#)	Option Exercise Price ($)	Option Expiration Date	Number of Shares or Units of Stock That Have Not Vested (#)	Market Value of Shares or Units of Stock That Have Not Vested ($)	Equity Incentive Plan Awards: Market or Payout Value of Unearned Shares, Units or Other Rights That Have Not Vested ($)
Kevin C. Gorman, Ph.D.	1/12/2012	223,449	—	—	$ 8.66	1/12/2022 (2)	—	—	—
	1/10/2013	164,801	—	—	$ 8.65	1/10/2023 (2)	—	—	—
	1/16/2014	167,858	—	—	$19.59	1/16/2024 (2)	—	—	—
	2/3/2015	142,883	6,253	—	$32.99	2/3/2025 (2)	6,250 (4)	446,313	—
	2/5/2016	77,277	31,823	—	$35.99	2/5/2026 (2)	47,250 (3)	821,215	2,552,908
	2/6/2017	95,056	112,344	—	$43.24	2/6/2027 (2)	24,750 (4)	1,767,398	—
	2/5/2018	21,708	82,492	—	$81.49	2/5/2028 (2)	36,800 (5)	1,313,944	1,313,944
Matthew C. Abernethy	12/1/2017	15,007	44,993	—	$73.60	12/1/2027 (1)	9,375 (4)	669,469	—
	2/5/2018	—	—	—	—		24,500 (5)	—	1,749,545
Eric Benevich.	6/1/2015	52,501	7,499	—	$41.78	6/1/2025 (1)			
	2/5/2016	29,182	12,018	—	$35.99	2/5/2026 (2)	24,850 (3)	310,634	1,463,905
	2/6/2017	35,199	41,601	—	$43.24	2/6/2027 (2)	7,950 (4)	567,710	—
	2/5/2018	7,240	27,510	—	$81.49	2/5/2028 (2)	18,400 (5)	439,172	874,773
Kyle W. Gano, Ph.D.	1/12/2012	28,266	—	—	$ 8.66	1/12/2022 (2)	—	—	—
	1/16/2014	75,000	—	—	$19.59	1/16/2024 (2)	—	—	—
	2/3/2015	62,290	2,710	—	$32.99	2/3/2025 (2)	2,750 (4)	196,378	—
	2/5/2016	25,782	10,618	—	$35.99	2/5/2026 (2)	24,350 (3)	274,929	1,463,905
	2/6/2017	27,499	32,501	—	$43.24	2/6/2027 (2)	5,700 (4)	407,037	—
	2/5/2018	6,333	24,067	—	$81.49	2/5/2028 (2)	32,600 (5)	1,453,194	874,773
Eiry W. Roberts, M.D	1/8/2018	—	70,000	—	$77.81	1/8/2028 (1)	20,000 (4)	1,428,200	—
	2/5/2018	—	—	—	—		30,650 (5)	—	2,188,717

(1) Vests monthly over four years, subject to an initial one-year "cliff."

(2) Vests monthly over four years.

(3) Consists of 35,750 Performance Restricted Stock Units (PRSUs) for Dr. Gorman, 20,500 PRSUs for Mr. Benevich and Dr. Gano. These PRSUs vest upon the Company obtaining positive pivotal data in Tourette syndrome and filing of a NDA for valbenazine in Tourette syndrome. The

PRSUs have a limited term of four years to file the NDA. Additionally, Dr. Gorman has 11,500 restricted stock unit (RSU) awards, Mr. Benevich has 4,350 RSUs and Dr. Gano has 3,850 RSUs. These RSUs are time-based and vest annually, on a pro-rata basis over four years.

(4) Vests annually over four years.

(5) Consists of 18,400 Performance Restricted Stock Units (PRSUs) for Dr. Gorman, 12,250 PRSUs foreach of Mr. Abernethy, Mr. Benevich, Dr. Gano and Dr. Roberts. A portion of portion of this grant will vest upon FDA approval of opicapone within a specified time period, and portions of this grant will vest upon achievement of specified revenue milestones within a specified time period. These PRSUs have a limited term of 23 months to achieve the objectives. Mr. Abernethy and Dr. Roberts also have 12,250 PRSUs and 18,400 PRSUs, respectively, that were granted to align them with the PRSU grant that was made to the other executive officers in February 2016. These PRSUs vest upon the Company obtaining positive pivotal data in Tourette syndrome and filing of a NDA for valbenazine in Tourette syndrome. Additionally, Dr. Gorman has 18,400 restricted stock unit (RSU) awards, Mr. Benevich has 6,150 RSUs and Dr. Gano has 20,350 RSUs. These RSUs are time-based and vest annually, on a pro-rata basis over four years.

Option Exercises and Stock Vested During the Year. The following table sets forth the options exercised and stock awards that vested during fiscal 2018 along with their respective values at December 31, 2018 for the NEOs:

Option Exercises and Stock Vested Table

	Option Awards (1)		Stock Awards (2)	
Name	Number of Shares Acquired on Exercise (#)	Value Realized on Exercise ($) (3)	Number of Shares Acquired on Vesting (#)	Value Realized on Vesting ($) (4)
Kevin C. Gorman, Ph.D.	284,756	$22,039,758	27,750	$2,271,265
Matthew C. Abernethy	—	$ —	3,125	$ 281,313
Eric Benevich.	—	$ —	29,825	$2,861,650
Kyle W. Gano, Ph.D.	51,916	$ 4,929,734	9,825	$ 801,857
Eiry W. Roberts, M.D.	—	$ —	—	$ —

(1) Information relates to stock option exercises during 2018.

(2) Information relates to restricted stock units that vested during 2018.

(3) Calculated by multiplying the number of shares acquired upon exercise of stock options by the difference between the exercise price and the market price of the Company's common stock at the time of exercise.

(4) Calculated by multiplying the number of shares acquired upon vesting of restricted stock units by the average price of shares sold for purposes of satisfying federal and state income tax liabilities.

Potential Payments Upon Termination or Change-in-Control. The following tables set forth the potential severance benefits payable to the NEOs in the event of a termination prior to or following a change in control, assuming such event occurred on December 31, 2018:

Potential Payment upon Termination Table*

Name	Salary (1)	Bonus (2)	Accrued Compensation (3)	Stock Awards (4)	Medical (5)	Total
Kevin C. Gorman, Ph.D.	$843,750	$590,625	$57,856	$6,295,930	$45,495	$7,833,656
Matthew C. Abernethy	$420,000	$210,000	$25,324	$ 223,157	$28,152	$ 906,633
Eric Benevich.	$432,600	$216,300	$38,309	$1,582,196	$36,396	$2,305,801
Kyle W. Gano, Ph.D.	$403,100	$201,550	$48,448	$1,681,774	$ 2,700	$2,337,572
Eiry W. Roberts, M.D.	$520,000	$260,000	$19,019	$ 357,050	$33,144	$1,189,213

* Reflects a termination without cause or due to a constructive termination, or deemed termination, prior to a change in control.

(1) Based on salary as of December 31, 2018.

(2) Based on bonus targets established by the Board of Directors for 2018.

(3) Accrued compensation is comprised of vacation pay earned and unpaid as of December 31, 2018.
(4) The amounts in this column represent the intrinsic value of 'in-the money' unvested options and restricted stock units as of December 31, 2018 that would vest in accordance with the executive officers' employment agreements. Values were derived using the closing price of the Company's common stock on December 31, 2018 of $71.41.
(5) Medical is comprised primarily of health insurance premiums for the period specified in each executive officer's employment contract.

Potential Payment upon Change-in-Control Table*

Name	Severance (1)	Bonus (2)	Accrued Compensation (3)	Stock Awards (4)	Medical (5)	Total
Kevin C. Gorman, Ph.D.	$1,350,000	$945,000	$57,856	$12,747,862	$72,792	$15,173,510
Matthew C. Abernethy	$ 630,000	$315,000	$25,324	$ 2,419,014	$42,228	$ 3,431,566
Eric Benevich.	$ 648,900	$324,450	$38,309	$ 5,475,966	$54,594	$ 6,542,219
Kyle W. Gano, Ph.D.	$ 604,650	$302,325	$48,448	$ 6,065,975	$ 4,050	$ 7,025,448
Eiry W. Roberts, M.D.	$ 780,000	$390,000	$19,019	$ 3,616,917	$49,716	$ 4,855,652

* Reflects benefits to be provided upon a termination without cause, or due to a constructive termination, within a specified time following a change-in-control.
(1) Based on salary as of December 31, 2018.
(2) Based on bonus targets established by the Board of Directors for 2018.
(3) Accrued compensation is comprised of vacation pay earned and unpaid as of December 31, 2018.
(4) The amounts in this column represent the intrinsic value of 'in-the money' unvested options and restricted stock units as of December 31, 2018 that would vest in accordance with the executive officers' employment agreements. Values were derived using the closing price of the Company's common stock on December 31, 2018 of $71.41.
(5) Medical is comprised primarily of health insurance premiums for the period specified in each executive officer's employment contract.

Potential Payment upon Termination by Disability Table*

Name	Salary (1)	Bonus (2)	Accrued Compensation (3)	Stock Awards (4)	Medical (5)	Total
Kevin C. Gorman, Ph.D.	$843,750	$590,625	$57,856	$6,295,930	$45,495	$7,833,656
Matthew C. Abernethy	$420,000	$210,000	$25,324	$ 223,157	$28,152	$ 906,633
Eric Benevich.	$432,600	$216,300	$38,309	$1,582,196	$36,396	$2,305,801
Kyle W. Gano, Ph.D.	$403,100	$201,550	$48,448	$1,681,774	$ 2,700	$2,337,572
Eiry W. Roberts, M.D.	$520,000	$260,000	$19,019	$ 357,050	$33,144	$1,189,213

* Reflects a termination due to disability.
(1) Based on salary as of December 31, 2018.
(2) Based on bonus targets established by the Board of Directors for 2018.
(3) Accrued compensation is comprised of vacation pay earned and unpaid as of December 31, 2018.
(4) The amounts in this column represent the intrinsic value of 'in-the money' unvested options and restricted stock units as of December 31, 2018 that would vest in accordance with the executive officers' employment agreements. Values were derived using the closing price of the Company's common stock on December 31, 2018 of $71.41.
(5) Medical is comprised primarily of health insurance premiums for the period specified in each executive officer's employment contract.

Potential Payment upon Termination by Death Table*

Name	Bonus (1)	Accrued Compensation (2)	Stock Awards (3)	Total
Kevin C. Gorman, Ph.D.	$472,500	$57,856	$6,295,930	$6,826,286
Matthew C. Abernethy	$210,000	$25,324	$ 223,157	$ 458,481
Eric Benevich.	$216,300	$38,309	$1,582,196	$1,836,805
Kyle W. Gano, Ph.D.	$201,550	$48,448	$1,681,774	$1,931,772
Eiry W. Roberts, M.D.	$260,000	$19,019	$ 357,050	$ 636,069

* Reflects a termination due to death.

(1) Based on bonus targets established by the Board of Directors for 2018.

(2) Accrued compensation is comprised of vacation pay earned and unpaid as of December 31, 2018.

(3) The amounts in this column represent the intrinsic value of 'in-the money' unvested options and restricted stock units as of December 31, 2018 that would vest in accordance with the executive officers' employment agreements. Values were derived using the closing price of the Company's common stock on December 31, 2018 of $71.41.

The following is a description of the arrangements under which the NEOs may be entitled to potential payments upon a termination without cause or resignation due to a constructive termination (including following a change-in-control) or upon disability or death. Resignation due to constructive termination may include an executive's resignation following one or more of the following material adverse changes in the nature of such executive's employment, as specified in the agreement, which is not cured following notification:

- a significant reduction in the executive or the executive supervisor's duties or responsibilities,
- a material reduction in base salary,
- material relocation, or
- material breach of the executive's employment agreement.

Dr. Gorman is entitled to 1.25 times the amount of his annual base salary and target annual bonus to be paid equally over 15 months, an acceleration of unvested shares that would have vested over the 15 continuous months after the date of termination, and payment of COBRA benefits to continue then-current coverage for a period of 15 months following termination in the event that the Company terminates his employment without cause, or he resigns due to a constructive termination. In the event of such termination within six months after the consummation of a change of control, Dr. Gorman is entitled to 2 times the amount of his annual base salary and annual target bonus to be paid in one lump sum, a cash amount equal to the value of all unvested stock awards and all vested and outstanding stock awards, and payment of COBRA benefits to continue then-current coverage for a period of 24 months following termination. In addition, the Company has agreed to reimburse Dr. Gorman for the increase in federal and state income taxes payable by him by reason of the benefits provided in connection with such a termination in connection with a change in control if the total payment exceeds 2.99 times his base amount by more than 15%. In the event of termination due to disability, Dr. Gorman is entitled to 15 months of base salary paid semi-monthly over 15 months, a lump sum amount equal to his target annual bonus multiplied by a fraction the numerator of which is the number of full months of employment by Dr. Gorman in the fiscal year and the denominator of which is 12, an acceleration of unvested shares that would have vested over the 15 continuous months after the date of termination, and payment of COBRA benefits to continue then-current coverage for a period of 15 months following termination. In the event of a termination due to Dr. Gorman's death, his beneficiaries or estate, would be entitled to an acceleration of unvested shares that would have vested over the 15 continuous months after the date of termination, a lump sum amount equal to his target annual bonus multiplied by a fraction the numerator of which is the number of full months of employment by Dr. Gorman in the fiscal year and the denominator of which is 12 and any accrued and unpaid compensation on the date of termination.

Mr. Abernethy is entitled to 1.0 times the amount of his annual base salary and target annual bonus to be paid equally over 12 months, an acceleration of unvested shares that would have vested over the 12 continuous months after the date of termination, and payment of COBRA benefits to continue then-current coverage for a period of 12 months following termination in the event that the Company terminates his employment without cause, or he resigns due to a constructive termination. In the event of such termination within six months after the consummation of a change of control, Mr. Abernethy is entitled to 1.5 times the amount of his annual base salary and annual target bonus to be paid in one lump sum, a cash amount equal to the value of all unvested stock awards and all vested and outstanding stock awards, and payment of COBRA benefits to continue then-current coverage for a period of 18 months following termination; provided, however, in the event such payment to Mr. Abernethy after a change of control is subject to a "best-after-tax" provision. The best-after-tax provision provides that if the change of control payment due to Mr. Abernethy would be subject to the excise tax provisions of Section 280G of the Internal Revenue Code, the Company may reduce the change of control payments to Mr. Abernethy if, after all applicable taxes, the final payments would be larger than if the change of control payments were not reduced and therefor subject to an excise tax. In the event of termination due to disability, Mr. Abernethy is entitled to 12 months of base salary paid semi-monthly over 12 months, a lump sum amount equal to his target annual bonus multiplied by a fraction the numerator of which is the number of full months of employment by Mr. Abernethy in the fiscal year and the denominator of which is 12, an acceleration of unvested shares that would have vested over the 12 continuous months after the date of termination, and payment of COBRA benefits to continue then-current coverage for a period of 12 months following termination. In the event of a termination due to Mr. Abernethy's death, his beneficiaries or estate, would be entitled to an acceleration of unvested shares that would have vested over the 12 continuous months after the date of termination, a lump sum amount equal to his target annual bonus multiplied by a fraction the numerator of which is the number of full months of employment by Mr. Abernethy in the fiscal year and the denominator of which is 12 and any accrued and unpaid compensation on the date of termination.

Mr. Benevich is entitled to 1.0 times the amount of his annual base salary and target annual bonus to be paid equally over 12 months, an acceleration of unvested shares that would have vested over the 12 continuous months after the date of termination, and payment of COBRA benefits to continue then-current coverage for a period of 12 months following termination in the event that the Company terminates his employment without cause, or he resigns due to a constructive termination. In the event of such termination within six months after the consummation of a change of control, Mr. Benevich is entitled to 1.5 times the amount of his annual base salary and annual target bonus to be paid in one lump sum, a cash amount equal to the value of all unvested stock awards and all vested and outstanding stock awards, and payment of COBRA benefits to continue then-current coverage for a period of 18 months following termination; provided, however, in the event such payment to Mr. Benevich after a change of control is subject to a "best-after-tax" provision. The best-after-tax provision provides that if the change of control payment due to Mr. Benevich would be subject to the excise tax provisions of Section 280G of the Internal Revenue Code, the Company may reduce the change of control payments to Mr. Benevich if, after all applicable taxes, the final payments would be larger than if the change of control payments were not reduced and therefor subject to an excise tax. In the event of termination due to disability, Mr. Benevich is entitled to 12 months of base salary paid semi-monthly over 12 months, a lump sum amount equal to his target annual bonus multiplied by a fraction the numerator of which is the number of full months of employment by Mr. Benevich in the fiscal year and the denominator of which is 12, an acceleration of unvested shares that would have vested over the 12 continuous months after the date of termination, and payment of COBRA benefits to continue then-current coverage for a period of 12 months following termination. In the event of a termination due to Mr. Benevich's death, his beneficiaries or estate, would be entitled to an acceleration of unvested shares that would have vested over the 12 continuous months after the date of termination, a lump sum amount equal to his target annual bonus multiplied by a fraction the numerator of which is the number of full months of employment by Mr. Benevich in the fiscal year and the denominator of which is 12 and any accrued and unpaid compensation on the date of termination.

Dr. Gano is entitled to 1.0 times the amount of his annual base salary and target annual bonus to be paid equally over 12 months, an acceleration of unvested shares that would have vested over the 12 continuous

months after the date of termination, and payment of COBRA benefits to continue then-current coverage for a period of 12 months following termination in the event that the Company terminates his employment without cause, or he resigns due to a constructive termination. In the event of such termination within six months after the consummation of a change of control, Dr. Gano is entitled to 1.5 times the amount of his annual base salary and annual target bonus to be paid in one lump sum, a cash amount equal to the value of all unvested stock awards and all vested and outstanding stock awards, and payment of COBRA benefits to continue then-current coverage for a period of 18 months following termination; provided, however, in the event such payment to Dr. Gano after a change of control is subject to a "best-after-tax" provision. The best-after-tax provision provides that if the change of control payment due to Dr. Gano would be subject to the excise tax provisions of Section 280G of the Internal Revenue Code, the Company may reduce the change of control payments to Dr. Gano if, after all applicable taxes, the final payments would be larger than if the change of control payments were not reduced and therefor subject to an excise tax. In the event of termination due to disability, Dr. Gano is entitled to 12 months of base salary paid semi-monthly over 12 months, a lump sum amount equal to his target annual bonus multiplied by a fraction the numerator of which is the number of full months of employment by Dr. Gano in the fiscal year and the denominator of which is 12, an acceleration of unvested shares that would have vested over the 12 continuous months after the date of termination, and payment of COBRA benefits to continue then-current coverage for a period of 12 months following termination. In the event of a termination due to Dr. Gano's death, his beneficiaries or estate, would be entitled to an acceleration of unvested shares that would have vested over the 12 continuous months after the date of termination, a lump sum amount equal to his target annual bonus multiplied by a fraction the numerator of which is the number of full months of employment by Dr. Gano in the fiscal year and the denominator of which is 12 and any accrued and unpaid compensation on the date of termination.

Dr. Roberts is entitled to 1.0 times the amount of her annual base salary and target annual bonus to be paid equally over 12 months, an acceleration of unvested shares that would have vested over the 12 continuous months after the date of termination, and payment of COBRA benefits to continue then-current coverage for a period of 12 months following termination in the event that the Company terminates her employment without cause, or she resigns due to a constructive termination. In the event of such termination within six months after the consummation of a change of control, Dr. Roberts is entitled to 1.5 times the amount of her annual base salary and annual target bonus to be paid in one lump sum, a cash amount equal to the value of all unvested stock awards and all vested and outstanding stock awards, and payment of COBRA benefits to continue then-current coverage for a period of 18 months following termination; provided, however, in the event such payment to Dr. Roberts after a change of control is subject to a "best-after-tax" provision. The best-after-tax provision provides that if the change of control payment due to Dr. Roberts would be subject to the excise tax provisions of Section 280G of the Internal Revenue Code, the Company may reduce the change of control payments to Dr. Roberts if, after all applicable taxes, the final payments would be larger than if the change of control payments were not reduced and therefor subject to an excise tax. In the event of termination due to disability, Dr. Roberts is entitled to 12 months of base salary paid semi-monthly over 12 months, a lump sum amount equal to her target annual bonus multiplied by a fraction the numerator of which is the number of full months of employment by Dr. Roberts in the fiscal year and the denominator of which is 12, an acceleration of unvested shares that would have vested over the 12 continuous months after the date of termination, and payment of COBRA benefits to continue then-current coverage for a period of 12 months following termination. In the event of a termination due to Dr. Roberts's death, her beneficiaries or estate, would be entitled to an acceleration of unvested shares that would have vested over the 12 continuous months after the date of termination, a lump sum amount equal to her target annual bonus multiplied by a fraction the numerator of which is the number of full months of employment by Dr. Roberts in the fiscal year and the denominator of which is 12 and any accrued and unpaid compensation on the date of termination.

CEO PAY RATIO

In order to reflect our employee compensation practices, we have calculated the annual base salary of our median employee while taking only annual base salary into account, as well as the ratio of the base salary of our CEO as compared to the annual base salary of such median employee. In calculating the annual base salary of our median employee we used the applicable methodology listed above. For fiscal 2018, the median of the annual base salary of our employees (other than our CEO) was $133,120, and the annual base salary of our CEO, Kevin C. Gorman, Ph.D., as reported in the Summary Compensation Table included in this Proxy Statement, was $675,000. Based on this information, the ratio of the annual base salary of our CEO to the median of the annual base salary of all employees (other than the CEO) was approximately 5 to 1.

In addition to the information above, under SEC rules, we are required to calculate and disclose the annual total compensation of our median employee, as well as the ratio of the annual total compensation of our median employee as compared to the annual total compensation of our CEO ("CEO Pay Ratio"). To identify our median employee, we used the following methodology:

- To determine our total population of employees, we included all full-time and part-time as of December 31, 2018.
- To identify our median employee from our employee population, we calculated the aggregate amount of each employee's fiscal 2018 base salary (using a reasonable estimate of the hours worked and overtime actually paid during fiscal 2018 for hourly employees and actual salary paid for our remaining employees) and bonuses attributable to fiscal 2018 performance and the grant date fair value of equity awards granted in fiscal 2018 using the same methodology we use for estimating the value of the equity awards granted to our named executive officers and reported in our Summary Compensation Table.
- In making this determination, we annualized the base salary and target bonus compensation of employees who were employed by us for less than the entire fiscal year.

For fiscal 2018, the median of the annual total compensation of our employees (other than our CEO) was $259,000 and the annual total compensation of our CEO, Kevin C. Gorman, Ph.D., as reported in the Summary Compensation Table included in this Proxy Statement, was $8,632,979. Based on this information, the ratio of the annual total compensation of our CEO to the median of the annual total compensation of all employees was approximately 33 to 1.

The CEO Pay Ratio above represents our reasonable estimate calculated in a manner consistent with SEC rules and applicable guidance. SEC rules and guidance provide significant flexibility in how companies identify the median employee, and each company may use a different methodology and make different assumptions particular to that company. As a result, and as explained by the SEC when it adopted these rules, in considering the pay ratio disclosure, stockholders should keep in mind that the rule was not designed to facilitate comparisons of pay ratios among different companies, even companies within the same industry, but rather to allow stockholders to better understand and assess each particular company's compensation practices and pay ratio disclosures.

Neither the Compensation Committee nor our management used our CEO Pay Ratio measure in making compensation decisions.

DIRECTORS COMPENSATION SUMMARY

Non-Employee Director Compensation Philosophy

Our non-employee director compensation philosophy is based on the following guiding principles:

- Aligning the long-term interests of stockholders and directors; and
- Compensating directors appropriately and adequately for their time, effort and experience.

The elements of director compensation consist of annual cash retainers and equity awards, as well as customary and usual expense reimbursement in attending Board or Committee meetings. In an effort to align the long-term interests of our stockholders and non-employee directors, the mix of cash and equity compensation has historically been, and is currently, weighted more heavily to equity. The equity compensation has historically taken the form of stock options, which we believe motivates the non-employee directors to help us achieve our business objectives by tying incentives to the appreciation of our common stock over the long term.

The Board and the Company's stockholders approved certain annual limits on compensation to be paid to the Company's non-employee directors, beginning with our 2016 annual meeting of stockholders. The aggregate value of all compensation granted or paid, as applicable, to any individual for service as a non-employee director will not exceed $1,250,000 in total value during any year, measured from our annual meeting of stockholders for a particular year and ending on the date of our annual meeting of stockholders for the subsequent year. In addition, the aggregate value of the initial option grant or other similar stock awards granted under the 2011 Plan or otherwise to any individual for service as a non-employee director upon or in connection with his or her initial election or appointment to the Board will not exceed $2,000,000 in total value. These limits are further described in our 2011 Plan. The Board has the authority to make exceptions to these limits in extraordinary circumstances, in its discretion, provided that any non-employee director who is granted or paid such additional compensation may not participate in the decision to grant or pay such additional compensation. No exceptions were made in 2018.

Our Compensation Committee regularly assesses our non-employee director compensation program in consultation with its independent compensation consultant, who provides analysis and input on prevailing market practices, and recommends any changes to the program to our Board, who ultimately approves non-employee director compensation. On at least an annual basis, qualified experts in the field of non-employee director compensation also deliver a presentation to the Compensation Committee about recent developments and best practices related to non-employee director compensation.

The 2018 compensation for the Company's non-employee directors was recommended by the Compensation Committee to the Board following the review of a report from Radford, its independent compensation consultant during 2018, which contained an analysis of prevailing market practices regarding levels and types of non-employee director compensation, including the non-employee director compensation practices of our peer group, which is described in the "Compensation Discussion and Analysis" section of this proxy statement, and a comparative assessment of our non-employee director compensation to such peers and market practices. In 2018, the Compensation Committee also received a presentation from Radford about recent developments and best practices related to non-employee directors to inform its analysis of, and recommendations regarding, non-employee director compensation. In 2018 the Board approved certain adjustments to cash compensation of certain committee Chairs and members based primarily on an increase in the number of meetings that certain committees had as compared to prior years. In addition, the Board approved a decrease in the number of shares subject to the annual option granted to each non-employee director at the 2018 Annual Meeting of Stockholders and the initial option granted each non-employee director upon his or her initial election or appointment to the Board.

In formulating its recommendations to the Board for 2018, the Compensation Committee did not engage in benchmarking or targeting compensation to a specific level of the peer group data provided by Radford, but

rather used the peer data as a reference point in making non-employee director compensation recommendations. The Compensation Committee determined that the equity awards granted to non-employee directors should consist of stock options rather than time-vesting RSU grants. It is the Compensation Committee's view that stock options are inherently performance oriented and align the interest of the non-employee directors with those of our stockholders, as the non-employee director realizes no value from stock options unless and until the Company's stock price increases. Ultimately, the Board set 2018 non-employee director compensation in the forms and amounts it determined to be appropriate using its professional experience and judgment, after careful review of the Radford analysis and the Compensation Committee's recommendations. Our director compensation for fiscal 2018 is described below.

Non-Employee Director Compensation for Fiscal 2018

Non-employee directors are reimbursed for expenses incurred in connection with performing their duties as directors of the Company. For 2018, directors who are not employees of the Company received a $50,000 annual retainer. The Company provided the Chair of the Board, William H. Rastetter, an additional $30,000, making his total annual cash retainer $80,000. In addition to the cash compensation set forth above, the Chairs of the Audit Committee and Compensation Committee each received an additional $20,000 annual cash retainer. The Chair of the Nominating/Corporate Governance Committee received an additional $10,000 annual cash retainer, and the Chair of the Science and Medical Technology Committee received an additional $15,000 annual cash retainer. Each other director who was a member of the Audit Committee, the Compensation Committee, the Nominating/ Corporate Governance Committee or the Science and Medical Technology Committee received an additional annual cash retainer of $12,000, $12,000, $5,000 and $7,500, respectively, for each Committee on which she or he served.

Additionally, for 2018, each non-employee director received a grant of a nonstatutory stock option to purchase 12,500 shares of the Company's common stock (except that the Chair of the Board received an option to purchase 15,000 shares) on the date of the 2018 Annual Meeting of Stockholders. The options granted to non-employee directors have exercise prices equal to the closing price of the Company's common stock on the date of the grant, are subject to a ten-year term and vest monthly over the one-year period following the date of grant.

Although we did not have any new non-employee directors during 2018, any non-employee director who is first elected or appointed to the Board would receive a grant of a nonstatutory stock option to purchase shares of the Company's common stock. The initial option would be granted upon such director's initial election or appointment to the Board, have an exercise price equal to the closing price of the Company's common stock on the date of grant, a ten-year maximum term and vest monthly over the three-year period following the date of grant.

The following table sets forth the compensation paid by the Company for the fiscal year ended December 31, 2018 to the directors of the Company named below:

Director Compensation Table

Name	Fees Earned or Paid in Cash (1)	Option Awards (2)	Total
Kevin C. Gorman, Ph.D. (3)	$ —	$ —	$ —
William H. Rastetter, Ph.D. (4)	$87,500	$786,300	$873,800
Gary A. Lyons (5)	$57,500	$655,250	$712,750
George J. Morrow (6)	$75,000	$655,250	$730,250
Corinne H. Nevinny (7)	$82,000	$655,250	$737,250
Richard F. Pops (8)	$82,000	$655,250	$737,250
Alfred W. Sandrock, Jr., M.D. Ph.D. (9)	$78,000	$655,250	$733,250
Stephen A. Sherwin, M.D. (10)	$77,333	$655,250	$732,583

(1) Amounts in this column reflect compensation earned in 2018, all of which was paid during 2018.

(2) The amounts shown represent the full grant date fair value of option awards granted in 2018 as determined pursuant to ASC 718. The assumptions used to calculate the value of such awards are set forth under Note 8 of the Notes to the Consolidated Financial Statements included in the Company's Annual Report on Form 10-K for the year ended December 31, 2018. The grant date fair values of all option awards are based on a per share Black-Scholes value of $52.42.

(3) During 2018, Dr. Gorman was an employee of the Company, and as such, did not receive any compensation for service on the Board of Directors. As of December 31, 2018, Dr. Gorman had outstanding options to purchase 1,125,944 shares of common stock, and 115,050 outstanding restricted stock units.

(4) As of December 31, 2018, Dr. Rastetter had outstanding options to purchase 141,000 shares of common stock.

(5) As of December 31, 2018, Mr. Lyons had outstanding options to purchase 112,500 shares of common stock.

(6) As of December 31, 2018, Mr. Morrow had outstanding options to purchase 82,500 shares of common stock.

(7) Ms. Nevinny resigned from the Board of Directors in September 2018. As of December 31, 2018, Ms. Nevinny had outstanding options to purchase 88,125 shares of common stock.

(8) As of December 31, 2018, Mr. Pops had outstanding options to purchase 112,500 shares of common stock.

(9) As of December 31, 2018, Dr. Sandrock had outstanding options to acquire 82,500 shares of common stock.

(10) As of December 31, 2018, Dr. Sherwin had outstanding options to purchase 112,500 shares of common stock.

Equity Ownership Guidelines

In August 2018, the Board of Directors implemented equity ownership guidelines for our non-employee directors. The equity ownership guidelines are designed to further align the interests of the non-employee directors with those of our stockholders by ensuring that our non-employee directors have a significant financial stake in the Company's long-term success. The equity ownership guidelines establish a minimum equity ownership equal to one times the cash retainer paid to the non-employee director, with such values determined based on the value of our common stock owned by such persons as of certain measurement dates. All shares directly or beneficially owned by the non-employee director, including the net exercisable value of outstanding vested stock options (where the market price of our common stock exceeds the strike price of such option) are included in determining the value of equity owned under our equity ownership guidelines. New non-employee directors are granted a five-year period to reach the equity ownership requirements set forth in the guidelines and

are expected to make annual progress toward the equity ownership requirements during this five-year period. When a non-employee director does not meet the equity ownership requirements set forth in the guidelines, he/she is restricted from selling any held shares until such requirements are met. Additionally, should non-employee director who does not meet the equity ownership requirements choose to exercise a stock option or vest in any RSUs, he or she is required to retain all shares acquired through those transactions, aside from any shares necessary to fulfill such transaction related tax obligations, until full compliance with the equity ownership guidelines is attained.

Annual compliance with the equity ownership guidelines is assessed during the first quarter of each year. As of March 1, 2019, each of our non-employee directors is in compliance with the equity ownership guidelines.

Additional Information

Executive officers of the Company serve at the discretion of the Board of Directors. There are no family relationships among any of the directors, executive officers or key employees of the Company. None of our directors or executive officers has been involved in any of the legal proceedings specified in Item 401(f) of Regulation S-K in the past 10 years.

RELATED PERSON TRANSACTIONS

Review, Approval or Ratification of Related Person Transactions

In accordance with the Company's Audit Committee Charter, the Company's Audit Committee is responsible for reviewing and approving the terms and conditions of all related person transactions. In connection with its review, approval or ratification of related person transactions, the Company's Audit Committee takes into account all relevant available facts and circumstances in determining whether such transaction is in the best interests of the Company and its stockholders. Any transaction that would disqualify a director from meeting the "independent director" standard as defined under the Nasdaq Stock Market rules requires review by the Company's Audit Committee prior to entering into such transaction. For all other related person transactions, the Company reviews all agreements and payments for related person transactions and based on this review, a report is made to the Company's Audit Committee quarterly disclosing all related person transactions during that quarter, if any. All related person transactions shall be disclosed in the Company's applicable filings with the SEC as required under SEC rules.

Related Person Transactions During Fiscal 2018

There were no related person transactions during fiscal 2018.

OTHER MATTERS

As of the date of this proxy statement, the Company knows of no other matters to be submitted to the stockholders at the Annual Meeting. If any other matters properly come before the Annual Meeting, it is the intention of the persons named in the proxy to vote the shares they represent as the Board of Directors may recommend.

ADDITIONAL INFORMATION

"Householding" of Proxy Materials. The SEC has adopted rules that permit companies and intermediaries such as brokers to satisfy delivery requirements for proxy statements with respect to two or more stockholders sharing the same address by delivering a single set of proxy materials addressed to those stockholders. This process, which is commonly referred to as "householding," potentially provides extra convenience for stockholders and cost savings for companies. The Company, as well as certain brokers, household proxy materials, unless contrary instructions have been received from the affected stockholders. Once you have received notice from your broker or us that they or we will be householding materials 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 set of proxy materials, please notify your broker if your shares are held in a brokerage account or us if you hold registered shares. If you hold registered shares, you may direct your written request to the Company's Corporate Secretary at 12780 El Camino Real, San Diego, California 92130 or contact the Company's Corporate Secretary at 858-617-7600.

Advance Notice Procedures. To be considered for inclusion in next year's proxy materials, a stockholder must submit his, her or its proposal in writing by December 24, 2019, which is the date that is 120 days prior to the first anniversary of the mailing date of this proxy statement, to the Company's Corporate Secretary at 12780 El Camino Real, San Diego, California 92130. Any proposal must comply with the requirements as to form and substance established by the SEC for such proposal to be included in our proxy statement. Stockholders are also advised to review our bylaws, which contain additional requirements about advance notice of stockholder proposals and director nominations.

Appendix A

NEUROCRINE BIOSCIENCES, INC.

2011 EQUITY INCENTIVE PLAN

ADOPTED BY THE BOARD OF DIRECTORS: FEBRUARY 21, 2011
APPROVED BY THE STOCKHOLDERS: MAY 25, 2011
AMENDED BY THE STOCKHOLDERS: MAY 23, 2013
AMENDED BY THE STOCKHOLDERS: MAY 22, 2014
AMENDED BY THE STOCKHOLDERS: MAY 28, 2015
AMENDED BY THE STOCKHOLDERS: MAY 20, 2016
AMENDED BY THE STOCKHOLDERS: MAY 22, 2017
AMENDED BY THE STOCKHOLDERS: MAY 24, 2018
AMENDED BY THE STOCKHOLDERS: , 2019
TERMINATION DATE: FEBRUARY 20, 2021

1. GENERAL.

(a) Successor to and Continuation of Prior Plans. The Plan is intended as the successor to and continuation of the Neurocrine Biosciences, Inc. 2003 Incentive Stock Plan, 2001 Stock Option Plan, 1997 Incentive Stock Plan, 1996 Director Stock Option Plan and 1992 Incentive Stock Plan (together the "***Prior Plans***"). On the Effective Date, awards will automatically be granted to the Company's Directors pursuant to the terms of Section 10 of the Neurocrine Biosciences, Inc. 2003 Incentive Stock Plan (the "***2011 Automatic Director Awards***"). From and following the Effective Date, no additional stock awards shall be granted under the Prior Plans except for the 2011 Automatic Director Awards. From and after the Effective Date, all outstanding stock awards granted under the Prior Plans shall remain subject to the terms of the Prior Plans; provided, however, any shares subject to outstanding stock awards granted under the Prior Plans that expire or terminate for any reason prior to exercise or settlement or are otherwise forfeited prior to issuance of the shares because of the failure to meet a contingency or condition required to vest such shares shall not again become available for issuance under either the Prior Plans or this Plan. Except with respect to the 2011 Automatic Director Awards, all Awards granted on or after the Effective Date of this Plan shall be subject to the terms of this Plan.

(b) Eligible Award Recipients. The persons eligible to receive discretionary Awards are Employees, Directors and Consultants. The persons eligible to receive Stock Awards under the Director Grant Program are Eligible Directors.

(c) Available Awards. The Plan provides for the grant of the following Awards: (i) Incentive Stock Options, (ii) Nonstatutory Stock Options, (iii) Stock Appreciation Rights (iv) Restricted Stock Awards, (v) Restricted Stock Unit Awards, (vi) Performance Stock Awards, and (vii) Other Stock Awards.

(d) Purpose. The Company, by means of the Plan, seeks to secure and retain the services of the group of persons eligible to receive Awards as set forth in Section 1(b), to provide incentives for such persons to exert maximum efforts for the success of the Company and any Affiliate and to provide a means by which such eligible recipients may be given an opportunity to benefit from increases in value of the Common Stock through the granting of Awards.

(e) Section 162(m) Transition Relief. Notwithstanding anything in the Plan to the contrary:

(i) any provision in the Plan that refers to "performance-based compensation" under Section 162(m) of the Code will only apply to any Award that is intended to qualify, and is eligible to qualify, as "performance-based compensation" under Section 162(m) of the Code pursuant to the transition relief provided by the Tax Cuts and Jobs Act (the "***TCJA***") for remuneration provided pursuant to a written binding contract which was in effect

on November 2, 2017 and which was not modified in any material respect on or after such date (the "***Transition Relief***"), as determined by the Board, in its sole discretion, in accordance with the TCJA and any applicable guidance, rulings or regulations issued by the U.S. Department of the Treasury, the Internal Revenue Service or any other governmental authority (collectively, the "***TCJA Guidance***") (each such Award, a "***162(m) Award***");

(ii) any Award (including any 162(m) Award) that was granted prior to May 22, 2019 will be subject to and governed by the terms of the Plan, as in effect on the date of grant of such Award (or as in effect on the date of any subsequent amendment of the Plan, to the extent applicable, but no later than November 2, 2017 with respect to any 162(m) Award and no later than May 23, 2018 with respect to any Award that is not a 162(m) Award); *provided, however*, that any such terms which refer to a subsection of Section 162(m) of the Code (or any regulations thereunder) will mean such subsection (or any regulations thereunder) as in effect on December 31, 2017 (or with respect to any Award that is not a 162(m) Award, as amended by the TCJA or any TCJA Guidance and as in effect on January 1, 2018 (or as subsequently amended thereafter), to the extent applicable); and

(iii) any Award (including any 162(m) Award) that is granted on or after May 22, 2019 will be subject to and governed by the terms of the Plan, as in effect on May 22, 2019 (or as in effect on the date of any subsequent amendment of the Plan, to the extent applicable, provided that with respect to any 162(m) Award, no such subsequent amendment will be effective if it would result in such 162(m) Award not being able to qualify for the Transition Relief); *provided, however*, that (a) with respect to any 162(m) Award, any such terms which refer to a subsection of Section 162(m) of the Code (or any regulations thereunder) will mean such subsection (or any regulations thereunder) as in effect on December 31, 2017, and (b) with respect to any Award that is not a 162(m) Award, any such terms which refer to a subsection of Section 162(m) of the Code (or any regulations thereunder) will mean such subsection (or any regulations thereunder), as amended by the TCJA or any TCJA Guidance and as in effect on January 1, 2018 (or as subsequently amended thereafter), to the extent applicable.

2. ADMINISTRATION.

(a) Administration by Board. The Board shall administer the Plan unless and until the Board delegates administration of the Plan to a Committee or Committees, as provided in Section 2(d). However, the Board may not delegate administration of the Director Grant Program.

(b) Powers of Board. Except with respect to the Director Grant Program, the Board shall have the power, subject to, and within the limitations of, the express provisions of the Plan:

(i) To determine from time to time (A) which of the persons eligible under the Plan shall be granted Awards; (B) when and how each Award shall be granted; (C) what type or combination of types of Award shall be granted; (D) the provisions of each Award granted (which need not be identical), including the time or times when a person shall be permitted to receive cash or Common Stock pursuant to an Award; (E) the number of shares of Common Stock with respect to which a Stock Award shall be granted to each such person; and (F) the Fair Market Value applicable to a Stock Award.

(ii) To construe and interpret the Plan and Awards granted under it, and to establish, amend and revoke rules and regulations for its administration. The Board, in the exercise of this power, may correct any defect, omission or inconsistency in the Plan or in any Stock Award Agreement in a manner and to the extent it shall deem necessary or expedient to make the Plan or Award fully effective.

(iii) To settle all controversies regarding the Plan and Awards granted under it.

(iv) To accelerate the time at which an Award may first be exercised or the time during which an Award or any part thereof will vest in accordance with the Plan, notwithstanding the provisions in the Award stating the time at which it may first be exercised or the time during which it will vest.

(v) To suspend or terminate the Plan at any time. Suspension or termination of the Plan shall not impair rights and obligations under any Award granted while the Plan is in effect except with the written consent of the affected Participant.

(vi) To amend the Plan in any respect the Board deems necessary or advisable. However, except as provided in Section 10(a) relating to Capitalization Adjustments, to the extent required by applicable law or listing requirements, stockholder approval shall be required for any amendment of the Plan that either (A) materially increases the number of shares of Common Stock available for issuance under the Plan, (B) materially expands the class of individuals eligible to receive Awards under the Plan, (C) materially increases the benefits accruing to Participants under the Plan or materially reduces the price at which shares of Common Stock may be issued or purchased under the Plan, (D) materially extends the term of the Plan, or (E) expands the types of Awards available for issuance under the Plan. Except as provided above, rights under any Award granted before amendment of the Plan shall not be impaired by any amendment of the Plan unless (1) the Company requests the consent of the affected Participant, and (2) such Participant consents in writing.

(vii) To submit any amendment to the Plan for stockholder approval, including, but not limited to, amendments to the Plan intended to satisfy the requirements of (A) Section 162(m) of the Code regarding the exclusion of performance-based compensation from the limit on corporate deductibility of compensation paid to Covered Employees, (B) Section 422 of the Code regarding incentive stock options or (C) Rule 16b-3.

(viii) To approve forms of Award Agreements for use under the Plan and to amend the terms of any one or more Awards, including, but not limited to, amendments to provide terms more favorable to the Participant than previously provided in the Award Agreement, subject to any specified limits in the Plan that are not subject to Board discretion; provided however, that except with respect to amendments that disqualify or impair the status of an Incentive Stock Option, a Participant's rights under any Award shall not be impaired by any such amendment unless (A) the Company requests the consent of the affected Participant, and (B) such Participant consents in writing. Notwithstanding the foregoing, subject to the limitations of applicable law, if any, the Board may amend the terms of any one or more Awards without the affected Participant's consent if necessary to maintain the qualified status of the Award as an Incentive Stock Option or to bring the Award into compliance with Section 409A of the Code.

(ix) Generally, to exercise such powers and to perform such acts as the Board deems necessary or expedient to promote the best interests of the Company and that are not in conflict with the provisions of the Plan or Awards.

(x) To adopt such procedures and sub-plans as are necessary or appropriate to permit participation in the Plan by Employees, Directors or Consultants who are foreign nationals or employed outside the United States.

(c) Administration of Director Grant Program. The Board shall have the power, subject to and within the limitations of, the express provisions of the Director Grant Program:

(i) To determine the provisions of each Stock Award to the extent not specified in the Director Grant Program.

(ii) To construe and interpret the Director Grant Program and the Stock Awards granted under it, and to establish, amend and revoke rules and regulations for its administration. The Board, in the exercise of this power, may correct any defect, omission or inconsistency in the Director Grant Program or in any Stock Award Agreement, in a manner and to the extent it shall deem necessary or expedient to make the Director Grant Program fully effective.

(iii) To amend the terms of the Director Grant Program or a Stock Award granted thereunder, except that rights under any such Stock Award granted before amendment of the Director Grant Program shall not be impaired by any amendment of the Director Grant Program unless (1) the Company requests the consent of the affected Participant, and (2) such Participant consents in writing.

(iv) Generally, to exercise such powers and to perform such acts as the Board deems necessary or expedient to promote the best interests of the Company and that are not in conflict with the provisions of the Director Grant Program.

(d) Delegation to Committee.

(i) General. The Board may delegate some or all of the administration of the Plan (except the Director Grant Program) to a Committee or Committees. If administration of the Plan is delegated to a Committee, the Committee shall have, in connection with the administration of the Plan, the powers theretofore possessed by the Board that have been delegated to the Committee, including the power to delegate to a subcommittee of the Committee any of the administrative powers the Committee is authorized to exercise (and references in this Plan to the Board shall thereafter be to the Committee or subcommittee), subject, however, to such resolutions, not inconsistent with the provisions of the Plan, as may be adopted from time to time by the Board. The Committee may, at any time, abolish the subcommittee and/or revest in the Committee any powers delegated to the subcommittee. The Board may retain the authority to concurrently administer the Plan with the Committee and may, at any time, revest in the Board some or all of the powers previously delegated.

(ii) Section 162(m) and Rule 16b-3 Compliance. The Committee may consist solely of two or more Outside Directors, in accordance with Section 162(m) of the Code, or solely of two or more Non-Employee Directors, in accordance with Rule 16b-3.

(e) Delegation to an Officer. The Board may delegate to one (1) or more Officers the authority to do one or both of the following (i) designate Employees who are providing Continuous Service to the Company or any of its Subsidiaries who are not Officers to be recipients of Options and SARs (and, to the extent permitted by applicable law, other Stock Awards) and the terms thereof, and (ii) determine the number of shares of Common Stock to be subject to such Stock Awards granted to such Employees; provided, however, that the Board resolutions regarding such delegation shall specify the total number of shares of Common Stock that may be subject to the Stock Awards granted by such Officer and that such Officer may not grant a Stock Award to himself or herself. Notwithstanding the foregoing, the Board may not delegate authority to an Officer to determine the Fair Market Value pursuant to Section 14(z)(iii) below.

(f) Effect of Board's Decision. All determinations, interpretations and constructions made by the Board in good faith shall not be subject to review by any person and shall be final, binding and conclusive on all persons.

(g) Cancellation and Re-Grant of Stock Awards. Except in connection with a Corporate Transaction, as provided in Section 10(a) relating to Capitalization Adjustments, or unless the stockholders of the Company have approved such an action within twelve (12) months prior to such an event, neither the Board nor any Committee shall have the authority to: (i) reduce the exercise price of any outstanding Options or SARs under the Plan, or (ii) cancel any outstanding Options or SARs that have an exercise price or strike price greater than the current Fair Market Value of the Common Stock in exchange for cash, Full Value Awards, or Options or SARs with an exercise price less than the original exercise price of the Options or SARs that are cancelled.

3. SHARES SUBJECT TO THE PLAN.

(a) Share Reserve. Subject to Section 10(a) relating to Capitalization Adjustments, the aggregate number of shares of Common Stock that may be issued pursuant to Stock Awards from and after the Effective Date shall not exceed twenty-one million (21,000,000) shares. For clarity, the Share Reserve in this Section 3(a) is a limitation on the number of shares of the Common Stock that may be issued pursuant to the Plan and does not limit the granting of Stock Awards except as provided in Section 8(a). Shares may be issued in connection with a merger or acquisition as permitted by, as applicable, NASDAQ Listing Rule 5635(c) or, if applicable, NYSE Listed Company Manual Section 303A.08, AMEX Company Guide Section 711 or other applicable rule, and such issuance shall not reduce the number of shares available for issuance under the Plan. Furthermore, if a Stock Award or any portion thereof expires or otherwise terminates without all of the shares covered by such Stock Award having been issued, such expiration or termination shall not reduce (or otherwise offset) the number of shares of Common Stock that may be available for issuance under the Plan.

(b) Reversion of Shares to the Share Reserve. If any shares of common stock issued pursuant to a Stock Award are forfeited back to the Company because of the failure to meet a contingency or condition required to vest such shares in the Participant, then the shares that are forfeited shall revert to and again become available for issuance under the Plan.

(c) Limitation on Full Value Awards. The aggregate number of shares of Common Stock that may be issued pursuant to grants of Full Value Awards shall not exceed fifty percent (50%) of the aggregate number of shares of Common Stock available for issuance under this Plan as set forth in Section 3(a), subject to adjustment as provided in Sections 3(b) and 10(a).

(d) Shares Not Available For Subsequent Issuance. If any shares subject to a Stock Award are not delivered to a Participant because the Stock Award is exercised through a reduction of shares subject to the Stock Award (i.e., "***net exercised***"), the number of shares that are not delivered to the Participant shall no longer be available for issuance under the Plan. Also, any shares used to pay the exercise price of a Stock Award or that are withheld in satisfaction of applicable tax withholding obligations shall no longer be available for issuance under the Plan. Any shares repurchased on the open market with the proceeds of the exercise price of a Stock Award shall not again be available for issuance under the Plan.

(e) Incentive Stock Option Limit. Notwithstanding anything to the contrary in this Section 3 and, subject to the provisions of Section 10(a) relating to Capitalization Adjustments, the aggregate maximum number of shares of Common Stock that may be issued pursuant to the exercise of Incentive Stock Options shall be twenty-one] million (21,000,000) shares of Common Stock.

(f) Section 162(m) Limitation on Annual Grants. Subject to the provisions of Section 10(a) relating to Capitalization Adjustments, at such time as the Company may be subject to the applicable provisions of Section 162(m) of the Code, a maximum of five hundred thousand (500,000) shares of Common Stock subject to Options, SARs and Other Stock Awards whose value is determined by reference to an increase over an exercise or strike price of at least one hundred percent (100%) of the Fair Market Value on the date any such Stock Award is granted may be granted to any Participant during any calendar year; provided, however that in connection with his or her initial employment, an Employee may be granted such forms of Stock Awards for up to an additional five hundred thousand (500,000) shares of Common Stock which shall not count against such annual limit. Notwithstanding the foregoing, if any additional Options, SARs or Other Stock Awards whose value is determined by reference to an increase over an exercise or strike price of at least one hundred percent (100%) of the Fair Market Value on the date the Stock Award are granted to any Participant during any calendar year, compensation attributable to the exercise of such additional Stock Awards shall not satisfy the requirements to be considered "qualified performance-based compensation" under Section 162(m) of the Code unless such additional Stock Awards are approved by the Company's stockholders.

(g) Non-Employee Director Compensation Limit. The aggregate value of all compensation granted or paid, as applicable, to any individual for service as a Non-Employee Director with respect to any period commencing on the date of the Company's regular Annual Meeting for a particular year and ending on the date of the Company's regular Annual Meeting for the next subsequent year (the "***Annual Period***"), including Awards granted and cash fees paid by the Company to such Non-Employee Director, will not exceed one million two hundred fifty thousand dollars ($1,250,000) in total value. In addition, the aggregate value of the Initial Award(s) (or other similar stock award(s) granted under the Plan or otherwise to any individual for service as a Non-Employee Director upon or in connection with his or her initial election or appointment to the Board) will not exceed two million dollars ($2,000,000) in total value; for the avoidance of doubt, the aggregate compensation granted or paid, as applicable, to any individual for service as a Non-Employee Director with respect to an Annual Period in which such individual is first appointed or elected to the Board shall not exceed the sum of the two preceding limitations in this Section 3(g). The value of any stock awards, for purposes of the limitations described in this Section 3(g), shall be calculated based on the grant date fair value of such stock awards for financial reporting purposes. The limitations in this Section 3(g) shall apply beginning with the

Annual period in which the Company's 2016 Annual Meeting occurs. The Board may make an exception to the applicable limit in this Section 3(g) for any Non-Employee Director in extraordinary circumstances, as the Board may determine in its discretion, provided that any Non-Employee Director who is granted or paid such additional compensation may not participate in the decision to grant or pay such additional compensation.

(h) Source of Shares. The stock issuable under the Plan shall be shares of authorized but unissued or reacquired Common Stock, including shares repurchased by the Company on the open market or otherwise; provided, however that the Company may not repurchase shares to be used under this Plan to the extent such repurchased shares would exceed the limitation in Section 3(a).

4. ELIGIBILITY.

(a) Eligibility for Specific Stock Awards. Incentive Stock Options may be granted only to employees of the Company or a "parent corporation" or "subsidiary corporation" thereof (as such terms are defined in Sections 424(e) and (f) of the Code). Stock Awards other than Incentive Stock Options may be granted to Employees, Directors and Consultants; provided, however, Nonstatutory Stock Options and SARs may not be granted to Employees, Directors and Consultants who are providing Continuous Service only to any "parent" of the Company, as such term is defined in Rule 405 promulgated under the Securities Act, unless the stock underlying such Stock Awards is treated as "service recipient stock" under Section 409A of the Code because the Stock Awards are granted pursuant to a corporate transaction (such as a spin off transaction) or unless such Stock Awards comply with the distribution requirements of Section 409A of the Code. Stock Awards granted under the Director Grant Program in Section 7 may be granted only to Eligible Directors.

(b) Ten Percent Stockholders. A Ten Percent Stockholder shall not be granted an Incentive Stock Option unless the exercise price of such Option is at least one hundred ten percent (110%) of the Fair Market Value on the date of grant and the Option is not exercisable after the expiration of five (5) years from the date of grant.

5. PROVISIONS RELATING TO OPTIONS AND STOCK APPRECIATION RIGHTS.

Each Option or SAR shall be in such form and shall contain such terms and conditions as the Board shall deem appropriate. All Options shall be separately designated Incentive Stock Options or Nonstatutory Stock Options at the time of grant, and, if certificates are issued, a separate certificate or certificates shall be issued for shares of Common Stock purchased on exercise of each type of Option. If an Option is not specifically designated as an Incentive Stock Option, then the Option shall be a Nonstatutory Stock Option. The provisions of separate Options or SARs need not be identical; provided, however, that each Option Agreement or SAR Agreement shall conform to (through incorporation of provisions hereof by reference in the applicable Award Agreement or otherwise) the substance of each of the following provisions:

(a) Term. Subject to the provisions of Section 4(b) regarding Ten Percent Stockholders, no Option or SAR shall be exercisable after the expiration of ten (10) years from the date of its grant or such shorter period specified in the Award Agreement.

(b) Exercise Price. Subject to the provisions of Section 4(b) regarding Ten Percent Stockholders, the exercise price (or strike price) of each Option or SAR shall be not less than one hundred percent (100%) of the Fair Market Value of the Common Stock subject to the Option or SAR on the date the Option or SAR is granted. Notwithstanding the foregoing, an Option or SAR may be granted with an exercise price (or strike price) lower than one hundred percent (100%) of the Fair Market Value of the Common Stock subject to the Option or SAR if such Option or SAR is granted pursuant to an assumption of or substitution for another option or stock appreciation right pursuant to a Corporate Transaction and in a manner consistent with the provisions of Sections 409A and, if applicable, 424(a) of the Code. Each SAR will be denominated in shares of Common Stock equivalents.

(c) Purchase Price for Options. The purchase price of Common Stock acquired pursuant to the exercise of an Option shall be paid, to the extent permitted by applicable law and as determined by the Board in its sole discretion, by any combination of the methods of payment set forth below. The Board shall have the authority to grant Options that do not permit all of the following methods of payment (or otherwise restrict the ability to use certain methods) and to grant Options that require the consent of the Company to utilize a particular method of payment. The permitted methods of payment are as follows:

(i) by cash, check, bank draft or money order payable to the Company;

(ii) pursuant to a program developed under Regulation T as promulgated by the Federal Reserve Board that, prior to the issuance of the stock subject to the Option, results in either the receipt of cash (or check) by the Company or the receipt of irrevocable instructions to pay the aggregate exercise price to the Company from the sales proceeds;

(iii) by delivery to the Company (either by actual delivery or attestation) of shares of Common Stock;

(iv) if the option is a Nonstatutory Stock Option, by a "***net exercise***" arrangement pursuant to which the Company will reduce the number of shares of Common Stock issuable upon exercise by the largest whole number of shares with a Fair Market Value that does not exceed the aggregate exercise price; provided, however, that the Company shall accept a cash or other payment from the Participant to the extent of any remaining balance of the aggregate exercise price not satisfied by such reduction in the number of whole shares to be issued; provided, further, that shares of Common Stock will no longer be subject to an Option and will not be exercisable thereafter to the extent that (A) shares issuable upon exercise are reduced to pay the exercise price pursuant to the "***net exercise,***" (B) shares are delivered to the Participant as a result of such exercise, and (C) shares are withheld to satisfy tax withholding obligations; or

(v) in any other form of legal consideration that may be acceptable to the Board.

(d) Exercise and Payment of a SAR. To exercise any outstanding SAR, the Participant must provide written notice of exercise to the Company in compliance with the provisions of the SAR Agreement evidencing such SAR. The appreciation distribution payable on the exercise of a SAR will be not greater than an amount equal to the excess of (A) the aggregate Fair Market Value (on the date of the exercise of the SAR) of a number of shares of Common Stock equal to the number of Common Stock equivalents in which the Participant is vested under such SAR, and with respect to which the Participant is exercising the SAR on such date, over (B) the strike price that will be determined by the Board at the time of grant of the SAR. The appreciation distribution in respect to a SAR may be paid in Common Stock, in cash, in any combination of the two or in any other form of consideration, as determined by the Board and contained in the SAR Agreement evidencing such SAR.

(e) Transferability of Options and SARs. The Board may, in its sole discretion, impose such limitations on the transferability of Options and SARs as the Board shall determine. In the absence of such a determination by the Board to the contrary, the following restrictions on the transferability of Options and SARs shall apply:

(i) Restrictions on Transfer. An Option or SAR shall not be transferable except by will or by the laws of descent and distribution and shall be exercisable during the lifetime of the Participant only by the Participant. Except as explicitly provided herein, neither an Option nor a SAR may be transferred.

(ii) Domestic Relations Orders. Notwithstanding the foregoing, an Option or SAR may be transferred pursuant to a domestic relations order; provided, however, that if an Option is an Incentive Stock Option, such Option may be deemed to be a Nonstatutory Stock Option as a result of such transfer.

(iii) Beneficiary Designation. Notwithstanding the foregoing, the Participant may, by delivering written notice to the Company, in a form provided by or otherwise satisfactory to the Company and any broker designated by the Company to effect Option exercises, designate a third party who, in the event of the death of the Participant, shall thereafter be entitled to exercise the Option or SAR and receive the Common Stock or other consideration resulting from such exercise. In the absence of such a designation, the executor or administrator of the Participant's estate shall be entitled to exercise the Option or SAR and receive the Common Stock or other consideration resulting from such exercise.

(f) Vesting Generally. The total number of shares of Common Stock subject to an Option or SAR may vest and therefore become exercisable in periodic installments that may or may not be equal. The Option or SAR may be subject to such other terms and conditions on the time or times when it may or may not be exercised (which may be based on the satisfaction of Performance Goals or other criteria) as the Board may deem appropriate. The vesting provisions of individual Options or SARs may vary. The provisions of this Section 5(f) are subject to any Option or SAR provisions governing the minimum number of shares of Common Stock as to which an Option or SAR may be exercised.

(g) Termination of Continuous Service. Except as otherwise provided in the applicable Award Agreement or other agreement between the Participant and the Company, if a Participant's Continuous Service terminates (other than for Cause or upon the Participant's death or Disability), the Participant may exercise his or her Option or SAR (to the extent that the Participant was entitled to exercise such Award as of the date of termination of Continuous Service) but only within such period of time ending on the earlier of (i) the date three (3) months following the termination of the Participant's Continuous Service (or such longer or shorter period specified in the applicable Award Agreement), or (ii) the expiration of the term of the Option or SAR as set forth in the Award Agreement. If, after termination of Continuous Service, the Participant does not exercise his or her Option or SAR within the time specified herein or in the Award Agreement (as applicable), the Option or SAR shall terminate.

(h) Extension of Termination Date. If the exercise of an Option or SAR following the termination of the Participant's Continuous Service (other than for Cause or upon the Participant's death or Disability) would be prohibited at any time solely because the issuance of shares of Common Stock would violate the registration requirements under the Securities Act, then the Option or SAR shall terminate on the earlier of (i) the expiration of a total period of three (3) months (that need not be consecutive) after the termination of the Participant's Continuous Service during which the exercise of the Option or SAR would not be in violation of such registration requirements, or (ii) the expiration of the term of the Option or SAR as set forth in the applicable Award Agreement. In addition, unless otherwise provided in a Participant's Award Agreement, if the immediate sale of any Common Stock received upon exercise of an Option or SAR following the termination of the Participant's Continuous Service (other than for Cause) would violate the Company's insider trading policy, then the Option or SAR shall terminate on the earlier of (i) the expiration of a period equal to the applicable post-termination exercise period after the termination of the Participant's Continuous Service during which the sale of the Common Stock received upon exercise of the Option or SAR would not be in violation of the Company's insider trading policy, or (ii) the expiration of the term of the Option or SAR as set forth in the applicable Award Agreement.

(i) Disability of Participant. Except as otherwise provided in the applicable Award Agreement or other agreement between the Participant and the Company, if a Participant's Continuous Service terminates as a result of the Participant's Disability, the Participant may exercise his or her Option or SAR (to the extent that the Participant was entitled to exercise such Option or SAR as of the date of termination of Continuous Service), but only within such period of time ending on the earlier of (i) the date twelve (12) months following such termination of Continuous Service (or such longer or shorter period specified in the Award Agreement), or (ii) the expiration of the term of the Option or SAR as set forth in the Award Agreement. If, after termination of Continuous Service, the Participant does not exercise his or her Option or SAR within the time specified herein or in the Award Agreement (as applicable), the Option or SAR (as applicable) shall terminate.

(j) Death of Participant. Except as otherwise provided in the applicable Award Agreement or other agreement between the Participant and the Company, if (i) a Participant's Continuous Service terminates as a result of the Participant's death, or (ii) the Participant dies within the period (if any) specified in the Award Agreement for exercisability after the termination of the Participant's Continuous Service (for a reason other than death), then the Option or SAR may be exercised (to the extent the Participant was entitled to exercise such Option or SAR as of the date of death) by the Participant's estate, by a person who acquired the right to exercise the Option or SAR by bequest or inheritance or by a person designated to exercise the Option or SAR upon the

Participant's death, but only within the period ending on the earlier of (i) the date eighteen (18) months following the date of death (or such longer or shorter period specified in the Award Agreement), or (ii) the expiration of the term of such Option or SAR as set forth in the Award Agreement. If, after the Participant's death, the Option or SAR is not exercised within the time specified herein or in the Award Agreement (as applicable), the Option or SAR shall terminate.

(k) Termination for Cause. Except as explicitly provided otherwise in a Participant's Award Agreement or other individual written agreement between the Company or any Affiliate and the Participant, if a Participant's Continuous Service is terminated for Cause, the Option or SAR shall terminate immediately upon such Participant's termination of Continuous Service, and the Participant shall be prohibited from exercising his or her Option or SAR from and after the time of such termination of Continuous Service.

(l) Non-Exempt Employees. No Option or SAR, whether or not vested, granted to an Employee who is a non-exempt employee for purposes of the Fair Labor Standards Act of 1938, as amended, shall be first exercisable for any shares of Common Stock until at least six months following the date of grant of the Option or SAR. Notwithstanding the foregoing, consistent with the provisions of the Worker Economic Opportunity Act, (i) in the event of the Participant's death or Disability, (ii) upon a Corporate Transaction in which such Option or SAR is not assumed, continued, or substituted, (iii) upon a Change in Control, or (iv) upon the Participant's retirement (as such term may be defined in the Participant's Award Agreement or in another applicable agreement or in accordance with the Company's then current employment policies and guidelines), any such vested Options and SARs may be exercised earlier than six months following the date of grant. The foregoing provision is intended to operate so that any income derived by a non-exempt employee in connection with the exercise or vesting of an Option or SAR will be exempt from his or her regular rate of pay.

6. Provisions Of Stock Awards Other Than Options And SARs.

(a) Restricted Stock Awards. Each Restricted Stock Award Agreement shall be in such form and shall contain such terms and conditions as the Board shall deem appropriate. To the extent consistent with the Company's Bylaws, at the Board's election, shares of Common Stock may be (i) held in book entry form subject to the Company's instructions until any restrictions relating to the Restricted Stock Award lapse; or (ii) evidenced by a certificate, which certificate shall be held in such form and manner as determined by the Board. The terms and conditions of Restricted Stock Award Agreements may change from time to time, and the terms and conditions of separate Restricted Stock Award Agreements need not be identical; provided, however, that each Restricted Stock Award Agreement shall conform to (through incorporation of the provisions hereof by reference in the agreement or otherwise) the substance of each of the following provisions:

(i) Consideration. A Restricted Stock Award may be awarded in consideration for (A) cash, check, bank draft or money order payable to the Company, (B) past services to the Company or an Affiliate, or (C) any other form of legal consideration (including future services) that may be acceptable to the Board, in its sole discretion, and permissible under applicable law.

(ii) Vesting. Shares of Common Stock awarded under the Restricted Stock Award Agreement may be subject to forfeiture to the Company in accordance with a vesting schedule to be determined by the Board.

(iii) Termination of Participant's Continuous Service. If a Participant's Continuous Service terminates, the Company may receive through a forfeiture condition or a repurchase right any or all of the shares of Common Stock held by the Participant that have not vested as of the date of termination of Continuous Service under the terms of the Restricted Stock Award Agreement.

(iv) Transferability. Rights to acquire shares of Common Stock under the Restricted Stock Award Agreement shall be transferable by the Participant only upon such terms and conditions as are set forth in the Restricted Stock Award Agreement, as the Board shall determine in its sole discretion, so long as Common Stock awarded under the Restricted Stock Award Agreement remains subject to the terms of the Restricted Stock Award Agreement.

(v) Dividends. A Restricted Stock Award Agreement may provide that any dividends paid on Restricted Stock will be subject to the same vesting and forfeiture restrictions as apply to the shares subject to the Restricted Stock Award to which they relate.

(b) Restricted Stock Unit Awards. Each Restricted Stock Unit Award Agreement shall be in such form and shall contain such terms and conditions as the Board shall deem appropriate. The terms and conditions of Restricted Stock Unit Award Agreements may change from time to time, and the terms and conditions of separate Restricted Stock Unit Award Agreements need not be identical; provided, however, that each Restricted Stock Unit Award Agreement shall conform to (through incorporation of the provisions hereof by reference in the Agreement or otherwise) the substance of each of the following provisions:

(i) Consideration. At the time of grant of a Restricted Stock Unit Award, the Board will determine the consideration, if any, to be paid by the Participant upon delivery of each share of Common Stock subject to the Restricted Stock Unit Award. The consideration to be paid (if any) by the Participant for each share of Common Stock subject to a Restricted Stock Unit Award may be paid in any form of legal consideration that may be acceptable to the Board, in its sole discretion, and permissible under applicable law.

(ii) Vesting. At the time of the grant of a Restricted Stock Unit Award, the Board may impose such restrictions on or conditions to the vesting of the Restricted Stock Unit Award as it, in its sole discretion, deems appropriate.

(iii) Payment. A Restricted Stock Unit Award will be settled by the delivery of shares of Common Stock as determined by the Board and contained in the Restricted Stock Unit Award Agreement.

(iv) Additional Restrictions. At the time of the grant of a Restricted Stock Unit Award, the Board, as it deems appropriate, may impose such restrictions or conditions that delay the delivery of the shares of Common Stock (or their cash equivalent) subject to a Restricted Stock Unit Award to a time after the vesting of such Restricted Stock Unit Award.

(v) Dividend Equivalents. Dividend equivalents may be credited in respect of shares of Common Stock covered by a Restricted Stock Unit Award, as determined by the Board and contained in the Restricted Stock Unit Award Agreement. At the sole discretion of the Board, such dividend equivalents may be converted into additional shares of Common Stock covered by the Restricted Stock Unit Award in such manner as determined by the Board. Any additional shares covered by the Restricted Stock Unit Award credited by reason of such dividend equivalents will be subject to all of the same terms and conditions of the underlying Restricted Stock Unit Award Agreement to which they relate, including any vesting restrictions.

(vi) Termination of Participant's Continuous Service. Except as otherwise provided in the applicable Restricted Stock Unit Award Agreement, such portion of the Restricted Stock Unit Award that has not vested will be forfeited upon the Participant's termination of Continuous Service.

(c) Performance Awards.

(i) Performance Stock Awards. A Performance Stock Award is a Stock Award that may vest or may be exercised contingent upon the attainment during a Performance Period of certain Performance Goals. A Performance Stock Award may, but need not, require the completion of a specified period of Continuous Service. The length of any Performance Period, the Performance Goals to be achieved during the Performance Period, and the measure of whether and to what degree such Performance Goals have been attained shall be conclusively determined by the Committee, in its sole discretion. The maximum number of shares covered by an Award that may be granted to any Participant in a calendar year attributable to Stock Awards described in this Section 6(c)(i) (whether the grant, vesting or exercise is contingent upon the attainment during a Performance Period of the Performance Goals) shall not exceed five hundred thousand (500,000) shares of Common Stock; provided, however that in connection with his or her initial employment, an Employee may be granted Performance Stock Awards for up to an additional five hundred thousand (500,000) shares of Common Stock which shall not count against such annual limit. The Board

may provide for or, subject to such terms and conditions as the Board may specify, may permit a Participant to elect for, the payment of any Performance Stock Award to be deferred to a specified date or event. In addition, to the extent permitted by applicable law and the applicable Award Agreement, the Board may determine that cash may be used in payment of Performance Stock Awards.

Dividend equivalents may be credited in respect of shares of Common Stock covered by a Performance Stock Award, as determined by the Board and contained in the Performance Stock Award Agreement. At the sole discretion of the Board, such dividend equivalents may be converted into additional shares of Common Stock covered by the Performance Stock Award in such manner as determined by the Board. Any additional shares covered by the Performance Award credited by reason of such dividend equivalents will be subject to all of the same terms and conditions of the underlying Performance Stock Award Agreement to which they relate, including any vesting contingent upon the attainment during a Performance Period of certain Performance Goals.

(ii) Board Discretion. The Board retains the discretion to reduce or eliminate the compensation or economic benefit due upon attainment of Performance Goals and to define the manner of calculating the Performance Criteria it selects to use for a Performance Period.

(iii) Section 162(m) Compliance. Unless otherwise permitted in compliance with the requirements of Section 162(m) of the Code with respect to an Award intended to qualify as "performance-based compensation" thereunder, the Committee shall establish the Performance Goals applicable to, and the formula for calculating the amount payable under, the Award no later than the earlier of (a) the date ninety (90) days after the commencement of the applicable Performance Period, or (b) the date on which twenty-five percent (25%) of the Performance Period has elapsed, and in either event at a time when the achievement of the applicable Performance Goals remains substantially uncertain. Prior to the payment of any compensation under an Award intended to qualify as "performance-based compensation" under Section 162(m) of the Code, the Committee shall certify the extent to which any Performance Goals and any other material terms under such Award have been satisfied (other than in cases where such relate solely to the increase in the value of the Common Stock). Notwithstanding satisfaction of any completion of any Performance Goals, to the extent specified at the time of grant of an Award to "covered employees" within the meaning of Section 162(m) of the Code, the number of shares of Common Stock, Options, or other benefits granted, issued, retainable and/or vested under an Award on account of satisfaction of such Performance Goals may be reduced by the Committee on the basis of such further considerations as the Committee, in its sole discretion, shall determine.

(d) Other Stock Awards. Other forms of Stock Awards valued in whole or in part by reference to, or otherwise based on, Common Stock, including the appreciation in value thereof may be granted either alone or in addition to Stock Awards provided for under Section 5 and the preceding provisions of this Section 6. Subject to the provisions of the Plan, the Board shall have sole and complete authority to determine the persons to whom and the time or times at which such Other Stock Awards will be granted, the number of shares of Common Stock (or the cash equivalent thereof) to be granted pursuant to such Other Stock Awards and all other terms and conditions of such Other Stock Awards.

7. Initial And Annual Grants To Eligible Directors.

(a) General. The Director Grant Program in this Section 7 provides that Eligible Directors shall receive certain Stock Awards at designated intervals over their period of Continuous Service on the Board. For the avoidance of doubt, all Stock Awards granted the Plan, including any Stock Awards granted under this Section 7, are subject to all the terms and conditions of the Plan, including but not limited to the share reserve limitations of Section 3 and the cancellation and regrant restrictions set forth in Section 2(g).

(b) Eligibility. Stock Awards shall be granted under this Section 7 to all Eligible Directors who meet the criteria specified below.

(c) Director Grants.

(i) Initial Award. At the time a person is first elected or appointed to serve on the Board, provided such person is an Eligible Director, he or she automatically shall, upon the date of his or her initial election or appointment as an Eligible Director, be granted an Option to purchase a number of shares of Common Stock as determined by the Board in its sole discretion, on the terms and conditions set forth in Section 7(d) (each such Option is an "***Initial Award***").

(ii) Annual Awards. On the date of each Annual Meeting, commencing with the Annual Meeting in 2012, each person who is then a Eligible Director and who has served as an Eligible Director on the Board for a period of at least six (6) months shall be granted an Option to purchase a number of shares of Common Stock as determined by the Board, in its sole discretion on the terms and conditions set forth in Section 7(d) (each such Option is an "***Annual Award***").

(d) Director Option Grant Provisions.

(i) Option Type. Each Option automatically granted under this Section 7 shall be a Nonstatutory Stock Option.

(ii) Term. No Option shall be exercisable after the expiration of ten (10) years from the date it was granted.

(iii) Exercise Price. The exercise price of each Option shall be one hundred percent (100%) of the Fair Market Value of the Common Stock subject to the Option on the date the Option is granted.

(iv) Vesting.

(1) Initial Awards granted pursuant to this Section 7 shall vest monthly with respect to 1/36th of the shares over the three (3) year period following the date of grant, subject to the Eligible Director's Continuous Service through the applicable vesting dates, so that the Option will be fully vested on the third anniversary of the date of grant.

(2) Annual Awards granted pursuant to this Section 7 shall vest monthly with respect to 1/12th of the shares over the one (1) year period following the date of grant, subject to the Eligible Director's Continuous Service through the applicable vesting dates, so that the Option will be fully vested on the first anniversary of the date of grant.

(3) Each Option granted pursuant to this Section shall automatically fully accelerate vesting upon a Corporate Transaction, subject to the Eligible Director's Continuous Service through the date of the Corporate Transaction.

(v) Remaining Terms. The remaining terms and conditions of each Option shall be as set forth in an Option Agreement in the form adopted from time to time by the Board; provided, however, that the terms of such Option Agreement shall be consistent with the terms of the Plan.

8. COVENANTS OF THE COMPANY.

(a) Availability of Shares. During the terms of the Stock Awards, the Company shall keep available at all times the number of shares of Common Stock reasonably required to satisfy such Stock Awards.

(b) Securities Law Compliance. The Company shall seek to obtain from each regulatory commission or agency having jurisdiction over the Plan such authority as may be required to grant Stock Awards and to issue and sell shares of Common Stock upon exercise of the Stock Awards; provided, however, that this undertaking shall not require the Company to register under the Securities Act the Plan, any Stock Award or any Common Stock issued or issuable pursuant to any such Stock Award. If, after reasonable efforts, the Company is unable to obtain from any such regulatory commission or agency the authority that counsel for the Company deems

necessary for the lawful issuance and sale of Common Stock under the Plan, the Company shall be relieved from any liability for failure to issue and sell Common Stock upon exercise of such Stock Awards unless and until such authority is obtained. A Participant shall not be eligible for the grant of a Stock Award or the subsequent issuance of Common Stock pursuant to the Stock Award if such grant or issuance would be in violation of any applicable securities law.

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

9. MISCELLANEOUS.

(a) Use of Proceeds from Sales of Common Stock. Proceeds from the sale of shares of Common Stock pursuant to Stock Awards shall constitute general funds of the Company.

(b) Corporate Action Constituting Grant of Stock Awards. Corporate action constituting a grant by the Company of a Stock Award to any Participant shall be deemed completed as of the date of such corporate action, unless otherwise determined by the Board, regardless of when the instrument, certificate, or letter evidencing the Stock Award is communicated to, or actually received or accepted by, the Participant.

(c) Stockholder Rights. No Participant shall be deemed to be the holder of, or to have any of the rights of a holder with respect to, any shares of Common Stock subject to such Stock Award unless and until (i) such Participant has satisfied all requirements for exercise of the Stock Award pursuant to its terms, if applicable, and (ii) the issuance of the Common Stock subject to such Stock Award has been entered into the books and records of the Company.

(d) No Employment or Other Service Rights. Nothing in the Plan, any Stock Award Agreement or any other instrument executed thereunder or in connection with any Award granted pursuant thereto shall confer upon any Participant any right to continue to serve the Company or an Affiliate in the capacity in effect at the time the Stock Award was granted or shall affect the right of the Company or an Affiliate to terminate (i) the employment of an Employee with or without notice and with or without cause, (ii) the service of a Consultant pursuant to the terms of such Consultant's agreement with the Company or an Affiliate, or (iii) the service of a Director pursuant to the Bylaws of the Company or an Affiliate, and any applicable provisions of the corporate law of the state in which the Company or the Affiliate is incorporated, as the case may be.

(e) Incentive Stock Option $100,000 Limitation. To the extent that the aggregate Fair Market Value (determined at the time of grant) of Common Stock with respect to which Incentive Stock Options are exercisable for the first time by any Optionholder during any calendar year (under all plans of the Company and any Affiliates) exceeds one hundred thousand dollars ($100,000), the Options or portions thereof that exceed such limit (according to the order in which they were granted) shall be treated as Nonstatutory Stock Options, notwithstanding any contrary provision of the applicable Option Agreement(s).

(f) Investment Assurances. The Company may require a Participant, as a condition of exercising or acquiring Common Stock under any Stock Award, (i) to give written assurances satisfactory to the Company as to the Participant's knowledge and experience in financial and business matters and/or to employ a purchaser representative reasonably satisfactory to the Company who is knowledgeable and experienced in financial and business matters and that he or she is capable of evaluating, alone or together with the purchaser representative, the merits and risks of exercising the Stock Award; and (ii) to give written assurances satisfactory to the Company stating that the Participant is acquiring Common Stock subject to the Stock Award for the Participant's own account and not with any present intention of selling or otherwise distributing the Common Stock. The foregoing requirements, and any assurances given pursuant to such requirements, shall be inoperative if (A) the

issuance of the shares upon the exercise or acquisition of Common Stock under the Stock Award has been registered under a then currently effective registration statement under the Securities Act, or (B) as to any particular requirement, a determination is made by counsel for the Company that such requirement need not be met in the circumstances under the then applicable securities laws. The Company may, upon advice of counsel to the Company, place legends on stock certificates issued under the Plan as such counsel deems necessary or appropriate in order to comply with applicable securities laws, including, but not limited to, legends restricting the transfer of the Common Stock.

(g) Withholding Obligations. Unless prohibited by the terms of a Stock Award Agreement, the Company may, in its sole discretion, satisfy any federal, state or local tax withholding obligation relating to an Award by any of the following means or by a combination of such means: (i) causing the Participant to tender a cash payment; (ii) withholding shares of Common Stock from the shares of Common Stock issued or otherwise issuable to the Participant in connection with the Award; provided, however, that no shares of Common Stock are withheld with a value exceeding the minimum amount of tax required to be withheld by law (or such lesser amount as may be necessary to avoid classification of the Stock Award as a liability for financial accounting purposes); (iii) withholding cash from an Award settled in cash; (iv) withholding payment from any amounts otherwise payable to the Participant; or (v) by such other method as may be set forth in the Award Agreement.

(h) Electronic Delivery. Any reference herein to a "written" agreement or document shall include any agreement or document delivered electronically or posted on the Company's intranet (or other shared electronic medium controlled by the Company to which the Participant has access).

(i) Deferrals. To the extent permitted by applicable law, the Board, in its sole discretion, may determine that the delivery of Common Stock or the payment of cash, upon the exercise, vesting or settlement of all or a portion of any Award may be deferred and may establish programs and procedures for deferral elections to be made by Participants. Deferrals by Participants will be made in accordance with Section 409A of the Code. Consistent with Section 409A of the Code, the Board may provide for distributions while a Participant is still an employee or otherwise providing services to the Company. The Board is authorized to make deferrals of Awards and determine when, and in what annual percentages, Participants may receive payments, including lump sum payments, following the Participant's termination of Continuous Service, and implement such other terms and conditions consistent with the provisions of the Plan and in accordance with applicable law.

(j) Compliance with Section 409A. To the extent that the Board determines that any Award granted hereunder is subject to Section 409A of the Code, the Award Agreement evidencing such Award shall incorporate the terms and conditions necessary to avoid the consequences specified in Section 409A(a)(1) of the Code. To the extent applicable, the Plan and Award Agreements shall be interpreted in accordance with Section 409A of the Code. Notwithstanding anything to the contrary in this Plan (and unless the Award Agreement specifically provides otherwise), if the shares of Common Stock are publicly traded and a Participant holding an Award that constitutes "***deferred compensation***" under Section 409A of the Code is a "***specified employee***" for purposes of Section 409A of the Code, no distribution or payment of any amount shall be made upon a "***separation from service***" before a date that is six (6) months following the date of such Participant's "***separation from service***" (as defined in Section 409A of the Code without regard to alternative definitions thereunder) or, if earlier, the date of the Participant's death.

(k) Minimum Vesting. After the Effective Date of the Plan, generally (i) no Full Value Award that vests on the basis of the Participant's Continuous Service with the Company shall vest at a rate that is any more rapid than ratably over a three (3)-year period and (ii) no Full Value Award that vests based on the satisfaction of Performance Goals shall provide for a Performance Period of less than twelve (12) months. Notwithstanding the foregoing, Full Value Awards may be granted by the Committee after the Effective Date that do not meet the foregoing minimum vesting guidelines, provided that such Awards shall be limited to no more than 5% of the total number of shares reserved for issuance under the Plan.

10. ADJUSTMENTS UPON CHANGES IN COMMON STOCK; OTHER CORPORATE EVENTS.

(a) Capitalization Adjustments. In the event of a Capitalization Adjustment, the Board shall appropriately and proportionately adjust: (i) the class(es) and maximum number of securities subject to the Plan pursuant to Section 3(a), (ii) the class(es) and maximum number of securities that may be issued pursuant to the exercise of Incentive Stock Options pursuant to Section 3(e), (iii) the class(es) and maximum number of securities that may be awarded to any person pursuant to Sections 3(f) and 6(c)(i) , and (iv) the class(es) and number of securities and price per share of stock subject to outstanding Stock Awards. The Board shall make such adjustments, and its determination shall be final, binding and conclusive.

(b) Dissolution or Liquidation. Except as otherwise provided in the Stock Award Agreement, in the event of a dissolution or liquidation of the Company, all outstanding Stock Awards (other than Stock Awards consisting of vested and outstanding shares of Common Stock not subject to a forfeiture condition or the Company's right of repurchase) shall terminate immediately prior to the completion of such dissolution or liquidation, and the shares of Common Stock subject to the Company's repurchase rights or subject to a forfeiture condition may be repurchased or reacquired by the Company notwithstanding the fact that the holder of such Stock Award is providing Continuous Service, provided, however, that the Board may, in its sole discretion, cause some or all Stock Awards to become fully vested, exercisable and/or no longer subject to repurchase or forfeiture (to the extent such Stock Awards have not previously expired or terminated) before the dissolution or liquidation is completed but contingent on its completion.

(c) Corporate Transaction. The following provisions shall apply to Stock Awards in the event of a Corporate Transaction unless otherwise provided in the instrument evidencing the Stock Award or any other written agreement between the Company or any Affiliate and the Participant or unless otherwise expressly provided by the Board at the time of grant of a Stock Award.

(i) Stock Awards May Be Assumed. In the event of a Corporate Transaction, any surviving corporation or acquiring corporation (or the surviving or acquiring corporation's parent company) may assume or continue any or all Stock Awards outstanding under the Plan or may substitute similar stock awards for Stock Awards outstanding under the Plan (including but not limited to, awards to acquire the same consideration paid to the stockholders of the Company pursuant to the Corporate Transaction), and any reacquisition or repurchase rights held by the Company in respect of Common Stock issued pursuant to Stock Awards may be assigned by the Company to the successor of the Company (or the successor's parent company, if any), in connection with such Corporate Transaction. A surviving corporation or acquiring corporation (or its parent) may choose to assume or continue only a portion of a Stock Award or substitute a similar stock award for only a portion of a Stock Award, or may choose to assume or continue the Stock Awards held by some, but not all Participants. The terms of any assumption, continuation or substitution shall be set by the Board.

(ii) Stock Awards Held by Current Employee and Director Participants. In the event of a Corporate Transaction in which the surviving corporation or acquiring corporation (or its parent company) does not assume or continue such outstanding Stock Awards or substitute similar stock awards for such outstanding Stock Awards, then with respect to Stock Awards that have not been assumed, continued or substituted and that are held by Participants that are Employees or Directors and whose Continuous Service has not terminated prior to the effective time of the Corporate Transaction (referred to as the "***Current Employee and Director Participants***"), the vesting of such Stock Awards (and, with respect to Options and SARs, the time when such Stock Awards may be exercised) shall be accelerated in full to a date prior to the effective time of such Corporate Transaction (contingent upon the effectiveness of the Corporate Transaction) as the Board shall determine (or, if the Board shall not determine such a date, to the date that is fifteen (15) days prior to the effective time of the Corporate Transaction), and such Stock Awards shall terminate if not exercised (if applicable) at or prior to the effective time of the Corporate Transaction, and any reacquisition or repurchase rights held by the Company with respect to such Stock Awards shall lapse (contingent upon the effectiveness of the Corporate Transaction).

(d) Stock Awards Held by Persons other than Current Employee and Director Participants. In the event of a Corporate Transaction in which the surviving corporation or acquiring corporation (or its parent company) does not assume or continue such outstanding Stock Awards or substitute similar stock awards for such outstanding Stock Awards, then with respect to Stock Awards that have not been assumed, continued or substituted and that are held by persons other than Current Employee and Director Participants, such Stock Awards shall terminate if not exercised (if applicable) prior to the effective time of the Corporate Transaction; provided, however, that any reacquisition or repurchase rights held by the Company with respect to such Stock Awards shall not terminate and may continue to be exercised notwithstanding the Corporate Transaction.

(e) Payment for Stock Awards in Lieu of Exercise. Notwithstanding the foregoing, in the event a Stock Award will terminate if not exercised prior to the effective time of a Corporate Transaction, the Board may provide, in its sole discretion, that the holder of such Stock Award may not exercise such Stock Award but will receive a payment, in such form as may be determined by the Board, equal in value, at the effective time, to the excess, if any, of (A) the value of the property the Participant would have received upon the exercise of the Stock Award (including, at the discretion of the Board, any unvested portion of such Stock Award), over (B) any exercise price payable by such holder in connection with such exercise.

(f) Change in Control. A Stock Award may be subject to acceleration of vesting and exercisability upon or after a Change in Control as may be provided in the Stock Award Agreement for such Stock Award or as may be provided in any other written agreement between the Company or any Affiliate and the Participant, but in the absence of such provision, no such acceleration shall occur.

11. Termination or Suspension of the Plan.

(a) Plan Term. The Board may suspend or terminate the Plan at any time. Unless terminated sooner by the Board, the Plan shall automatically terminate on the day before the tenth (10^{th}) anniversary of the earlier of (i) the date the Plan is adopted by the Board, or (ii) the date the Plan is approved by the stockholders of the Company. No Awards may be granted under the Plan while the Plan is suspended or after it is terminated.

(b) No Impairment of Rights. Suspension or termination of the Plan shall not impair rights and obligations under any Award granted while the Plan is in effect except with the written consent of the affected Participant.

12. Effective Date of Plan. This Plan shall become effective on the Effective Date.

13. Choice of Law. The Laws of the State of California shall govern all questions concerning the construction, validity and interpretation of this Plan, without regard to that state's conflict of laws rules.

14. Definitions. As used in the Plan, the following definitions shall apply to the capitalized terms indicated below:

(a) "***Affiliate***" means, at the time of determination, any "parent" or "subsidiary" of the Company as such terms are defined in Rule 405 promulgated under the Securities Act. The Board shall have the authority to determine the time or times at which "parent" or "subsidiary" status is determined within the foregoing definition.

(b) "***Annual Meeting***" means the first meeting of the Company's stockholders held each calendar year at which Directors of the Company are selected.

(c) "***Award***" means a Stock Award.

(d) "***Award Agreement***" means a written agreement between the Company and a Participant evidencing the terms and conditions of an Award.

(e) "***Board***" means the Board of Directors of the Company.

(f) "***Capitalization Adjustment***" means any change that is made in, or other events that occur with respect to, the Common Stock subject to the Plan or subject to any Stock Award after the Effective Date without the receipt of consideration by the Company through merger, consolidation, reorganization, recapitalization, reincorporation, stock dividend, dividend in property other than cash, large nonrecurring cash dividend, stock split, liquidating dividend, combination of shares, exchange of shares, change in corporate structure or any similar equity restructuring transaction, as that term is used in Statement of Financial Accounting Standards No. 123 (revised). Notwithstanding the foregoing, the conversion of any convertible securities of the Company shall not be treated as a Capitalization Adjustment.

(g) "***Cause***" shall mean, with respect to a Participant, the occurrence of any of the following events: (i) such Participant's commission of any crime involving fraud, dishonesty or moral turpitude; (ii) such Participant's attempted commission of or participation in a fraud or act of dishonesty against the Company that results in (or might have reasonably resulted in) material harm to the business of the Company; (iii) such Participant's intentional, material violation of any contract or agreement between Participant and the Company or any statutory duty Participant owes to the Company; or (iv) such Participant's conduct that constitutes gross insubordination, incompetence or habitual neglect of duties and that results in (or might have reasonably resulted in) material harm to the business of the Company; provided, however, that the action or conduct described in clauses (iii) and (iv) above will constitute "***Cause***" only if such action or conduct continues after the Company has provided such Participant with written notice thereof and not less than five business days to cure the same.

(h) "***Change in Control***" means the occurrence, in a single transaction or in a series of related transactions, of any one or more of the following events:

(i) any Exchange Act Person becomes the Owner, directly or indirectly, of securities of the Company representing more than fifty percent (50%) of the combined voting power of the Company's then outstanding securities other than by virtue of a merger, consolidation or similar transaction. Notwithstanding the foregoing, a Change in Control shall not be deemed to occur (A) on account of the acquisition of securities of the Company directly from the Company, (B) on account of the acquisition of securities of the Company by an investor, any affiliate thereof or any other Exchange Act Person that acquires the Company's securities in a transaction or series of related transactions the primary purpose of which is to obtain financing for the Company through the issuance of equity securities, or (C) solely because the level of Ownership held by any Exchange Act Person (the "***Subject Person***") exceeds the designated percentage threshold of the outstanding voting securities as a result of a repurchase or other acquisition of voting securities by the Company reducing the number of shares outstanding, provided that if a Change in Control would occur (but for the operation of this sentence) as a result of the acquisition of voting securities by the Company, and after such share acquisition, the Subject Person becomes the Owner of any additional voting securities that, assuming the repurchase or other acquisition had not occurred, increases the percentage of the then outstanding voting securities Owned by the Subject Person over the designated percentage threshold, then a Change in Control shall be deemed to occur;

(ii) there is consummated a merger, consolidation or similar transaction involving (directly or indirectly) the Company and, immediately after the consummation of such merger, consolidation or similar transaction, the stockholders of the Company immediately prior thereto do not Own, directly or indirectly, either (A) outstanding voting securities representing more than fifty percent (50%) of the combined outstanding voting power of the surviving Entity in such merger, consolidation or similar transaction or (B) more than fifty percent (50%) of the combined outstanding voting power of the parent of the surviving Entity in such merger, consolidation or similar transaction, in each case in substantially the same proportions as their Ownership of the outstanding voting securities of the Company immediately prior to such transaction;

(iii) the stockholders of the Company approve or the Board approves a plan of complete dissolution or liquidation of the Company, or a complete dissolution or liquidation of the Company shall otherwise occur, except for a liquidation into a parent corporation;

(iv) there is consummated a sale, lease, exclusive license or other disposition of all or substantially all of the consolidated assets of the Company and its Subsidiaries, other than a sale, lease, license or other disposition of all or substantially all of the consolidated assets of the Company and its Subsidiaries to an Entity, more than fifty percent (50%) of the combined voting power of the voting securities of which are Owned by stockholders of the Company in substantially the same proportions as their Ownership of the outstanding voting securities of the Company immediately prior to such sale, lease, license or other disposition; or

(v) individuals who, on the date the Plan is adopted by the Board, are members of the Board (the "***Incumbent Board***") cease for any reason to constitute at least a majority of the members of the Board; provided, however, that if the appointment or election (or nomination for election) of any new Board member was approved or recommended by a majority vote of the members of the Incumbent Board then still in office, such new member shall, for purposes of this Plan, be considered as a member of the Incumbent Board.

Notwithstanding the foregoing or any other provision of this Plan, the term Change in Control shall not include a sale of assets, merger or other transaction effected exclusively for the purpose of changing the domicile of the Company.

(i) "***Code***" means the Internal Revenue Code of 1986, as amended, including any applicable regulations and guidance thereunder.

(j) "***Committee***" means a committee of one or more Directors to whom authority has been delegated by the Board in accordance with Section 2(d).

(k) "***Common Stock***" means the common stock of the Company.

(l) "***Company***" means Neurocrine Biosciences, Inc., a Delaware corporation.

(m) "***Consultant***" means any person, including an advisor, who is (i) engaged by the Company or an Affiliate to render consulting or advisory services and is compensated for such services, or (ii) serving as a member of the board of directors of an Affiliate and is compensated for such services. However, service solely as a Director, or payment of a fee for such service, shall not cause a Director to be considered a "***Consultant***" for purposes of the Plan. Notwithstanding the foregoing, a person is treated as a Consultant under this Plan only if a Form S-8 Registration Statement under the Securities Act is available to register either the offer or the sale of the Company's securities to such person.

(n) "***Continuous Service***" means that the Participant's service with the Company or an Affiliate, whether as an Employee, Director or Consultant, is not interrupted or terminated. A change in the capacity in which the Participant renders service to the Company or an Affiliate as an Employee, Consultant or Director or a change in the entity for which the Participant renders such service, provided that there is no interruption or termination of the Participant's service with the Company or an Affiliate, shall not terminate a Participant's Continuous Service; provided, however, if the Entity for which a Participant is rendering services ceases to qualify as an Affiliate, as determined by the Board, in its sole discretion, such Participant's Continuous Service shall be considered to have terminated on the date such Entity ceases to qualify as an Affiliate. To the extent permitted by law, the Board or the chief executive officer of the Company, in that party's sole discretion, may determine whether Continuous Service shall be considered interrupted in the case of (i) any leave of absence approved by the Board or Chief Executive Officer, including sick leave, military leave or any other personal leave, or (ii) transfers between the Company, an Affiliate, or their successors. Notwithstanding the foregoing, a leave of absence shall be treated as

Continuous Service for purposes of vesting in a Stock Award only to such extent as may be provided in the Company's leave of absence policy, in the written terms of any leave of absence agreement or policy applicable to the Participant, or as otherwise required by law.

(o) "***Corporate Transaction***" means the consummation, in a single transaction or in a series of related transactions, of any one or more of the following events:

(i) a sale or other disposition of all or substantially all, as determined by the Board, in its sole discretion, of the consolidated assets of the Company and its Subsidiaries;

(ii) a sale or other disposition of at least ninety percent (90%) of the outstanding securities of the Company;

(iii) a merger, consolidation or similar transaction following which the Company is not the surviving corporation; or

(iv) a merger, consolidation or similar transaction following which the Company is the surviving corporation but the shares of Common Stock outstanding immediately preceding the merger, consolidation or similar transaction are converted or exchanged by virtue of the merger, consolidation or similar transaction into other property, whether in the form of securities, cash or otherwise.

(p) "***Covered Employee***" shall have the meaning provided in Section 162(m)(3) of the Code.

(q) "***Director***" means a member of the Board.

(r) "***Director Grant Program***" means the grant program in effect under Section 7 of the Plan.

(s) "***Disability***" means, with respect to a Participant, the inability of such Participant to engage in any substantial gainful activity by reason of any medically determinable physical or mental impairment which can be expected to result in death or which has lasted or can be expected to last for a continuous period of not less than twelve (12) months, as provided in Sections 22(e)(3) and 409A(a)(2)(c)(i) of the Code, and shall be determined by the Board on the basis of such medical evidence as the Board deems warranted under the circumstances.

(t) "***Effective Date***" means the effective date of this Plan document, which is the date of the annual meeting of stockholders of the Company held in 2011 provided this Plan is approved by the Company's stockholders at such meeting.

(u) "***Eligible Director***" means a Director who is not an Employee and is eligible to participate in the Director Grant Program.

(v) "***Employee***" means any person employed by the Company or an Affiliate. However, service solely as a Director, or payment of a fee for such services, shall not cause a Director to be considered an "***Employee***" for purposes of the Plan.

(w) "***Entity***" means a corporation, partnership, limited liability company or other entity.

(x) "***Exchange Act***" means the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder.

(y) "***Exchange Act Person***" means any natural person, Entity or "group" (within the meaning of Section 13(d) or 14(d) of the Exchange Act), except that "***Exchange Act Person***" shall not include (i) the Company or any Subsidiary of the Company, (ii) any employee benefit plan of the Company or any Subsidiary of the Company or any trustee or other fiduciary holding securities under an employee benefit plan of the Company or any Subsidiary of the Company, (iii) an underwriter temporarily holding securities pursuant to a registered

public offering of such securities, (iv) an Entity Owned, directly or indirectly, by the stockholders of the Company in substantially the same proportions as their Ownership of stock of the Company; or (v) any natural person, Entity or "group" (within the meaning of Section 13(d) or 14(d) of the Exchange Act) that, as of the Effective Date, is the Owner, directly or indirectly, of securities of the Company representing more than fifty percent (50%) of the combined voting power of the Company's then outstanding securities.

(z) "***Fair Market Value***" means, as of any date, the value of the Common Stock determined as follows:

(i) If the Common Stock is listed on any established stock exchange or traded on any established market, the Fair Market Value of a share of Common Stock shall be the closing sales price for such stock as quoted on such exchange or market (or the exchange or market with the greatest volume of trading in the Common Stock) on the date of determination, as reported in a source the Board deems reliable.

(ii) Unless otherwise provided by the Board, if there is no closing sales price for the Common Stock on the date of determination, then the Fair Market Value shall be the closing selling price on the last preceding date for which such quotation exists.

(iii) In the absence of such markets for the Common Stock, the Fair Market Value shall be determined by the Board in good faith and in a manner that complies with Sections 409A and 422 of the Code.

(aa) "***Full Value Award***" generally means any Award granted under the Plan, but does not include any Option or a SAR granted pursuant to Section 5 of the Plan.

(bb) "***Incentive Stock Option***" means an option granted pursuant to Section 5 of the Plan that is intended to be, and qualifies as, an "incentive stock option" within the meaning of Section 422 of the Code.

(cc) "***Non-Employee Director***" means a Director who either (i) is not a current employee or officer of the Company or an Affiliate, does not receive compensation, either directly or indirectly, from the Company or an Affiliate for services rendered as a consultant or in any capacity other than as a Director (except for an amount as to which disclosure would not be required under Item 404(a) of Regulation S-K promulgated pursuant to the Securities Act ("***Regulation S-K***")), does not possess an interest in any other transaction for which disclosure would be required under Item 404(a) of Regulation S-K, and is not engaged in a business relationship for which disclosure would be required pursuant to Item 404(b) of Regulation S-K; or (ii) is otherwise considered a "non-employee director" for purposes of Rule 16b-3.

(dd) "***Nonstatutory Stock Option***" means any option granted pursuant to Section 5 of the Plan that does not qualify as an Incentive Stock Option.

(ee) "***Officer***" means a person who is an officer of the Company within the meaning of Section 16 of the Exchange Act.

(ff) "***Option***" means an Incentive Stock Option or a Nonstatutory Stock Option to purchase shares of Common Stock granted pursuant to the Plan.

(gg) "***Option Agreement***" means a written agreement between the Company and an Optionholder evidencing the terms and conditions of an Option grant. Each Option Agreement shall be subject to the terms and conditions of the Plan.

(hh) "***Optionholder***" means a person to whom an Option is granted pursuant to the Plan or, if applicable, such other person who holds an outstanding Option.

(ii) "***Other Stock Award***" means an award based in whole or in part by reference to the Common Stock which is granted pursuant to the terms and conditions of Section 6(d).

(jj) "***Other Stock Award Agreement***" means a written agreement between the Company and a holder of an Other Stock Award evidencing the terms and conditions of an Other Stock Award grant. Each Other Stock Award Agreement shall be subject to the terms and conditions of the Plan.

(kk) "***Outside Director***" means a Director who either (i) is not a current employee of the Company or an "affiliated corporation" (within the meaning of Treasury Regulations promulgated under Section 162(m) of the Code), is not a former employee of the Company or an "affiliated corporation" who receives compensation for prior services (other than benefits under a tax-qualified retirement plan) during the taxable year, has not been an officer of the Company or an "affiliated corporation," and does not receive remuneration from the Company or an "affiliated corporation," either directly or indirectly, in any capacity other than as a Director, or (ii) is otherwise considered an "outside director" for purposes of Section 162(m) of the Code.

(ll) "***Own,***" "***Owned,***" "***Owner,***" "***Ownership***" A person or Entity shall be deemed to "***Own,***" to have "***Owned,***" to be the "***Owner***" of, or to have acquired "***Ownership***" of securities if such person or Entity, directly or indirectly, through any contract, arrangement, understanding, relationship or otherwise, has or shares voting power, which includes the power to vote or to direct the voting, with respect to such securities.

(mm) "***Participant***" means a person to whom an Award is granted pursuant to the Plan or, if applicable, such other person who holds an outstanding Stock Award.

(nn) "***Performance Criteria***" means the one or more criteria that the Board shall select for purposes of establishing the Performance Goals for a Performance Period. The Performance Criteria that shall be used to establish such Performance Goals may be based on any one of, or combination of, the following as determined by the Board: (i) earnings (including earnings per share and net earnings, in either case before or after any or all of: interest, taxes, depreciation and amortization, legal settlements or other income (expense), or stock-based compensation, other non-cash expenses and changes in deferred revenue); (ii) total stockholder return; (iii) return on equity or average stockholder's equity; (iv) return on assets, investment, or capital employed; (v) stock price; (vi) margin (including gross margin); (vii) income (before or after taxes); (viii) operating income; (ix) operating income after taxes; (x) pre-tax profit; (xi) operating cash flow; (xii) sales or revenue targets; (xiii) increases in revenue or product revenue; (xiv) expenses and cost reduction goals; (xv) improvement in or attainment of working capital levels; (xvi) economic value added (or an equivalent metric); (xvii) market share; (xviii) cash flow; (xix) cash flow per share; (xx) cash burn; (xxi) share price performance; (xxii) debt reduction; (xxiii) implementation or completion of projects or processes (including, without limitation, discovery of a pre-clinical drug candidate, recommendation of a drug candidate to enter a clinical trial, clinical trial initiation, clinical trial enrollment and dates, clinical trial results, regulatory filing submissions, regulatory filing acceptances, regulatory or advisory committee interactions, regulatory approvals, presentation of studies and launch of commercial plans, compliance programs or education campaigns); (xxiv) customer satisfaction; (xxv) stockholders' equity; (xxvi) capital expenditures; (xxvii) debt levels; (xxviii) financings; (xxix) operating profit or net operating profit; (xxx) workforce diversity; (xxxi) growth of net income or operating income; (xxxii) billings; (xxxiii) employee hiring; (xxxiv) funds from operations; (xxxv) budget management; (xxxvi) strategic partnerships or transactions (including acquisitions, joint ventures or licensing transactions); (xxxvii) engagement of thought leaders and patient advocacy groups; (xxxviii) enhancement of intellectual property portfolio, filing of patent applications and granting of patents; (xxxix) litigation preparation and management; and (xl) to the extent that an Award is not intended to comply with Section 162(m) of the Code, other measures of performance selected by the Board.

(oo) "***Performance Goals***" means, for a Performance Period, the one or more goals established by the Board for the Performance Period based upon the Performance Criteria. Performance Goals may be based on a Company-wide basis, with respect to one or more business units, divisions, Affiliates, or business segments, and in either absolute terms or relative to the performance of one or more comparable companies or the performance of one or more relevant indices. Unless specified otherwise by the Board (i) in the Award Agreement at the time the Award is granted or (ii) in such other document setting forth the Performance Goals at the time the

Performance Goals are established, the Board shall appropriately make adjustments in the method of calculating the attainment of Performance Goals for a Performance Period as follows: (1) to exclude restructuring and/or other nonrecurring charges; (2) to exclude exchange rate effects, as applicable, for non-U.S. dollar denominated Performance Goals; (3) to exclude the effects of changes to generally accepted accounting principles; (4) to exclude the effects of any statutory adjustments to corporate tax rates; (5) to exclude the effects of items that are "unusual" in nature or occur "infrequently" as determined under generally accepted accounting principles; (6) to exclude the dilutive effects of acquisitions or joint ventures; (7) to assume that any business divested by the Company achieved performance objectives at targeted levels during the balance of a Performance Period following such divestiture; (8) to exclude the effect of any change in the outstanding shares of common stock of the Company by reason of any stock dividend or split, stock repurchase, reorganization, recapitalization, merger, consolidation, spin-off, combination or exchange of shares or other similar corporate change, or any distributions to common stockholders other than regular cash dividends; (9) to exclude the effects of stock based compensation and the award of bonuses under the Company's bonus plans; (10) to exclude costs incurred in connection with potential acquisitions or divestitures that are required to be expensed under generally accepted accounting principles; (11) to exclude the goodwill and intangible asset impairment charges that are required to be recorded under generally accepted accounting principles; and (12) to exclude the effects of the timing of acceptance for review and/or approval of submissions to the U.S. Food and Drug Administration or any other regulatory body.

(pp) "***Performance Period***" means the period of time selected by the Board over which the attainment of one or more Performance Goals will be measured for the purpose of determining a Participant's right to and the payment of a Stock Award. Performance Periods may be of varying and overlapping duration, at the sole discretion of the Board.

(qq) "***Performance Stock Award***" means a Stock Award granted under the terms and conditions of Section 6(c)(i).

(rr) "***Plan***" means this Neurocrine Biosciences, Inc. 2011 Equity Incentive Plan.

(ss) "***Restricted Stock Award***" means an award of shares of Common Stock which is granted pursuant to the terms and conditions of Section 6(a).

(tt) "***Restricted Stock Award Agreement***" means a written agreement between the Company and a holder of a Restricted Stock Award evidencing the terms and conditions of a Restricted Stock Award grant. Each Restricted Stock Award Agreement shall be subject to the terms and conditions of the Plan.

(uu) "***Restricted Stock Unit Award***" means a right to receive shares of Common Stock which is granted pursuant to the terms and conditions of Section 6(b).

(vv) "***Restricted Stock Unit Award Agreement***" means a written agreement between the Company and a holder of a Restricted Stock Unit Award evidencing the terms and conditions of a Restricted Stock Unit Award grant. Each Restricted Stock Unit Award Agreement shall be subject to the terms and conditions of the Plan.

(ww) "***Rule 16b-3***" means Rule 16b-3 promulgated under the Exchange Act or any successor to Rule 16b-3, as in effect from time to time.

(xx) "***Securities Act***" means the Securities Act of 1933, as amended.

(yy) "***Stock Appreciation Right***" or "***SAR***" means a right to receive the appreciation on Common Stock that is granted pursuant to the terms and conditions of Section 5.

(zz) "***Stock Appreciation Right Agreement***" or "***SAR Agreement***") means a written agreement between the Company and a holder of a Stock Appreciation Right evidencing the terms and conditions of a Stock Appreciation Right grant. Each Stock Appreciation Right Agreement shall be subject to the terms and conditions of the Plan.

(aaa) "***Stock Award***" means any right to receive Common Stock granted under the Plan, including an Incentive Stock Option, a Nonstatutory Stock Option, a Restricted Stock Award, a Restricted Stock Unit Award, a SAR, a Performance Stock Award or any Other Stock Award.

(bbb) "***Stock Award Agreement***" means a written agreement between the Company and a Participant evidencing the terms and conditions of a Stock Award grant. Each Stock Award Agreement shall be subject to the terms and conditions of the Plan.

(ccc) "***Subsidiary***" means, with respect to the Company, (i) any corporation of which more than fifty percent (50%) of the outstanding capital stock having ordinary voting power to elect a majority of the board of directors of such corporation (irrespective of whether, at the time, stock of any other class or classes of such corporation shall have or might have voting power by reason of the happening of any contingency) is at the time, directly or indirectly, Owned by the Company, and (ii) any partnership, limited liability company or other entity in which the Company has a direct or indirect interest (whether in the form of voting or participation in profits or capital contribution) of more than fifty percent (50%).

(ddd) "***Ten Percent Stockholder***" means a person who Owns (or is deemed to Own pursuant to Section 424(d) of the Code) stock possessing more than ten percent (10%) of the total combined voting power of all classes of stock of the Company or any Affiliate.

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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

Form 10-K

(Mark One)

☑ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the fiscal year ended December 31, 2018

OR

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from_____to_____

Commission file number: 0-22705

NEUROCRINE BIOSCIENCES, INC.

(Exact name of registrant as specified in its charter)

Delaware	**33-0525145**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification Number)**
12780 El Camino Real, San Diego, CA	**92130**
(Address of principal executive offices)	**(Zip Code)**

Registrant's telephone number, including area code:
(858) 617-7600

Securities registered pursuant to Section 12(b) of the Act:

Title of Each Class	**Name of Each Exchange on Which Registered**
Common Stock, $0.001 par value	The Nasdaq Stock Market

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☑ No ☐

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐ No ☑

Indicate by check mark whether the registrant: (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☑ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☑ No ☐

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§ 229.405 of this chapter) is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ☑

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer", "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer	☑	Accelerated filer	☐
Non-accelerated filer	☐	Smaller reporting company	☐
		Emerging growth company	☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes ☐ No ☑

The aggregate market value of the common equity held by non-affiliates of the registrant as of June 30, 2018 totaled approximately $7,461,776,662 based on the closing price for the registrant's Common Stock on that day as reported by the Nasdaq Stock Market. Such value excludes Common Stock held by executive officers, directors and 10% or greater stockholders as of June 30, 2018. The identification of 10% or greater stockholders as of June 30, 2018 is based on applicable Schedule 13G and amended Schedule 13G reports. This calculation does not reflect a determination that such parties are affiliates for any other purposes.

As of February 1, 2019, there were 90,821,267 shares of the registrant's Common Stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Document Description	**10-K Part**
Portions of the registrant's notice of annual meeting of stockholders and proxy statement to be filed pursuant to Regulation 14A within 120 days after registrant's fiscal year end of December 31, 2018 are incorporated by reference into Part III of this report	III

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PART I

FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K and the information incorporated herein by reference contain forward-looking statements that involve a number of risks and uncertainties. Although our forward-looking statements reflect the good faith judgment of our management, these statements can only be based on facts and factors currently known by us. Consequently, these forward-looking statements are inherently subject to risks and uncertainties, and actual results and outcomes may differ materially from results and outcomes discussed in the forward-looking statements.

Forward-looking statements can be identified by the use of forward-looking words such as “believes,” “expects,” “hopes,” “may,” “will,” “plan,” “intends,” “estimates,” “could,” “should,” “would,” “continue,” “seeks,” “pro forma,” or “anticipates,” or other similar words (including their use in the negative), or by discussions of future matters such as the development of new products, technology enhancements, possible changes in legislation and other statements that are not historical. These statements include but are not limited to statements under the captions “Risk Factors,” “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and “Business,” as well as other sections in this report. You should be aware that the occurrence of any of the events discussed under the heading in Part II titled “Item 1A. Risk Factors” and elsewhere in this report could substantially harm our business, results of operations and financial condition and that if any of these events occurs, the trading price of our common stock could decline and you could lose all or a part of the value of your shares of our common stock.

The cautionary statements made in this report are intended to be applicable to all related forward-looking statements wherever they may appear in this report. We urge you not to place undue reliance on these forward-looking statements, which speak only as of the date of this report. Except as required by law, we assume no obligation to update our forward-looking statements, even if new information becomes available in the future.

ITEM 1. *BUSINESS*

Overview

We were originally incorporated in California in January 1992 and reincorporated in Delaware in May 1996. We are a company focused on discovering, developing, and commercializing innovative and life-changing pharmaceuticals, in diseases with high unmet medical needs, through our novel research and development (R&D) platform, focused on neurological and endocrine related diseases and disorders. Utilizing a portfolio approach to drug discovery, we have multiple small molecule drug candidates at various stages of pharmaceutical development. We develop proprietary pharmaceuticals for our pipeline, as well as collaborate with other pharmaceutical companies on our products and product candidates.

On April 11, 2017, the United States Food and Drug Administration (FDA) approved INGREZZA® (valbenazine) capsules for the treatment of adults with tardive dyskinesia (TD). We market INGREZZA for TD in the United States (U.S.) through our specialty sales force focused primarily on physicians who treat TD patients, including psychiatrists and neurologists. The commercial launch of INGREZZA occurred on May 1, 2017.

On July 24, 2018, we were notified by AbbVie Inc. (AbbVie) that FDA approval was granted for ORILISSA® (elagolix) for the management of moderate to severe endometriosis pain in women. Discovered and developed through Phase II clinical trials by us, ORILISSA, the first FDA-approved oral medication for the management of endometriosis with associated moderate to severe pain in over a decade, began to be marketed by AbbVie in August 2018 as part of a collaboration to develop and commercialize elagolix for women’s health.

Our clinical development programs include opicapone as an adjunctive therapy to levodopa/DOPA decarboxylase inhibitors in adult Parkinson's disease patients, elagolix for uterine fibroids partnered with AbbVie, NBI-74788 for the treatment of congenital adrenal hyperplasia (CAH), and a vesicular monoamine transporter 2 (VMAT2) inhibitor and a first-in-class central nervous system (CNS) compound each with potential use in the treatment of neurologic and psychiatric disorders.

AbbVie initiated Phase III studies of elagolix in patients with uterine fibroids in early 2016. The Phase III program included two replicate, pivotal, six-month efficacy and safety studies followed by a six-month safety and efficacy extension study. AbbVie provided positive topline efficacy data from the Phase III studies in women with uterine fibroids in the first quarter of 2018 and additional data from the six-month safety extension study in the third quarter of 2018. We believe the results from these studies will form the basis for an anticipated new drug application (NDA) submission to the FDA in the middle of 2019 for the approval of elagolix in the treatment of uterine fibroids.

We currently have three major collaborations. Two of these collaborations involve out-licensing of our proprietary technology to pharmaceutical partners. In June 2010, we announced an exclusive worldwide collaboration with AbbVie to develop and commercialize elagolix and all next-generation gonadotropin-releasing hormone (GnRH) antagonists (collectively, GnRH compounds). In March 2015, we entered into a collaboration and license agreement with Mitsubishi Tanabe Pharma Corporation (Mitsubishi Tanabe) for the development and commercialization of INGREZZA for movement disorders in Japan and other select Asian markets. The third collaboration agreement, which was entered into in February 2017, is one in which we in-licensed technology from BIAL – Portela & Ca, S.A. (BIAL) for the development and commercialization of opicapone for the treatment of human diseases and conditions, including Parkinson's disease, in the U.S. and Canada.

On January 28, 2019, we entered into a collaboration and license agreement with a clinical-stage gene therapy company, Voyager Therapeutics, Inc., or Voyager. The collaboration is focused on the development and commercialization of four programs using Voyager's proprietary gene therapy platforms. The four programs consist of Voyager's VY-AADC program for Parkinson's disease and VY-FXN01 program for Friedreich's ataxia, as well as rights to two programs to be determined by the parties in the future. The effectiveness of the agreement is subject to certain conditions, including the expiration or termination of the applicable waiting period under the Hart-Scott-Rodino Antitrust Improvements Act of 1976, as amended, and other customary closing conditions. Refer to Note 13 to the consolidated financial statements for more information on the agreement.

Our Product Pipeline

The following table summarizes our approved products and our most advanced product candidates currently in clinical development and is followed by detailed descriptions of each program:

Program	Target Indication(s)	Status	Rights
Approved products:			
INGREZZA	Tardive Dyskinesia	Marketed	Neurocrine/Mitsubishi Tanabe (Asia-Pacific)
ORILISSA	Endometriosis	Marketed	AbbVie
Product candidates in clinical development:			
elagolix	Uterine Fibroids	Phase III	AbbVie
opicapone	Parkinson's Disease	Phase III	Neurocrine (U.S. and Canada)/BIAL
NBI-74788	Classic Congenital Adrenal Hyperplasia	Phase II	Neurocrine
New VMAT2 Inhibitor	Neurology/Psychiatry Disorders	Phase I	Neurocrine
New CNS Compound	Neurology/Psychiatry Disorders	Phase I	Neurocrine

"Marketed" indicates that we or our collaborator have received FDA regulatory approval of the product, for the specified target indication.

"Phase III" indicates that we or our collaborators are conducting large-scale, multicenter comparative clinical trials on patients afflicted with a target disease in order to provide substantial evidence for efficacy and safety of the product candidate.

"Phase II" indicates that we or our collaborators are conducting clinical trials on groups of patients afflicted with a specific disease in order to determine preliminary efficacy, optimal dosages, and expanded evidence of safety of the product candidate.

"Phase I" indicates that we are conducting or initiating clinical trials with a smaller number of subjects to determine early safety profile, maximally tolerated dose, and pharmacological properties of the product candidate in human volunteers.

INGREZZA (valbenazine) – VMAT2 Inhibitor

VMAT2 is a protein concentrated in the human brain that is essential for the transmission of nerve impulses between neurons. VMAT2 is primarily responsible for packaging and transporting monoamines (dopamine, norepinephrine, serotonin, and histamine) in neurons. Specifically, dopamine enables neurotransmission among nerve cells that are involved in voluntary and involuntary motor control. Disease states such as TD, Tourette syndrome, Huntington's chorea, schizophrenia, and tardive dystonia are characterized in part by a hyperdopaminergic state in the brain, and modulation of neuronal dopamine levels may provide symptomatic benefits for patients with these conditions, among others.

INGREZZA as a Treatment for TD. TD is defined by hyperkinetic involuntary movements which arise after months or years of treatment with dopamine receptor blocking agents, e.g. antipsychotics used for treating schizophrenia, bipolar disorder, and depression, and Reglan® (metoclopramide) for nausea and vomiting and gastric emptying in patients with gastroparesis. Features of

TD may include grimacing, tongue protrusion, lip smacking, puckering and pursing of the lips, and rapid eye blinking. Rapid movements of the extremities may also occur. The impact on daily function and the quality of life for individuals suffering from TD can be substantial. While the prevalence rates of TD can vary greatly in accordance with the population being studied, it is estimated that approximately 500,000 individuals are affected by TD in the U.S. alone (Kantar Health).

On April 11, 2017, INGREZZA became the first drug approved by the FDA for the treatment of TD. INGREZZA provides a once-daily dosing treatment option for TD causing reversible reduction of dopamine release at the nerve terminal by selectively inhibiting the pre-synaptic VMAT2. In vitro, INGREZZA is a highly selective inhibitor of human VMAT2 showing little or no affinity for VMAT1, other receptors, such as dopamine D2 receptors, other transporters or ion channels. INGREZZA for TD has two dosing options (40 mg and 80 mg) with 40 mg taken for the first seven days of treatment with an option of 40 mg or 80 mg thereafter depending on a patient's dosing needs. INGREZZA was generally well tolerated during our clinical trials with no apparent drug-drug interactions with the most common emergent adverse event being mild and transient somnolence.

In connection with the FDA approval of INGREZZA for TD, we committed to conduct certain post-marketing studies including Phase 1 (e.g., pharmacokinetics in volunteers with renal impairment) and Phase 4 (e.g., randomized placebo-controlled withdrawal in TD patients) studies. We expect to conduct these studies over the next four years.

Valbenazine as a Treatment for Tourette Syndrome. In the fourth quarter of 2017, we initiated T-Force GOLD, a Phase IIb study of valbenazine in pediatric patients with Tourette syndrome, a neurological disorder that consists of rapid, non-rhythmic stereotyped motor and vocal tics. T-Force GOLD was a multicenter, randomized, double-blind, placebo-controlled, parallel-group study evaluating the safety, tolerability and efficacy, with optimized dosing of once-daily valbenazine in approximately 120 pediatric patients with moderate to severe Tourette syndrome over 12 weeks of treatment. In the second quarter of 2018, we started T-Force PLATINUM, a double-blind, placebo-controlled, randomized withdrawal study of valbenazine in pediatric patients with Tourette syndrome. This study is designed to evaluate longer term efficacy and safety in patients who initial responded to open-label therapy with optimized doses of valbenazine. On December 12, 2018, we announced that topline data from the T-Force GOLD study failed to meet the primary endpoint as assessed by the placebo adjusted change from baseline in Yale Global Tic Severity Scale assessed at week 12. We continue to analyze the complete dataset from the study to determine the next steps for valbenazine in Tourette syndrome.

elagolix – GnRH Antagonist

GnRH is the endogenous peptide that binds to the GnRH receptor and stimulates the secretion of the pituitary hormones that are responsible for sex steroid production and normal reproductive function. Researchers have found that chronic administration of GnRH agonists, after initial stimulation, reversibly shuts down this transmitter pathway and is clinically useful in treating hormone-dependent diseases such as endometriosis and uterine fibroids. Several companies have developed peptide GnRH agonists on this principle, such as Lupron® and Zoladex®. However, since these molecules are peptides, they must be injected via a depot formulation rather than the preferred oral route of administration. In addition, GnRH agonists can take up to several weeks to exert their desired effect once the initial stimulation has occurred, a factor not seen with the use of GnRH antagonists. Upon administration, GnRH agonists have shown a tendency to exacerbate the condition via a hormonal flare. More importantly the profound suppression effect observed with GnRH agonists is similar to that seen after menopause and can be associated with hot flushes and the loss of bone mineral density.

Orally active, nonpeptide GnRH antagonists potentially offer several advantages over injectable GnRH peptide drugs, including rapid onset of hormone suppression without hormonal flare. Also, injection site reactions commonly observed in peptide depots are avoided and dosing can be rapidly discontinued if necessary – a clinical management option not available with long-acting depot injections. Additionally, by using GnRH antagonists, it may be possible to alter the level of pituitary GnRH suppression thereby titrating circulating hormone levels.

In June 2010, we entered into an exclusive worldwide collaboration with AbbVie to develop and commercialize GnRH compounds for women's and men's health indications. Under the terms of the agreement, AbbVie is responsible for all development, marketing and commercialization costs and has responsibility for all regulatory interactions with the FDA related to elagolix and other GnRH compounds covered by the collaboration. Following our entry into the collaboration, AbbVie undertook the development of elagolix in uterine fibroids.

Endometriosis. Endometriosis is associated with a multitude of symptoms, some of the most common of which include pain related both to menstruation (dysmenorrhea) and sexual intercourse (dyspareunia) as well as chronic pelvic pain throughout the menstrual cycle, infertility, and menorrhagia, among many others. The wide range of symptoms associated with endometriosis serves to complicate and delay diagnosis due to the significant overlap of symptoms with the disease profiles of other conditions. The World Endometriosis Research Foundation estimates that there are over 170 million women worldwide who suffer from endometriosis, including approximately 7.5 million women in the U.S. alone. We believe that the availability of an oral treatment, lacking the side effect profile of the currently available peptide GnRH agonists, may be a desirable alternative to current pharmaceutical therapies and ultimately encourage a significantly higher treatment rate.

During the third quarter of 2017, AbbVie submitted an NDA for elagolix for the treatment of endometriosis to the FDA. The NDA was accepted for priority review by the FDA. In July and October 2018, respectively, AbbVie announced FDA and Health Canada approval for ORILISSA, for the management of endometriosis with associated moderate to severe pain in women. AbbVie began commercialization of ORILISSA in the U.S. in August 2018.

Uterine Fibroids. Uterine fibroids are benign hormonally responsive tumors that form in the wall of the uterus. They are the most common solid tumor in women with a prevalence rate of at least 25% (American College of Obstetricians and Gynecologists). While many women do not have symptoms, depending on the size, location and number, uterine fibroids can cause symptoms such as: longer, more frequent, or heavy menstrual bleeding, menstrual pain, vaginal bleeding at time other than menstruation, pain in the abdomen or lower back, pain during sex, difficulty urinating, frequent urination, constipation or rectal pain. Due to the severity of symptoms, treatment sometimes requires surgery, including the removal of the uterus. In fact, uterine fibroids is a leading indication for hysterectomy in the U.S., with approximately 250,000 hysterectomies performed each year related to uterine fibroids (Whiteman *et al AJOG* 2008, *198,* e1). We believe that a safe and effective oral therapy would be a preferred treatment regimen rather than surgical intervention.

AbbVie initiated Phase III studies of elagolix in patients with uterine fibroids in early 2016. The Phase III program included two replicate, pivotal, six-month efficacy and safety studies followed by a six-month safety and efficacy extension study. AbbVie evaluated 300mg of elagolix dosed twice daily both alone and in combination with hormonal add-back therapy (estradiol/norethindrone acetate). The primary endpoint in these Phase III studies was the same as that employed in the Phase IIb study: percent of subjects with reduction in uterine blood flow as measured by the alkaline hematin method.

AbbVie provided positive top-line efficacy data from the two Phase III studies in women with uterine fibroids in the first quarter of 2018 and additional data from the six-month safety extension study in the third quarter of 2018. The ELARIS UF-I and UF-II studies of elagolix met all primary and ranked secondary endpoints at month six. These replicate Phase III studies were randomized, parallel, double-blind, placebo-controlled clinical trials evaluating elagolix alone or in combination with low-dose hormone (add-back) therapy in women with heavy uterine bleeding associated with uterine fibroids. The studies enrolled approximately 400 patients each for an initial six-month placebo-controlled dosing period. At the end of the six months of placebo-controlled evaluation, patients were eligible to enter an additional six-month safety extension study. The primary efficacy endpoint of the study was an assessment of the change in menstrual blood loss utilizing the alkaline hematin method comparing baseline to month six. Additional secondary efficacy endpoints were evaluated including the change in fibroid volume and hemoglobin. Bone mineral density was assessed via dual-energy x-ray absorptiometry scan at baseline, at the conclusion of dosing, and at six months post-dosing. We believe the results from these studies will form the basis for an anticipated NDA submission to the FDA in the middle of 2019 for the approval of elagolix in the treatment of uterine fibroids.

opicapone – Catechol-O-methyltransferase Inhibitor

Catechol-O-methyltransferase (COMT) inhibitors are utilized to prolong the duration of effect of levodopa, the primary treatment option for Parkinson's disease patients. Administration of levodopa often results in adequate control of Parkinson's symptoms, also referred to as "on-time," however, there are periods of the day where the effects of levodopa wear off and motor symptoms worsen. These periods are considered "off-time." Opicapone is a novel, once-daily, peripherally-acting, highly-selective COMT inhibitor utilized as adjunct therapy to levodopa/carbidopa in patients with Parkinson's disease experiencing motor fluctuations. Opicapone works through decreasing the conversion rate of levodopa into 3-O-methyldopa, thereby reducing the off-time period in patients with Parkinson's and extending the on-time period.

In February 2017, we entered into an exclusive license agreement with BIAL for the development and commercialization of opicapone for the treatment of human diseases and conditions, including Parkinson's disease, in the U.S. and Canada. Under the terms of the agreement, we will be responsible for the development and commercialization of opicapone in the U.S. and Canada.

Parkinson's Disease. Parkinson's disease is a chronic and progressive movement disorder that affects approximately 1 million people in the United States. The disease is characterized by a loss of neurons in the substantia nigra, the area of the brain where dopamine is produced. Dopamine production and synthesis is necessary for coordination and movement. As Parkinson's progresses, dopamine production steadily decreases resulting in tremor, slowed movement (bradykinesia), impaired posture and balance, and speech and writing problems. There is no present cure for Parkinson's and management consists of controlling the motor symptoms primarily through administration of levodopa therapies. While this improves the control of Parkinson's symptoms, as the disease progresses the beneficial effects of levodopa begin to wear off, symptoms worsen, and patients experience motor fluctuations. These motor fluctuations are improved with the addition of a COMT inhibitor to levodopa.

In June 2016, the European Medicines Agency authorized ONGENTYS® (opicapone) as an adjunct therapy to preparations of levodopa/DOPA decarboxylase inhibitors in adult patients with Parkinson's disease and end-of-dose motor fluctuations who cannot be stabilized on those combinations. This approval was based on data from a clinical development program that included 28 clinical studies of more than 900 patients treated with opicapone in 30 countries worldwide.

The two pivotal Phase III studies utilized for approval with the European Medicines Agency, BIPARK-I and BIPARK-II, demonstrated that opicapone once-daily achieved a statistically significant decrease in off-time periods for Parkinson's patients compared to placebo. The BIPARK-I study was a placebo-controlled study of approximately 600 patients that also included entacapone as an active comparator. The results of this study also showed that once-daily opicapone was non-inferior to entacapone which is dosed multiple times per day. The BIPARK-II study was a placebo-controlled study of approximately 400 patients that also showed a significant decrease in off-time periods for Parkinson's patients. In both studies, opicapone was associated with significant improvements in both patient and clinician global assessments of change. The data from these two Phase III trials also demonstrated that opicapone improved motor fluctuations in levodopa-treated patients regardless of concomitant dopamine agonist or monoamine oxidase type B inhibitors used. Opicapone was generally well tolerated and was not associated with relevant electrocardiographic or hepatic adverse events.

Both of the BIPARK Phase III trials included a one-year open-label extension where opicapone sustained the decrease in off-time and increase in on-time periods that was demonstrated during the double-blind placebo-controlled portion of the studies.

We held a meeting with the FDA in January 2018 to discuss a potential NDA submission for opicapone. Based upon the BIPARK-I and BIPARK-II pivotal Phase III studies conducted by BIAL, the FDA did not require additional Phase III trials in connection with an NDA submission for opicapone. We anticipate submitting an NDA to the FDA for opicapone in the second quarter of 2019.

NBI-74788 – Corticotropin-Releasing Factor Receptor$_1$ Antagonist

Corticotropin-releasing factor$_1$ (CRF_1) is a hypothalamic hormone released directly into the hypophyseal portal vasculature which acts on the CRF_1 receptor, a G protein-coupled receptor (GPCR), in the anterior pituitary to stimulate the release of adrenocorticotropin hormone (ACTH). The primary role of ACTH is the stimulation of the synthesis and release of adrenal steroids including cortisol. Cortisol from the adrenals have a negative feedback role at the level of the hypothalamus that decreases CRF_1 release as well as at the level of the pituitary to inhibit the release of ACTH. This tight control loop is known as the hypothalamic-pituitary-adrenal axis. Blockade of CRF_1 receptors at the pituitary has been shown to decrease the release of ACTH and subsequently attenuate the production and release of adrenal steroids.

Classic CAH. Classic CAH is a group of autosomal recessive genetic disorders that affects approximately 20,000-30,000 people in the U.S. and results in an enzyme deficiency altering the production of adrenal steroids. Because of this deficiency, the adrenal glands have little to no cortisol biosynthesis resulting in a potentially life-threatening condition. If left untreated, classic CAH can result in salt wasting, dehydration, and eventually death. Even with cortisol replacement, persistent elevation of ACTH from the pituitary gland results in excessive androgen levels leading to virilization of females including precocious puberty, menstrual irregularity, short stature, hirsutism, acne and fertility problems.

Corticosteroids are the current standard of care for classic CAH and are used chronically to both correct the endogenous cortisol deficiency and to reduce the excessive ACTH levels and androgen excess. However, the dose and duration of steroid use required to suppress ACTH is well above the normal physiological level of cortisol; resulting in metabolic syndrome, bone loss, growth impairment, and Cushing's syndrome as common and serious side effects.

NBI-74788 is a potent, selective, orally-active, CRF_1 receptor antagonist as demonstrated in a range of in vitro and in vivo assays. Blockade of CRF_1 receptors at the pituitary has been shown to decrease the release of ACTH, which in turn decreases the production of adrenal steroids including androgens, and potentially the symptoms associated with classic CAH. Lower ACTH levels would also reduce the amount of exogenous corticosteroid necessary for classic CAH patients to thrive avoiding the side-effects currently associated with excessive steroid therapy.

We conducted a Phase I single ascending dose study of NBI-74788 in healthy volunteers in 2017. Based on the positive results of this Phase I study, we initiated a Phase II clinical trial of NBI-74788 in adult patients with classic CAH. This clinical study is designed to be an open-label, pharmacokinetic/pharmacodynamic study assessing two ascending dose levels of 14 days dosing of NBI-74788 in up to 20 study participants. Key pharmacodynamic biomarker measurements include ACTH, 17-hydroxyprogesterone (17-OHP), androgen, and cortisol levels collected the morning following bedtime dosing on Day 1 and Day 14. We recently expanded this study to include up to 10 additional patients to further optimize dosing flexibility and convenience. Initial results from this study are expected in the first quarter of 2019.

We intend to apply for orphan drug designation for NBI-74788 in the treatment of classic CAH. Orphan drug designation is granted by the FDA to medicines intended for the treatment, diagnosis or prevention of rare diseases or disorders that affect fewer than 200,000 people in the U.S. and provides sponsors with development and commercial incentives for such designated compounds and medicines.

New VMAT2 Inhibitor

We have filed an investigational new drug application (IND) and completed dosing in the single ascending dose portion of a Phase I study designed to assess initial safety, tolerability, and pharmacokinetics of a novel, internally discovered VMAT2 inhibitor. This compound has the potential to be used in the treatment of several neurology and/or psychiatry disorders. The multiple dosing portion of this Phase 1 study is ongoing and expected to be completed during the first half of 2019.

New CNS Compound

We have filed an IND and completed dosing in a Phase I single ascending dose study for an internally discovered first-in-class CNS compound with potential use in the treatment of several neurology and/or psychiatry disorders. This study is a randomized, double-blind, single ascending dose study to evaluate the safety, tolerability, and pharmacokinetic profile of the compound in healthy participants. We are currently analyzing the data from this study to inform the design of future clinical studies for the program.

Research Programs

Our R&D focus is on addressing diseases and disorders of the central nervous and endocrine systems, which include therapeutic categories ranging from hypothalamic-pituitary-adrenal disorders to stress-related disorders and neurological/neuropsychiatric diseases. CNS and endocrinology drug therapies are among the largest therapeutic categories, accounting for over $110 billion in drug sales in the U.S. alone according to IQVIA (2018).

CNS and Neuroendocrine Disorders (Targeted by GPCRs, Solute Carrier Proteins, and Ion Channels)

GPCRs are the largest known gene superfamily of the human genome. Greater than 30% of all marketed prescription drugs act on GPCRs; which makes this class of proteins historically the most successful therapeutic target family. However, only a small fraction of the GPCR gene superfamily has been exploited. Ion channels appear to be represented by approximately 400 genes in the human genome and are currently the targets for approximately 7% of the current marketed drugs. We believe that next-generation therapies derived from targeting GPCRs and ion channels will be discovered through the understanding of the complex relationships of drug/receptor interactions and their subsequent impact on efficacy, downstream signaling networks and regulation.

Our GPCR research platform has met this requirement by integrating drug discovery research efforts with a suite of assays and assay systems and automated analytical techniques. This process, now also applied to solute carrier proteins and ion channels, provides an unbiased profile of pharmacological protein/ligand interactions coupled with *in vivo* efficacy using discrete animal models allowing for rapid discovery of initial leads and advancement into preclinical and clinical development. Importantly, this design cycle is not limited to GPCRs, solute carrier proteins, or ion channel targets, but can be utilized for other recently identified proteins that play a role in human disease where current treatments or therapies are either inadequate or nonexistent.

Our Business Strategy

Our goal is to become the leading biopharmaceutical company focused on neurological and endocrine-related diseases and disorders. The following are the key elements of our business strategy:

Maintaining Certain Commercial Rights to Our Product Portfolio to Evolve into a Fully-Integrated Pharmaceutical Company. In April 2017, we received approval from the FDA for INGREZZA for the treatment of TD. We market INGREZZA for TD in the U.S. The commercial launch of INGREZZA occurred on May 1, 2017. We have built a specialty sales force in the U.S. of approximately 250 experienced sales professionals. This specialty sales force focuses on promotion to physicians who treat TD patients, primarily neurologists and psychiatrists. Our commercial team is comprised of experienced professionals in marketing, access and reimbursement, managed markets, market research, commercial operations, and sales force planning and management. In addition, our commercial infrastructure includes capabilities in manufacturing, medical affairs, quality control, and compliance. We intend to retain commercial rights to certain products, including INGREZZA, that we can effectively and efficiently develop, secure regulatory approval and commercialize, which includes products with a concentrated prescriber base and well-defined patient population that can be accessed with an efficient patient and prescriber outreach program.

Advancing Life-Changing Discoveries in Neurology, Neuro-Endocrinology, and Psychiatry. We believe that by continuing to advance and extend our product pipeline, we can mitigate some of the clinical development risks associated with drug development. We currently have multiple programs in various stages of research and development. Our two lead late-stage clinical programs are elagolix, a GnRH antagonist in Phase III development for uterine fibroids that is partnered with AbbVie, and opicapone, a highly-selective COMT inhibitor that is an adjunct therapy to preparations of levodopa/DOPA decarboxylase inhibitors for adult patients with Parkinson's disease and was in-licensed from BIAL. In addition, we are conducting a Phase II study of NBI-74788 in adult patients with classic CAH, a group of autosomal recessive genetic disorders. We take a portfolio approach to managing our pipeline that balances the size of the market opportunities with clear and defined clinical and regulatory paths to approval. By doing so, we focus our internal development resources on innovative therapies with improved probabilities of technical and commercial success.

Selectively Establishing Corporate Collaborations with Global Pharmaceutical Companies to Assist in the Development of Our Products and Mitigate Financial Risk while Retaining Significant Commercial Upside. We leverage the development, regulatory, and commercialization expertise of our corporate collaborators to accelerate the development of certain of our product candidates, while typically retaining co-promotional rights, and at times commercial rights, in North America. For example, we have collaborated with AbbVie for the development and commercialization of ORILISSA, which has received FDA and Health Canada approval for the management of endometriosis, and with respect to our collaboration with Mitsubishi Tanabe Pharma Corporation (Mitsubishi Tanabe) for the development and commercialization of INGREZZA for movement disorders in Japan and other select Asian markets. We intend to further leverage our resources by selectively entering into additional strategic alliances to enhance our internal development and commercialization capabilities by licensing our technology.

Identifying Novel Drugs to Address Unmet Market Opportunities. We seek to identify and validate novel drugs on characterized targets for internal development or collaboration. For example, in 2018, we initiated Phase I studies for a new VMAT2 inhibitor and a new CNS compound. In 2017, based on the positive results of a Phase I study we conducted of NBI-74788 in healthy volunteers, we initiated a Phase II study of NBI-74788 in adult patients with classic CAH. We believe the creativity and productivity of our discovery research group will continue to be a critical component for our continued success.

Acquiring Rights to Complementary Drug Candidates and Technologies. We plan to continue to selectively acquire rights to products in various stages of development to take advantage of our drug development capabilities. For example, in October 2018, we entered into a research collaboration with Jnana Therapeutics, Inc. aimed at discovering novel small molecule therapeutics for multiple targets for CNS disorders. Under the terms of the agreement, we will work jointly to identify novel compounds, after which time we will be responsible for further lead optimization, and the development and commercialization of any potential therapies arising from the collaboration. In February 2017, we entered into an exclusive license agreement with BIAL for the development and commercialization of opicapone for the treatment of human diseases and conditions, including Parkinson's disease, in the U.S. and Canada. Under the terms of the agreement, we will be responsible for the development and commercialization of opicapone in the U.S. and Canada.

Our Corporate Collaborations and Strategic Alliances

One of our business strategies is to utilize strategic alliances to enhance our development and commercialization capabilities. The following is a summary of our significant collaborations/alliances:

AbbVie. In June 2010, we announced an exclusive worldwide collaboration with AbbVie to develop and commercialize GnRH Compounds for women's and men's health. AbbVie made an upfront payment of $75 million and has agreed to make additional development and regulatory event-based payments of up to $480 million and up to an additional $50 million in commercial event-based payments. Under the terms of the agreement, AbbVie is responsible for all development, marketing and commercialization costs. We received funding for certain internal collaboration expenses which included reimbursement from AbbVie for internal and external expenses related to the GnRH Compounds and personnel funding through the end of 2012. We are entitled to a percentage of worldwide sales of GnRH Compounds for the longer of ten years or the life of the related patent rights. AbbVie may terminate the collaboration at its discretion upon 180 days written notice to us. In such event, we would be entitled to specified payments for ongoing clinical development and related activities and all GnRH Compound product rights would revert to us. Since the inception of the agreement, we have recorded revenues of $75 million related to the amortization of up-front license fees, $115 million in milestone revenue, $37 million in sponsored development revenue, and approximately $1.6 million in sales-based royalty revenue on AbbVie net sales of ORILISSA.

Mitsubishi Tanabe. In March 2015, we entered into a collaboration and license agreement with Mitsubishi Tanabe for the development and commercialization of INGREZZA for movement disorders in Japan and other select Asian markets. Mitsubishi Tanabe made an up-front license fee payment of $30 million and has agreed to make additional development and commercialization event-based payments totaling up to $85 million, payments for the manufacture of pharmaceutical products, and royalties on product sales in select territories in Asia. Under the terms of the agreement, Mitsubishi Tanabe is responsible for all development, marketing, and commercialization costs in Japan and other select Asian markets, with the exception of a single Huntington's chorea trial to be performed by us, at an estimated cost of approximately $12 million, should Mitsubishi Tanabe request the clinical trial. We will be entitled to a percentage of sales of INGREZZA in Japan and other select Asian markets for the longer of ten years or the life of the related patent rights. Mitsubishi Tanabe may terminate the agreement at its discretion upon 180 days written notice to us. In such event, all INGREZZA product rights for Japan and other select Asian markets would revert to us. Since the inception of the agreement, we have recorded revenues of $19.8 million related to the up-front license fee, and $15 million in milestone revenue.

BIAL. In February 2017, we entered into an exclusive license agreement with BIAL for the development and commercialization of opicapone for the treatment of human diseases and conditions, including Parkinson's disease, in the U.S. and Canada. Under the terms of the agreement, we are responsible for the management and cost of all opicapone development and commercialization activities in the U.S. and Canada. Under the terms of the agreement, we paid BIAL an upfront license fee of $30 million. In addition, during the first quarter of 2018, the FDA provided guidance on the regulatory path forward to support an NDA for opicapone for Parkinson's disease, in which the FDA did not request that we conduct an additional Phase III study in connection with the submission of an NDA to the FDA, resulting in a $10 million event-based milestone payment to BIAL. We may also be required to pay up to an additional $105 million in milestone payments associated with the regulatory approval and net sales of products containing opicapone. In addition, we will pay BIAL a percentage of net sales (with a floor minimum) in exchange for the manufacture and supply of

opicapone drug product. Either party may terminate the agreement earlier if the other party materially breaches the agreement and does not cure the breach within a specified notice period, or upon the other party's insolvency. BIAL may terminate the agreement if we fail to use commercially reasonable efforts or fail to file an NDA for a licensed product by a specified date or under certain circumstances involving a change of control.

Intellectual Property

We seek to protect our lead compounds, compound libraries, expressed proteins, synthetic organic processes, formulations, assays, cloned targets, screening technology and other technologies by filing, or by causing to be filed on our behalf, patent applications in the U.S. and abroad. Additionally, we have licensed from institutions the rights to issued U.S. patents, pending U.S. patent applications, and issued and pending foreign filings. We face the risk that one or more of the above patent applications may be denied. We also face the risk that issued patents that we own, or license, may be challenged or circumvented or may otherwise not provide protection for any commercially viable products we develop.

The technologies we use in our research, as well as the drug targets we select, may infringe the patents or violate the proprietary rights of third parties. If this occurs, we may be required to obtain licenses to patents or proprietary rights of others in order to continue with the commercialization of our products.

In addition to the granted and potential patent protection, the U.S., the European Union (EU), and Japan all provide data and marketing exclusivity for new medicinal compounds. If this protection is available, no competitor may use the original applicant's data as the basis of a generic marketing application during the period of data and marketing exclusivity. This period of exclusivity is generally five years in the U.S., six years in Japan and ten years in the EU, measured from the date of FDA, or corresponding foreign regulatory authority, approval.

INGREZZA, our highly selective VMAT2 inhibitor is covered by U.S. Patent No. 8,039,627, which expires in 2029 (not including a potential patent term extension of up to two years) and U.S. Patent No. 8,357,697, which expires in 2027.

Elagolix, our small molecule GnRH antagonist currently in clinical trials for the treatment of endometriosis and uterine fibroids, is covered by six issued U.S. patents relating to composition of matter, pharmaceutical compositions, and methods of use. U.S. Patent Nos. 6,872,728, 7,179,815 and 7,462,625 are due to expire in 2021 (not including potential patent term extensions of up to five years) while U.S. Patent Nos. 7,056,927, 7,176,211 and 7,419,983 are due to expire in 2024 (not including potential patent term extensions of up to five years).

Opicapone, a highly selective COMT inhibitor for Parkinson's disease is covered by U.S. Patent No. 8,168,793, among others, which expires in 2029 (not including a potential patent term extension of up to five years).

Manufacturing and Distribution

We currently rely on, and expect to continue to rely on, contract manufacturers to produce INGREZZA, as well as for our existing and future product candidates. We believe this outsourcing manufacturing strategy will enable us to direct our financial resources to our commercialization efforts without devoting the resources and capital required to build manufacturing facilities.

We have established an internal pharmaceutical development group to develop manufacturing methods for our product candidates, to optimize manufacturing processes, and to select and transfer these manufacturing technologies to our suppliers. We have also established an internal commercial supply team to manage all aspects related to the INGREZZA commercial supply chain. We have entered into long-term contracts with multiple manufacturers to ensure adequate product supply and to mitigate risk, and we expect to continue to expand and diversify our third-party manufacturing relationships during 2019.

There currently are a limited number of these manufacturers. Furthermore, some of the contract manufacturers that we have identified to date only have limited experience at manufacturing, formulating, analyzing and packaging our products and product candidates in quantities sufficient for conducting clinical trials or for commercialization. We attempt to acquire adequate inventory of materials and/or finished product to avoid significant supply disruption.

Additionally, we have retained third-party service providers to perform a variety of functions related to the distribution of INGREZZA, including shipping, warehousing, customer service, order-taking and processing, invoicing, collections, and other distribution-related activities.

We have entered into distribution agreements for INGREZZA with a limited number of specialty pharmacies (SPs) and a specialty distributor (SD) (collectively, customers), and all of our product sales are to these customers. SPs subsequently dispense INGREZZA to patients based on the fulfillment of a prescription and the SD sells INGREZZA primarily to closed-door pharmacies and government facilities. Our agreements with SPs and the SD provide for transfer of title to the product at the time the product is delivered to the SPs or SD. Our three largest customers represented approximately 93% of our product revenue for the year ended December 31, 2018.

INGREZZA Manufacturers

We entered into a commercial supply agreement with Fabbrica Italiana Sintetici S.p.A. (F.I.S.) in March 2017, for F.I.S.'s manufacture of commercial supplies of the active pharmaceutical ingredient, or API, for INGREZZA at F.I.S.'s manufacturing site in Italy. Under the terms of the agreement, F.I.S. is responsible for manufacturing the INGREZZA API, conducting quality control, quality assurance, validation activities, stability testing, packaging, and other services related to the manufacture of the INGREZZA API. In the second quarter of 2018, we received our first order of INGREZZA API under this agreement.

The agreement requires two years' notice prior to a termination without cause, provided that no such notice may be given prior to March 2022.

We entered into a master manufacturing services agreement with Patheon UK Limited (Patheon) in November 2016, and two associated product agreements in 2017 and 2018, for Patheon's manufacture of commercial supplies of INGREZZA at its manufacturing sites. Under the terms of the agreements, we are responsible for supplying the API for INGREZZA to Patheon. Patheon is responsible for manufacturing the INGREZZA capsules, conducting quality control, quality assurance, validation activities, stability testing, packaging and providing related services for the manufacture of the INGREZZA capsules.

Pursuant to the agreements, we have agreed to order from Patheon certain annual binding minimum amounts of INGREZZA capsules based on an agreed upon pricing schedule. The agreements have an initial term ending in December 2021 and will automatically renew after the initial term for successive terms of two years, unless either party gives notice of its intention to terminate the agreements within at least 18 months prior to the end of the then current term.

Commercial Packaging Agreements

We entered into two commercial packaging agreements with third-party vendors that provide, among other things, services related to the packaging of INGREZZA, tooling purchases and repairs, analytical work, auditing of suppliers, and storage. One such vendor is located in Illinois and the other is located in Pennsylvania. We do not believe that these commercial packaging related agreements are material because our business is not substantially dependent on any individual agreement.

Marketing and Sales

During 2017, we built a specialty sales force in the U.S of experienced sales professionals. This specialty sales force focuses on educating physicians who treat TD patients, primarily neurologists and psychiatrists. Our commercial team is comprised of experienced professionals in marketing, access and reimbursement, managed markets, market research, commercial operations, and sales force planning and management. During 2018, we expanded our sales force by approximately 50% to approximately 250 experienced sales professionals to enhance our ability to develop the TD market. In addition, our commercial infrastructure includes capabilities in manufacturing, medical affairs, quality control, and compliance.

Government Regulation

Our business activities, which include the manufacture and marketing of INGREZZA as well as our other potential products currently in research and development, are subject to extensive regulation by the U.S. and other countries. Regulation by government authorities in the U.S. and foreign countries is a significant factor in the development, manufacture, distribution, marketing and sale of our proposed products and in our ongoing research and product development activities. All of our products in development will require regulatory approval by government agencies prior to commercialization. In particular, human therapeutic products are subject to rigorous preclinical studies and clinical trials and other approval procedures of the FDA and similar regulatory authorities in foreign countries. The process of obtaining these approvals and the subsequent compliance with appropriate federal and state statutes and regulations require the expenditure of substantial time and financial resources. In the U.S., various federal and state statutes and regulation also govern or influence testing, manufacturing, safety, labeling, storage, and record-keeping of human therapeutic products and their marketing. Recent federal legislation imposes additional obligations on pharmaceutical manufacturers regarding product tracking and tracing.

In addition, federal and state healthcare laws restrict business practices in the pharmaceutical industry. These laws include, without limitation, federal and state fraud and abuse laws, false claims laws, data privacy and security laws, as well as transparency laws regarding payments or other items of value provided to healthcare providers. We have a comprehensive compliance program to ensure our business practices remain compliant.

The federal Anti-Kickback Statute makes it illegal for any person or entity, including a prescription drug manufacturer (or a party acting on its behalf) to knowingly and willfully, directly or indirectly, solicit, receive, offer, or pay any remuneration that is intended to induce the referral of business, including the purchase, order, lease of any good, facility, item or service for which payment may be made under a federal healthcare program, such as Medicare or Medicaid. The term "remuneration" has been broadly interpreted to include anything of value.

Federal civil and criminal false claims laws, including the federal civil False Claims Act, and the federal civil monetary penalties law, which prohibit among other things, any person or entity from knowingly presenting, or causing to be presented, for payment to, or approval by, federal programs, including Medicare and Medicaid, claims for items or services, including drugs, that are false or fraudulent or not provided as claimed and knowingly making, or causing to be made, a false record or statement material to a false or fraudulent claim to avoid, decrease or conceal an obligation to pay money to the federal government.

The Health Insurance Portability and Accountability Act of 1996 (HIPAA) created additional federal criminal statutes that prohibit among other actions, knowingly and willfully executing, or attempting to execute, a scheme to defraud any healthcare benefit program, including private third-party payors, knowingly and willfully stealing from a healthcare benefit program, willfully obstructing a criminal investigation of a healthcare offense, and knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false, fictitious or fraudulent statement in connection with the delivery of or payment for healthcare benefits, items or services.

Also, many states have similar fraud and abuse statutes or regulations that may be broader in scope and may apply regardless of payor, in addition to items and services reimbursed under Medicaid and other state programs. Additionally, to the extent that our product is sold in a foreign country, we may be subject to similar foreign laws.

HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act and their implementing regulations, requires certain types of individuals and entities to abide by standards relating to the privacy and security of individually identifiable health information, including the adoption of administrative, physical and technical safeguards to protect such information. In addition, certain state laws govern the privacy and security of health information in certain circumstances, some of which are more stringent than HIPAA and many of which differ from each other in significant ways and may not have the same effect, thus complicating compliance efforts.

The federal Physician Payments Sunshine Act requires certain manufacturers of drugs, devices, biologics and medical supplies for which payment is available under Medicare, Medicaid or the Children's Health Insurance Program, with specific exceptions, to report annually to the Centers for Medicare and Medicaid Services (CMS) information related to payments or other transfers of value made to physicians and teaching hospitals, and applicable manufacturers and applicable group purchasing organizations to report annually to CMS ownership and investment interests held by the physicians and their immediate family members.

Failure to comply with these laws, where applicable, can result in significant penalties, including the imposition of significant civil, criminal and administrative penalties, damages, monetary fines, disgorgement, individual imprisonment, possible exclusion from participation in Medicare, Medicaid and other federal healthcare programs, additional reporting requirements and oversight if we become subject to a corporate integrity agreement or similar agreement to resolve allegations of non-compliance with these laws, contractual damages, reputational harm, diminished profits and future earnings, and curtailment of our operations, any of which could adversely affect our ability to operate our business and our results of operations.

Development and Marketing Approval for Products

Preclinical studies generally are conducted in laboratory animals to evaluate the potential safety and efficacy of a product. Drug developers submit the results of preclinical studies to the FDA as a part of an IND application before clinical trials can begin in humans. Typically, clinical evaluation involves a time consuming and costly three-phase process.

Phase I Clinical trials are conducted with a small number of subjects to determine the early safety profile, maximum tolerated dose and pharmacokinetic properties of the product in human volunteers. It is rare to evidence pharmacology in these early studies.

Phase II Clinical trials are conducted with groups of patients afflicted with a specific disease in order to determine preliminary efficacy, optimal dosages and expanded evidence of safety.

Phase III Large-scale, multi-center, comparative clinical trials are conducted with patients afflicted with a specific disease in order to determine safety and efficacy as primary support for regulatory approval by the FDA to market a product candidate for a specific disease.

The FDA closely monitors the progress of each of the three phases of clinical trials that are conducted in the U.S. and may, at its discretion, re-evaluate, alter, suspend or terminate the testing based upon the data accumulated to that point and the FDA's assessment of the risk/benefit ratio to the patient. Institutional Review Boards, Institutional Ethics Committees, and Data Safety Monitoring Boards may also place holds on our clinical trials or recommend that we voluntarily do so. To date, we have also conducted some of our clinical trials in Europe, Canada, Oceania, and South Africa. Clinical trials conducted in foreign countries are also subject to oversight by regulatory authorities in those countries.

Once Phase III trials are completed, drug developers submit the results of preclinical studies and clinical trials to the FDA in the form of an NDA or a biologics license application for approval to commence commercial sales. In most cases, the submission of an NDA is subject to a substantial application user fee. Under the Prescription Drug User Fee Act (PDUFA) guidelines that are currently

in effect, the FDA has a goal of ten months from the date of filing of a standard NDA for a new molecular entity to review and act on the submission. This review typically takes twelve months from the date the NDA is submitted to FDA because the FDA has approximately two months to make a "filing" decision.

In addition, under the Pediatric Research Equity Act of 2003 as amended and reauthorized, certain NDAs or supplements to an NDA must contain data that are adequate to assess the safety and effectiveness of the drug for the claimed indications in all relevant pediatric subpopulations, and to support dosing and administration for each pediatric subpopulation for which the product is safe and effective. The FDA may, on its own initiative or at the request of the applicant, grant deferrals for submission of some or all pediatric data until after approval of the product for use in adults or full or partial waivers from the pediatric data requirements.

The FDA also may require submission of a risk evaluation and mitigation strategy plan to ensure that the benefits of the drug outweigh its risks. The risk evaluation and mitigation strategy plan could include medication guides, physician communication plans, assessment plans, and/or elements to assure safe use, such as restricted distribution methods, patient registries, or other risk minimization tools.

The FDA conducts a preliminary review of all NDAs within the first 60 days after submission, before accepting them for filing, to determine whether they are sufficiently complete to permit substantive review. The FDA may request additional information rather than accept an NDA for filing. In this event, the application must be resubmitted with the additional information. The resubmitted application is also subject to review before the FDA accepts it for filing. Once the submission is accepted for filing, the FDA begins an in-depth substantive review. The FDA reviews an NDA to determine, among other things, whether the drug is safe and effective and whether the facility in which it is manufactured, processed, packaged or held meets standards designed to assure the product's continued safety, quality and purity.

The FDA may refer an application for a novel drug to an advisory committee. An advisory committee is a panel of independent experts, including clinicians and other scientific experts, that reviews, evaluates and provides a recommendation as to whether the application should be approved and under what conditions. The FDA is not bound by the recommendations of an advisory committee, but it considers such recommendations carefully when making decisions.

Before approving an NDA, the FDA typically will inspect the facility or facilities where the product is manufactured. The FDA will not approve an application unless it determines that the manufacturing processes and facilities are in compliance with current Good Manufacturing Practice requirements and adequate to assure consistent production of the product within required specifications. Additionally, before approving an NDA, the FDA may inspect one or more clinical trial sites to assure compliance with Good Clinical Practice requirements.

After evaluating the NDA and all related information, including the advisory committee recommendation, if any, and inspection reports regarding the manufacturing facilities and clinical trial sites, the FDA may issue an approval letter, or, in some cases, a complete response letter. A complete response letter generally contains a statement of specific conditions that must be met in order to secure final approval of the NDA and may require additional clinical or preclinical testing in order for FDA to reconsider the application. Even with submission of this additional information, the FDA ultimately may decide that the application does not satisfy the regulatory criteria for approval. If and when those conditions have been met to the FDA's satisfaction, the FDA will typically issue an approval letter. An approval letter authorizes commercial marketing of the drug with specific prescribing information for specific indications.

Even if the FDA approves a product, it may limit the approved indications for use of the product, require that contraindications, warnings or precautions be included in the product labeling, require that post-approval studies, including Phase IV clinical trials, be conducted to further assess a drug's safety after approval, require testing and surveillance programs to monitor the product after commercialization, or impose other conditions, including distribution and use restrictions or other risk management mechanisms under a risk evaluation and mitigation strategy, which can materially affect the potential market and profitability of the product. The FDA may prevent or limit further marketing of a product based on the results of post-marketing studies or surveillance programs. After approval, some types of changes to the approved product, such as adding new indications, manufacturing changes, and additional labeling claims, are subject to further testing requirements and FDA review and approval.

We will also have to complete an approval process similar to that in the U.S. in virtually every foreign target market for our products in order to commercialize our product candidates in those countries. The approval procedure and the time required for approval vary from country to country and may involve additional testing. Foreign approvals may not be granted on a timely basis, or at all. In addition, regulatory approval of prices is required in most countries other than the U.S. The resulting prices may not be sufficient to generate an acceptable return to us or our corporate collaborators.

Orphan Drug Designation

Under the Orphan Drug Act, the FDA may grant orphan drug designation to a drug intended to treat a rare disease or condition, which is a disease or condition that affects fewer than 200,000 individuals in the U.S., or if it affects more than 200,000, there is no

reasonable expectation that sales of the drug in the U.S. will be sufficient to offset the costs of developing and making the drug available in the U.S. Orphan drug designation must be requested before submitting an NDA. Orphan drug designation does not convey any advantage in or shorten the duration of the regulatory review and approval process.

If the FDA approves a sponsor's marketing application for a designated orphan drug for use in the rare disease or condition for which it was designated, the sponsor is eligible for a seven-year period of marketing exclusivity, during which the FDA may not approve another sponsor's marketing application for a drug with the same active moiety and intended for the same use or indication as the approved orphan drug, except in limited circumstances, such as if a subsequent sponsor demonstrates its product is clinically superior. During a sponsor's orphan drug exclusivity period, competitors, however, may receive approval for drugs with different active moieties for the same indication as the approved orphan drug, or for drugs with the same active moiety as the approved orphan drug, but for different indications. Orphan drug exclusivity could block the approval of one of our products for seven years if a competitor obtains approval for a drug with the same active moiety intended for the same indication before we do, unless we are able to demonstrate that grounds for withdrawal of the orphan drug exclusivity exist, or that our product is clinically superior. Further, if a designated orphan drug receives marketing approval for an indication broader than the rare disease or condition for which it received orphan drug designation, it may not be entitled to exclusivity.

Special FDA Expedited Review and Approval Programs

The FDA has various programs, including fast track designation, accelerated approval, priority review, and breakthrough therapy designation, which are intended to expedite or simplify the process for the development and FDA review of drugs that are intended for the treatment of serious or life-threatening diseases or conditions and demonstrate the potential to address unmet medical needs. The purpose of these programs is to provide important new drugs to patients earlier than under standard FDA review procedures.

To be eligible for a fast track designation, the FDA must determine, based on the request of a sponsor, that a product is intended to treat a serious or life-threatening disease or condition and demonstrates the potential to address an unmet medical need. The FDA will determine that a product will fill an unmet medical need if it will provide a therapy where none exists or provide a therapy that may be potentially superior to existing therapy based on efficacy or safety factors. The FDA may review sections of the NDA for a fast track product on a rolling basis before the complete application is submitted, if the sponsor provides a schedule for the submission of the sections of the NDA, the FDA agrees to accept sections of the NDA and determines that the schedule is acceptable, and the sponsor pays any required user fees upon submission of the first section of the NDA.

The FDA may give a priority review designation to drugs that offer major advances in treatment or provide a treatment where no adequate therapy exists. A priority review means that the goal for the FDA to review an application is six months, rather than the standard review of ten months under current PDUFA guidelines. These six and ten-month review periods are measured from the filing date rather than the receipt date for NDAs for new molecular entities, which typically adds approximately two months to the timeline for review and decision from the date of submission. Most products that are eligible for fast track designation are also likely to be considered appropriate to receive a priority review.

In addition, products studied for their safety and effectiveness in treating serious or life-threatening illnesses and that provide meaningful therapeutic benefit over existing treatments may be eligible for accelerated approval and may be approved on the basis of adequate and well-controlled clinical trials establishing that the drug product has an effect on a surrogate endpoint that is reasonably likely to predict clinical benefit, or on a clinical endpoint that can be measured earlier than irreversible morbidity or mortality, that is reasonably likely to predict an effect on irreversible morbidity or mortality or other clinical benefit, taking into account the severity, rarity or prevalence of the condition and the availability or lack of alternative treatments. As a condition of approval, the FDA may require a sponsor of a drug receiving accelerated approval to perform post-marketing studies to verify and describe the predicted effect on irreversible morbidity or mortality or other clinical endpoint, and the drug may be subject to accelerated withdrawal procedures.

A breakthrough therapy is defined as a drug that is intended, alone or in combination with one or more other drugs, to treat a serious or life-threatening disease or condition, and preliminary clinical evidence indicates that the drug may demonstrate substantial improvement over existing therapies on one or more clinically significant endpoints, such as substantial treatment effects observed early in clinical development. Drugs designated as breakthrough therapies are also eligible for accelerated approval. The FDA must take certain actions, such as holding timely meetings and providing advice, intended to expedite the development and review of an application for approval of a breakthrough therapy.

Even if a product qualifies for one or more of these programs, the FDA may later decide that the product no longer meets the conditions for qualification or decide that the time period for FDA review or approval will not be shortened.

Post-Approval Requirements

Drugs manufactured or distributed pursuant to FDA approvals are subject to pervasive and continuing regulation by the FDA, including, among other things, requirements relating to recordkeeping, periodic reporting, product sampling and distribution,

advertising and promotion and reporting of adverse experiences with the product. After approval, most changes to the approved product, such as adding new indications or other labeling claims are subject to prior FDA review and approval. There also are continuing, annual program user fee requirements for any marketed products, as well as new application fees for supplemental applications with clinical data.

The FDA may impose a number of post-approval requirements as a condition of approval of an NDA. For example, the FDA may require post-marketing testing, including Phase IV clinical trials, and surveillance to further assess and monitor the product's safety and effectiveness after commercialization.

In addition, drug manufacturers and other entities involved in the manufacture and distribution of approved drugs are required to register their establishments with the FDA and state agencies and are subject to periodic unannounced inspections by the FDA and these state agencies for compliance with current Good Manufacturing Practices (cGMP) requirements. Changes to the manufacturing process are strictly regulated and often require prior FDA approval before being implemented. FDA regulations also require investigation and correction of any deviations from cGMP requirements and impose reporting and documentation requirements upon the sponsor and any third-party manufacturers that the sponsor may decide to use. Accordingly, manufacturers must continue to expend time, money, and effort in the area of production and quality control to maintain cGMP compliance.

Once an approval is granted, the FDA may withdraw the approval if compliance with regulatory requirements and standards is not maintained or if problems occur after the product reaches the market. Later discovery of previously unknown problems with a product, including adverse events of unanticipated severity or frequency, or with manufacturing processes, or failure to comply with regulatory requirements, may result in mandatory revisions to the approved labeling to add new safety information; imposition of post-market studies or clinical trials to assess new safety risks; or imposition of distribution or other restrictions under a risk evaluation and mitigation strategies program. Other potential consequences include, among other things:

- restrictions on the marketing or manufacturing of the product, complete withdrawal of the product from the market or product recalls;
- fines, warning letters or holds on post-approval clinical trials;
- refusal of the FDA to approve pending NDAs or supplements to approved NDAs, or suspension or revocation of product approvals;
- product seizure or detention, or refusal to permit the import or export of products; or
- injunctions or the imposition of civil or criminal penalties.

The FDA strictly regulates marketing, labeling, advertising and promotion of products that are placed on the market. Drugs may be promoted only for the approved indications and in accordance with the provisions of the approved label. The FDA and other agencies actively enforce the laws and regulations prohibiting the promotion of off-label uses, and a company that is found to have improperly promoted off-label uses may be subject to significant liability.

Reimbursement

Significant uncertainty exists as to the coverage and reimbursement status of any product candidates for which we obtain regulatory approval. In the U.S. and markets in other countries, sales of any products for which we receive regulatory approval will depend, in part, on the extent to which third-party payors provide coverage and establish adequate reimbursement levels for such drug products.

In the U.S., third-party payors include federal and state healthcare programs, government authorities, private managed care providers, private health insurers and other organizations. Third-party payors are increasingly challenging the price, examining the medical necessity and reviewing the cost-effectiveness of medical drug products and medical services, in addition to questioning their safety and efficacy. Such payors may limit coverage to specific drug products on an approved list, also known as a formulary, which might not include all of the FDA-approved drugs for a particular indication. We may need to conduct expensive pharmaco-economic studies in order to demonstrate the medical necessity and cost-effectiveness of our products, in addition to the costs required to obtain the FDA approvals. Nonetheless, our products or product candidates, including INGREZZA, may not be considered medically necessary or cost-effective.

Moreover, the process for determining whether a third-party payor will provide coverage for a drug product may be separate from the process for setting the price of a drug product or for establishing the reimbursement rate that such a payor will pay for the drug product. A payor's decision to provide coverage for a drug product does not imply that an adequate reimbursement rate will be approved. Further, one payor's determination to provide coverage for a drug product does not assure that other payors will also provide coverage for the drug product. Adequate third-party payor reimbursement may not be available to enable us to maintain price levels sufficient to realize an appropriate return on our investment in product development.

The marketability of any product or product candidates for which we or our collaborators receive regulatory approval for commercial sale may suffer if third-party payors fail to provide coverage and adequate reimbursement. In addition, emphasis on managed care in the U.S. has increased and we expect will continue to increase the pressure on pharmaceutical pricing. Coverage policies and third-party payor reimbursement rates may change at any time. Even if favorable coverage and reimbursement status is attained for one or more products for which we receive regulatory approval, less favorable coverage policies and reimbursement rates may be implemented in the future.

Healthcare Reform

The U.S. and some foreign jurisdictions are considering or have enacted a number of legislative and regulatory proposals to change the healthcare system in ways that could affect our ability to sell our products profitably. Among policy makers and payors in the U.S. and elsewhere, there is significant interest in promoting changes in healthcare systems with the stated goals of containing healthcare costs, improving quality or expanding access. In the U.S., the pharmaceutical industry has been a particular focus of these efforts and has been significantly affected by major legislative initiatives.

By way of example, in March 2010, the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act of 2010, collectively the ACA, was signed into law, which intended to broaden access to health insurance, reduce or constrain the growth of healthcare spending, enhance remedies against fraud and abuse, add transparency requirements for the healthcare and health insurance industries, impose taxes and fees on the health industry and impose additional health policy reforms. Among the provisions of the ACA of importance to our potential drug candidates are:

- an annual, nondeductible fee on any entity that manufactures, or imports, specified branded prescription drugs and biologic agents, apportioned among these entities according to their market share in certain government healthcare programs;
- an increase in the statutory minimum rebates a manufacturer must pay under the Medicaid Drug Rebate Program to 23.1% and 13.0% of the average manufacturer price for branded and generic drugs, respectively;
- a new methodology by which rebates owed by manufacturers under the Medicaid Drug Rebate Program are calculated for drugs that are inhaled, infused, instilled, implanted or injected;
- extension of a manufacturer's Medicaid rebate liability to covered drugs dispensed to individuals who are enrolled in Medicaid managed care organizations;
- expansion of eligibility criteria for Medicaid programs by, among other things, allowing states to offer Medicaid coverage to certain individuals with income at or below 133% of the federal poverty level, thereby potentially increasing a manufacturer's Medicaid rebate liability;
- a new Medicare Part D coverage gap discount program, in which manufacturers must agree to offer 70% point-of-sale discounts off negotiated prices of applicable brand drugs to eligible beneficiaries during their coverage gap period, as a condition for a manufacturer's outpatient drugs to be covered under Medicare Part D;
- expansion of the entities eligible for discounts under the Public Health Service pharmaceutical pricing program; and
- a new Patient-Centered Outcomes Research Institute to oversee, identify priorities in, and conduct comparative clinical effectiveness research, along with funding for such research.

We expect that the ACA, as well as other healthcare reform measures that may be adopted in the future, may result in more rigorous coverage criteria and lower reimbursement, and in additional downward pressure on the price that we receive for any approved product. Any reduction in reimbursement from Medicare or other government-funded programs may result in a similar reduction in payments from private third-party payor.

Some of the provisions of the ACA have yet to be fully implemented, and there have been legal and political challenges to certain aspects of the ACA. Since January 2017, the current presidential administration has signed two executive orders and other directives designed to delay, circumvent, or loosen certain requirements mandated by the ACA. Concurrently, Congress has considered legislation that would repeal or repeal and replace all or part of the ACA. While Congress has not passed repeal legislation, the newly enacted federal income tax law, known as the Tax Cuts and Jobs Act, includes a provision repealing, effective January 1, 2019, the tax-based shared responsibility payment imposed by the ACA on certain individuals who fail to maintain qualifying health coverage for all or part of a year that is commonly referred to as the "individual mandate". On January 22, 2018, the current presidential administration signed a continuing resolution on appropriations for fiscal year 2018 that delayed the implementation of certain ACA-mandated fees, including the so-called "Cadillac" tax on certain high cost employer-sponsored insurance plans, the annual fee imposed on certain health insurance providers based on market share, and the medical device excise tax on non-exempt medical devices. The Bipartisan Budget Act of 2018, or the BBA, among other things, amends the ACA, effective January 1, 2019, to close the coverage gap in most Medicare drug plans, commonly referred to as the "donut hole." In July 2018, CMS published a final rule permitting further collections and payments to and from certain ACA qualified health plans and health insurance issuers under the ACA risk adjustment program in response to the outcome of federal district court litigation regarding the method CMS uses to

determine this risk adjustment. On December 14, 2018, a Texas U.S. District Court Judge ruled that the ACA is unconstitutional in its entirety because the "individual mandate" was repealed by Congress as part of the Tax Cuts and Jobs Act. While the Texas U.S. District Court Judge, as well as the current presidential administration and CMS, have stated that the ruling will have no immediate effect pending appeal of the decision, it is unclear how this decision, subsequent appeals, and other efforts to repeal and replace the ACA will impact the ACA.

Other legislative changes have been proposed and adopted since the ACA was enacted. These changes include aggregate reductions to Medicare payments to providers of up to 2% per fiscal year pursuant to the Budget Control Act of 2011, which began in 2013 and will remain in effect through 2027 unless additional Congressional action is taken. The American Taxpayer Relief Act of 2012, among other things, further reduced Medicare payments to several providers, including hospitals and cancer treatment centers, increased the statute of limitations period for the government to recover overpayments to providers from three to five years.

Additional changes that may affect our business include the expansion of new programs such as Medicare payment for performance initiatives for physicians under the Medicare Access and CHIP Reauthorization Act of 2015, which will be fully implemented in 2019. At this time, it is unclear how the introduction of the Medicare quality payment program will impact overall physician reimbursement.

Also, there has been heightened governmental scrutiny recently over pharmaceutical pricing practices in light of the rising cost of prescription drugs and biologics. Such scrutiny has resulted in several recent Congressional inquiries and proposed and enacted federal and state legislation designed to, among other things, bring more transparency to product pricing, review the relationship between pricing and manufacturer patient programs, and reform government program reimbursement methodologies for products. At the federal level, the current presidential administration's budget proposal for fiscal year 2019 contains further drug price control measures that could be enacted during the 2019 budget process or in other future legislation, including, for example, measures to permit Medicare Part D plans to negotiate the price of certain drugs under Medicare Part B, to allow some states to negotiate drug prices under Medicaid, and to eliminate cost sharing for generic drugs for low-income patients. Additionally, the current presidential administration released a "Blueprint" to lower drug prices and reduce out-of-pocket costs of drugs that contains additional proposals to increase manufacturer competition, increase the negotiating power of certain federal healthcare programs, incentivize manufacturers to lower the list price of their products and reduce the out of pocket costs of drug products paid by consumers. The U.S. Department of Health and Human Services has already started the process of soliciting feedback on some of these measures and, at the same, is immediately implementing others under its existing authority. For example, in September 2018, CMS announced that it will allow Medicare Advantage Plans the option to use step therapy for Part B drugs beginning January 1, 2019, and in October 2018, CMS proposed a new rule that would require direct-to-consumer television advertisements of prescription drugs and biological products, for which payment is available through or under Medicare or Medicaid, to include in the advertisement the Wholesale Acquisition Cost, or list price, of that drug or biological product. Although a number of these, and other proposed measures will require authorization through additional legislation to become effective Congress and the current presidential administration have each indicated that it will continue to seek new legislative and/or administrative measures to control drug costs. At the state level, legislatures have increasingly passed legislation and implemented regulations designed to control pharmaceutical and biological product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access and marketing cost disclosure and transparency measures, and, in some cases, designed to encourage importation from other countries and bulk purchasing.

Further, on May 30, 2018, the Trickett Wendler, Frank Mongiello, Jordan McLinn, and Matthew Bellina Right to Try Act of 2017, or the Right to Try Act, was signed into law. The law, among other things, provides a federal framework for certain patients to access certain investigational new drug products that have completed a Phase I clinical trial and that are undergoing investigation for FDA approval. Under certain circumstances, eligible patients can seek treatment without enrolling in clinical trials and without obtaining FDA permission under the FDA expanded access program. There is no obligation for a pharmaceutical manufacturer to make its drug products available to eligible patients as a result of the Right to Try Act.

Competition

The biotechnology and pharmaceutical industries are subject to rapid and intense technological change. We face, and will continue to face, competition in the development and marketing of our product candidates from biotechnology and pharmaceutical companies, research institutions, government agencies and academic institutions. Competition may also arise from, among other things:

- other drug development technologies;
- methods of preventing or reducing the incidence of disease, including vaccines; and
- new small molecule or other classes of therapeutic agents.

Developments by others may render our products, product candidates, or technologies obsolete or noncompetitive.

In April 2017, INGREZZA, was approved by the FDA for TD. There are currently two FDA approved drug therapies for TD; INGREZZA and AUSTEDO® (deutetrabenazine), a deuterium labeled version of XENAZINE® (tetrabenazine) and VMAT2 inhibitor that was developed by Teva Pharmaceutical Industries Ltd. (Teva). In addition, off-label treatment regimens for TD consist of utilizing various atypical antipsychotic medications (e.g., clozapine), benzodiazepines (off-label) or botulinum toxin injections to treat the movements associated with TD.

Other potential indications for our VMAT2 inhibitors include the chorea associated with Huntington's disease, tardive dystonia, and other potential diseases and disorders. Currently, AUSTEDO, XENAZINE, which is marketed by Lundbeck, and generic alternatives to XENAZINE are approved for the chorea associated with Huntington's disease.

On July 24, 2018, AbbVie, in collaboration with us, announced FDA approval for ORILISSA for the management of endometriosis with associated moderate to severe pain in women. In addition, in conjunction with our partner AbbVie, we are developing elagolix for the treatment of heavy menstrual bleeding associated with uterine fibroids. AbbVie initiated Phase III studies of elagolix in patients with uterine fibroids in early 2016. The Phase III program included two replicate, pivotal, six-month efficacy and safety studies followed by a six-month safety and efficacy extension study. AbbVie provided positive top-line efficacy data from the two Phase III studies in women with uterine fibroids in the first quarter of 2018 and additional data from the six-month safety extension study in the third quarter of 2018. We believe the results from these studies will form the basis for an anticipated NDA submission to the FDA in 2019 for the approval of elagolix in the treatment of uterine fibroids. There are no current pharmaceutical therapies approved in the U.S. for the chronic treatment of uterine fibroids. ObsEva SA has initiated a Phase IIb endometriosis study with its GnRH receptor antagonist, OBE2109, and has initiated Phase III studies of uterine fibroids patients with the same molecule. Myovant Sciences, Inc. is investigating its GnRH receptor antagonist, relugolix, in Phase III trials of endometriosis, uterine fibroids and prostate cancer patients. LUPRON DEPOT® (leuprolide), marketed by AbbVie, is approved for short-term use to improve the outcome of uterine fibroid surgery. However, approximately 250,000 hysterectomies are performed annually in the U.S. as a direct result of uterine fibroids, as well as myomectomies (surgery) to remove the fibroids. Our oral small molecule pharmaceutical agent, elagolix, would compete directly with these current invasive standards of care.

LUPRON DEPOT, SYNAREL® (nafarelin), and depo-subQ provera104® (medroxyprogesterone), which are marketed by Pfizer, are products that have been approved for the treatment of endometriosis, infertility, and central precocious puberty. These drugs, and any generic alternatives, may compete with any small molecule non-peptide GnRH antagonists we, in conjunction with our collaborative partner AbbVie, develop for these indications. Approximately 130,000 hysterectomies are performed annually in the U.S. as a direct result of endometriosis, as well as a significant number of laparoscopic procedures to ablate endometrial explants. Our oral small molecule pharmaceutical agent, elagolix, would also compete directly with these current invasive standards of care.

Opicapone is a COMT inhibitor to be utilized as an adjunct therapy in the treatment of Parkinson's disease. COMT inhibitors prolong the duration of effect of levodopa which is the primary treatment option for Parkinson's disease patients. There are currently two FDA approved COMT inhibitors, COMTAN® (entacapone) originally developed by Orion Pharma and TASMAR® (tolcapone) originally developed by Hoffman-LaRoche Inc. Opicapone would compete directly with these two drugs and their generic equivalents.

NBI-74788 is currently being investigated for the treatment of classic CAH, for which there are limited therapies. High doses of corticosteroids are the current standard of care to both correct the endogenous cortisol deficiency as well as reduce the excessive ACTH levels. However, the level of dose as well as the duration of steroid use required to suppress ACTH is well above the normal physiological level of cortisol; resulting in metabolic syndrome, bone loss, growth impairment, and Cushing's syndrome as common and serious side effects. Both Millendo Therapeutics, with its acetyl-CoA acetyltransferase 1 inhibitor ATR-101, and Spruce Biosciences, with its CRF_1 antagonist SPR001, are in clinical development for the treatment of classic CAH.

If one or more of these competitive products or programs are successful, it may reduce or eliminate the market for our products.

Compared to us, many of our competitors and potential competitors have substantially greater:

- capital resources;
- commercial experience;
- research and development resources, including personnel and technology;
- regulatory experience;
- preclinical study and clinical testing experience;
- manufacturing and marketing experience; and
- production facilities.

Any of these competitive factors could harm our business, prospects, financial condition and results of operations, which could negatively affect our stock price.

Employees

As of December 31, 2018, we had approximately 585 full-time employees. None of our employees are represented by a collective bargaining arrangement, and we believe our relationship with our employees is good.

Insurance

We maintain product liability insurance coverage for INGREZZA and our clinical trials in amounts consistent with industry standards. However, insurance coverage is becoming increasingly expensive, and we may not be able to obtain or maintain insurance coverage at a reasonable cost or in sufficient amounts to protect us against losses due to liability.

Available Information

Our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and amendments to reports filed pursuant to Sections 13(a) and 15(d) of the Securities Exchange Act of 1934, as amended, are available free of charge on our website at *www.neurocrine.com* , as soon as reasonably practicable after such reports are available on the Securities and Exchange Commission (SEC) website at *www.sec.gov*.

Additionally, copies of our Annual Report will be made available, free of charge, upon written request.

ITEM 1A. *RISK FACTORS*

The following information sets forth risk factors that could cause our actual results to differ materially from those contained in forward-looking statements we have made in this Annual Report on Form 10-K and those we may make from time to time. If any of the following risks actually occur, our business, operating results, prospects or financial condition could be harmed. Additional risks not presently known to us, or that we currently deem immaterial, may also affect our business operations.

Risks Related to Our Company

We have limited marketing experience, and have only recently established our sales force, distribution and reimbursement capabilities, and we may not be able to continue to successfully commercialize INGREZZA, or any of our product candidates if they are approved in the future.

Our ability to produce INGREZZA revenues consistent with expectations ultimately depends on our ability to sell our products and secure adequate third-party reimbursement if and when they are approved by the FDA. Our limited experience in marketing and selling pharmaceutical products began with INGREZZA approval in 2017, when we hired our sales force and established our distribution and reimbursement capabilities, all of which are necessary to successfully commercialize INGREZZA. While our team members and consultants have experience marketing and selling pharmaceutical products, we may face difficulties related to managing the rapid growth of our personnel and infrastructure, and there can be no guarantee that we will be able to maintain the personnel, systems, arrangements and capabilities necessary to successfully commercialize INGREZZA or any product candidate approved by the FDA in the future. If we fail to maintain successful marketing, sales and reimbursement capabilities or fail to enter into successful marketing arrangements with third parties, our product revenues may suffer.

Use of our approved products or those of our collaborators, including INGREZZA and ORILISSA, could be associated with side effects or adverse events.

As with most pharmaceutical products, use of our approved products or those of our collaborators, including INGREZZA and ORILISSA, could be associated with side effects or adverse events which can vary in severity (from minor reactions to death) and frequency (infrequent or prevalent). Side effects or adverse events associated with the use of our products or those of our collaborators may be observed at any time, including after a product is commercialized, and reports of any such side effects or adverse events may negatively impact demand for our or our collaborators' products or affect our or our collaborators' ability to maintain regulatory approval for such products. Side effects or other safety issues associated with the use of our approved products or those of our collaborators could require us or our collaborators to halt commercialization of these products or expose us to product liability lawsuits which will harm our business. We or our collaborators may be required by regulatory agencies to conduct additional studies regarding the safety and efficacy of our products which we have not planned or anticipated. Furthermore, there can be no assurance that we or our collaborators will resolve any issues related to any product related adverse events to the satisfaction of the FDA or any regulatory agency in a timely manner or ever, which could harm our business, prospects and financial condition.

We currently depend on single source suppliers. The loss of these suppliers, or delays or problems in the supply of INGREZZA, could materially and adversely affect our ability to successfully commercialize INGREZZA.

The manufacture of pharmaceutical products requires significant expertise and capital investment, including the development of process controls required to consistently produce the active pharmaceutical ingredients and the finished product in sufficient quantities while meeting detailed product specifications on a repeated basis. Manufacturers of pharmaceutical products may encounter difficulties in production, including difficulties with production costs and yields, process controls, quality control and quality assurance, including testing of stability, impurities and impurity levels and other product specifications by validated test methods, and compliance with strictly enforced U.S., state, and non-U.S. regulations. We depend on single source suppliers for each of the production of INGREZZA and its active pharmaceutical ingredients. If our third-party suppliers for INGREZZA encounter these or any other manufacturing, quality or compliance difficulties, we may be unable to meet commercial demand for INGREZZA, which could materially and adversely affect our ability to successfully commercialize INGREZZA. We also depend on BIAL, and its suppliers, for the production of opicapone drug substance and drug product.

In addition, if our suppliers fail or refuse to supply us with INGREZZA or its active pharmaceutical ingredient for any reason, it would take a significant amount of time and expense to qualify a new supplier. The FDA and similar international regulatory bodies must approve manufacturers of the active and inactive pharmaceutical ingredients and certain packaging materials used in pharmaceutical products. The loss of a supplier could require us to obtain regulatory clearance and to incur validation and other costs associated with the transfer of the active pharmaceutical ingredients or product manufacturing processes. If there are delays in qualifying new suppliers or facilities or a new supplier is unable to meet FDA or a similar international regulatory body's requirements for approval, there could be a shortage of INGREZZA, which could materially and adversely affect our ability to successfully commercialize INGREZZA. If BIAL is unable or refuses to supply us with opicapone drug product for any reason, we have limited opportunity to qualify a new supplier. The inability to obtain sufficient quantities of opicapone drug product could materially and adversely affect our ability to successfully commercialize opicapone.

We have no manufacturing capabilities. If third-party manufacturers of INGREZZA or any of our product candidates fail to devote sufficient time and resources to our concerns, or if their performance is substandard, our clinical trials and product introductions may be delayed, and our costs may rise.

We have in the past utilized, and intend to continue to utilize, third-party manufacturers to produce the drug compounds we use in our clinical trials and for the commercialization of our products. We have limited experience in manufacturing products for commercial purposes and do not currently have any manufacturing facilities. Consequently, we depend on, and will continue to depend on, several contract manufacturers for all production of products for development and commercial purposes, including INGREZZA. If we are unable to obtain or retain third-party manufacturers, we will not be able to develop or commercialize our products, including INGREZZA. The manufacture of our products for clinical trials and commercial purposes is subject to specific FDA regulations, including current Good Manufacturing Practice regulations. Our third-party manufacturers might not comply with FDA regulations relating to manufacturing our products for clinical trials and commercial purposes or other regulatory requirements now or in the future. Our reliance on contract manufacturers also exposes us to the following risks:

- contract manufacturers may encounter difficulties in achieving volume production, quality control and quality assurance, and also may experience shortages in qualified personnel. As a result, our contract manufacturers might not be able to meet our clinical schedules or adequately manufacture our products in commercial quantities when required;
- switching manufacturers may be difficult because the number of potential manufacturers is limited. It may be difficult or impossible for us to find a replacement manufacturer quickly on acceptable terms, or at all;
- our contract manufacturers may not perform as agreed or may not remain in the contract manufacturing business for the time required to successfully produce, store or distribute our products; and
- drug manufacturers are subject to ongoing periodic unannounced inspection by the FDA, the U.S. Drug Enforcement Administration, and other agencies to ensure strict compliance with cGMP and other government regulations and corresponding foreign standards. We do not have control over third-party manufacturers' compliance with these regulations and standards.

Our current dependence upon third parties for the manufacture of our products may reduce our profit margin, if any, on the sale of INGREZZA or our future products and our ability to develop and deliver products on a timely and competitive basis.

We are subject to ongoing obligations and continued regulatory review for INGREZZA, which may result in significant additional expense and market withdrawal. Additionally, our other product candidates, if approved, could be subject to labeling and other restrictions and market withdrawal and we may be subject to penalties if we fail to comply with regulatory requirements or experience unanticipated problems with our products.

We received FDA regulatory approval for INGREZZA in April 2017. This approval and other regulatory approvals for any of our product candidates may also be subject to limitations on the approved indicated uses for which the product may be marketed or to the conditions of approval, or contain requirements for potentially costly post-marketing testing, including Phase IV clinical trials, and surveillance to monitor the safety and efficacy of the product candidate. With respect to the FDA's approval of INGREZZA for TD, we are subject to certain post-marketing requirements and commitments. Failure to comply with these post-marketing requirements and commitments could result in withdrawal of our marketing approval for INGREZZA. In addition, with respect to INGREZZA, and any product candidate that the FDA or a comparable foreign regulatory authority approves, the manufacturing processes, labeling, packaging, distribution, adverse event reporting, storage, advertising, promotion and recordkeeping for the product will be subject to extensive and ongoing regulatory requirements. These requirements include submissions of safety and other post-marketing information and reports, registration, as well as continued compliance with current Good Manufacturing Practices for any clinical trials that we conduct post-approval. Later discovery of previously unknown problems with a product, including adverse events of unanticipated severity or frequency (especially for a product, such as INGREZZA, which has been administered in only a limited patient population to date), or with our third-party manufacturers or manufacturing processes, or failure to comply with regulatory requirements, may result in, among other things:

- restrictions on the marketing or manufacturing of the product, withdrawal of the product from the market, or voluntary or mandatory product recalls;
- fines, warning letters or holds on clinical trials;
- refusal by the FDA to approve pending applications or supplements to approved applications filed by us, or suspension or revocation of product license approvals;
- product seizure or detention, or refusal to permit the import or export of products; and
- product injunctions or the imposition of civil or criminal penalties.

The FDA's policies may change, and additional government regulations may be enacted that could prevent, limit or delay regulatory approval of any of our product candidates or future indications for currently approved products. If we are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or if we are not able to maintain regulatory compliance, we may lose any marketing approval that we may have obtained, which would adversely affect our business, prospects and ability to achieve or sustain profitability on a sustained basis.

If physicians and patients do not accept INGREZZA or any of our other products, or our sales and marketing efforts are not effective, we may not generate sufficient revenue.

The commercial success of INGREZZA or any of our other products, if approved for marketing, will depend upon the acceptance of those products as safe and effective by the medical community and patients.

The market acceptance of INGREZZA or any of our other products could be affected by a number of factors, including:

- the timing of receipt of marketing approvals for indications;
- the safety and efficacy of the products;
- the pricing of our products;
- the availability of coverage and adequate reimbursement for the products;
- the success of existing products addressing our target markets or the emergence of equivalent or superior products; and
- the cost-effectiveness of the products.

In addition, market acceptance depends on the effectiveness of our marketing strategy and distribution support, and, to date, although we have hired experienced sales and marketing professionals, we have very limited sales and marketing experience. We may face difficulties related to managing the growth of our sales and marketing organization, and it is possible that the rapid expansion in our sales and marketing team may have a short-term negative effect on our external sales and marketing efforts given the need to devote significant time to the training and integration of these personnel. If our sales and marketing efforts are not effective and the medical community and patients do not ultimately accept our products as being safe, effective, superior and/or cost-effective, we may not generate sufficient revenue.

Our clinical trials may fail to demonstrate the safety and efficacy of our product candidates, which could prevent or significantly delay their regulatory approval.

Before obtaining regulatory approval for the sale of any of our potential products, we must subject these product candidates to extensive preclinical and clinical testing to demonstrate their safety and efficacy for humans. Clinical trials are expensive, time-consuming and may take years to complete.

In connection with the clinical trials of our product candidates, we face the risks that:

- the FDA or similar foreign regulatory authority may not allow an IND application or foreign equivalent filings required to initiate human clinical studies for our drug candidates or the FDA may require additional preclinical studies as a condition of the initiation of Phase I clinical studies, or additional clinical studies for progression from Phase I to Phase II, or Phase II to Phase III, or for NDA approval;
- the product candidate may not prove to be effective or as effective as other competing product candidates;
- we may discover that a product candidate may cause harmful side effects or results of required toxicology studies may not be acceptable to the FDA;
- the results may not replicate the results of earlier, smaller trials;
- the FDA or similar foreign regulatory authorities may require use of new or experimental endpoints that may prove insensitive to treatment effects;
- we or the FDA or similar foreign regulatory authorities may suspend the trials;
- the results may not be statistically significant;
- patient recruitment may be slower than expected;
- patients may drop out of the trials; and
- regulatory requirements may change.

These risks and uncertainties impact all of our clinical programs. For example, any of the clinical, regulatory or operational events described above could change our planned clinical and regulatory activities for the opicapone program in Parkinson's disease and/or our NBI-74788 program for the treatment of CAH. Additionally, any of these events described above could result in suspension of a program and/or obviate any filings for necessary regulatory approvals.

In addition, late-stage clinical trials are often conducted with patients having the most advanced stages of disease. During the course of treatment, these patients can die or suffer other adverse medical effects for reasons that may not be related to the pharmaceutical agent being tested but which can nevertheless adversely affect clinical trial results. Any failure or substantial delay in completing clinical trials for our product candidates may severely harm our business.

Even if the clinical trials are successfully completed, we cannot guarantee that the FDA or foreign regulatory authorities will interpret the results as we do, and more trials could be required before we submit our product candidates for approval. To the extent that the results of the trials are not satisfactory to the FDA or foreign regulatory authorities for support of a marketing application, approval of our product candidates may be significantly delayed, or we may be required to expend significant additional resources, which may not be available to us, to conduct additional trials in support of potential approval of our product candidates.

Because the development of our product candidates is subject to a substantial degree of technological uncertainty, we may not succeed in developing any of our product candidates.

All of our product candidates are currently in research or clinical development with the exceptions of INGREZZA, which has been approved by the FDA for TD, and ORILISSA (partnered with AbbVie), which has been approved by the FDA for the management of moderate to severe endometriosis pain in women. Only a small number of research and development programs ultimately result in commercially successful drugs. Potential products that appear to be promising at early stages of development may not reach the market for a number of reasons. These reasons include the possibilities that the potential products may:

- be found ineffective or cause harmful side effects during preclinical studies or clinical trials;
- fail to receive necessary regulatory approvals on a timely basis or at all;
- be precluded from commercialization by proprietary rights of third parties;
- be difficult to manufacture on a large scale; or
- be uneconomical to commercialize or fail to achieve market acceptance.

If any of our product candidates encounters any of these potential problems, we may never successfully market that product candidate.

We depend on our current collaborators for the development and commercialization of our products and product candidates that we out-license and in-license and may need to enter into future collaborations to develop and commercialize certain of our product candidates.

Our strategy for fully developing and commercializing ORILISSA is dependent upon maintaining our current collaboration agreement with AbbVie. This collaboration agreement provides for significant future payments should certain development, regulatory and commercial milestones be achieved, and royalties on future sales of elagolix. Under this agreement, AbbVie is responsible for, among other things, conducting clinical trials and obtaining required regulatory approvals for elagolix; as well as manufacturing and commercialization of ORILISSA.

Because of our reliance on AbbVie, the commercialization and continued development of ORILISSA could be substantially delayed, and our ability to receive future funding could be substantially impaired, if AbbVie:

- does not successfully commercialize ORILISSA for endometriosis;
- fails to gain regulatory approval of elagolix;
- for uterine fibroids, and if applicable, successfully launch and commercialize elagolix for that indication;
- does not conduct its collaborative activities in a timely manner;
- does not devote sufficient time and resources to our partnered program;
- terminates its agreement with us;
- develops, either alone or with others, products that may compete with elagolix;
- disputes our respective allocations of rights to any products or technology developed during our collaboration; or
- merges with a third party that wants to terminate our agreement.

In March 2015, we entered into a collaboration and license agreement with Mitsubishi Tanabe to develop and commercialize INGREZZA in Japan and other select Asian markets. We will rely on Mitsubishi Tanabe to achieve certain development, regulatory and commercial milestones which, if achieved, could generate significant future revenue for us. Our collaboration with Mitsubishi Tanabe is subject to risks and uncertainties similar to those described above. In addition, we may need to enter into other out-licensing collaborations to assist in the development and commercialization of other product candidates we are developing now or may develop in the future, and any such future collaborations would be subject to similar risks and uncertainties.

In February 2017, we entered into a license agreement with BIAL for the development and commercialization of opicapone for the treatment of human diseases and conditions, including Parkinson's disease, in the U.S. and Canada. Under the terms of the agreement, we are responsible for the management of all opicapone development and commercialization activities; however, we will depend on BIAL to supply all drug product and investigation medicinal product for our development and commercialization activities. In addition, pursuant to the license agreement, the parties have established a joint steering committee with overall coordination and strategic oversight over activities under the agreement and to provide a forum for regular exchange of information, and BIAL has the right to co-promote licensed products during certain periods of time and to engage in certain marketing-related activities in cooperation with us. Accordingly, our strategy for developing and commercializing opicapone is dependent upon maintaining our current collaboration with BIAL. Because of our reliance on BIAL for certain aspects related to the development and commercialization of opicapone, any disagreement with BIAL, or BIAL's decision to not devote sufficient time and resources to our collaboration or to not conduct activities in a timely manner, could substantially delay and/or prohibit our ability to develop and commercialize opicapone.

These issues and possible disagreements with AbbVie, Mitsubishi Tanabe, BIAL, or any future corporate collaborators could lead to delays in the collaborative research, development or commercialization of our product candidates. Furthermore, disagreements with these parties could require or result in litigation or arbitration, which would be time-consuming and expensive. If any of these issues arise, it may delay the development and commercialization of drug candidates and, ultimately, our generation of product revenues.

We do not and will not have access to all information regarding the products and product candidates we licensed to AbbVie.

We do not and will not have access to all information regarding ORILISSA, including potentially material information about commercialization plans, medical information strategies, clinical trial design and execution, safety reports from clinical trials, safety reports, regulatory affairs, process development, manufacturing and other areas known by AbbVie. In addition, we have confidentiality obligations under our agreement with AbbVie. Thus, our ability to keep our shareholders informed about the status of ORILISSA will be limited by the degree to which AbbVie keeps us informed and allows us to disclose such information to the public. If AbbVie fails to keep us informed about commercialization efforts related to ORILISSA, or the status of the clinical development or regulatory approval pathway of other product candidates licensed to it, we may make operational and/or investment decisions that we would not have made had we been fully informed, which may materially and adversely affect our business and operations.

Governmental and third-party payors may impose sales and pharmaceutical pricing controls on our products or limit coverage and/or reimbursement for our products that could limit our product revenues and delay sustained profitability.

Our ability to commercialize any products successfully, including INGREZZA, will depend in part on the extent to which coverage and adequate reimbursement for these products and related treatments will be available. The continuing efforts of government and third-party payors to contain or reduce the costs of health care through various means may reduce our potential revenues. These payors' efforts could decrease the price that we receive for any products we may develop and sell in the future.

Assuming we obtain coverage for a given product by a third-party payor, the resulting reimbursement payment rates may not be adequate or may require co-payments that patients find unacceptably high. Patients who are prescribed medications for the treatment of their conditions, and their prescribing physicians, generally rely on third-party payors to reimburse all or part of the costs associated with their prescription drugs. Patients are unlikely to use our products unless coverage is provided and reimbursement is adequate to cover all or a significant portion of the cost of our products. Coverage decisions may depend upon clinical and economic standards that disfavor new drug products when more established or lower cost therapeutic alternatives are already available or subsequently become available regardless of whether they are approved by the FDA for that particular use.

Government authorities and other third-party payors are developing increasingly sophisticated methods of controlling healthcare costs, such as by limiting coverage and the amount of reimbursement for particular medications. Further, no uniform policy requirement for coverage and reimbursement for drug products exists among third-party payors in the U.S. Therefore, coverage and reimbursement for drug products can differ significantly from payor to payor. As a result, the coverage determination process is often a time-consuming and costly process that will require us to provide scientific and clinical support for the use of our products to each payor separately, with no assurance that coverage and adequate reimbursement will be applied consistently or obtained in the first instance. In addition, communications from government officials regarding health care costs and pharmaceutical pricing could have a negative impact on our stock price, even if such communications do not ultimately impact coverage or reimbursement decisions for our products.

There may also be significant delays in obtaining coverage and reimbursement for newly approved drugs, and coverage may be more limited than the purposes for which the drug is approved by the FDA or comparable foreign regulatory authorities. Moreover, eligibility for coverage and reimbursement does not imply that a drug will be paid for in all cases or at a rate that covers our costs, including research, development, manufacture, sale and distribution. If coverage and reimbursement are not available or reimbursement is available only to limited levels, we may not successfully commercialize INGREZZA or any other product candidate for which we obtain marketing approval. Our inability to promptly obtain coverage and profitable reimbursement rates from both government-funded and private payors for any approved products that we develop could have a material adverse effect on our operating results, our ability to raise capital needed to commercialize products and our overall financial condition.

We license some of our core technologies and drug candidates from third parties. If we default on any of our obligations under those licenses, or violate the terms of these licenses, we could lose our rights to those technologies and drug candidates or be forced to pay damages.

We are dependent on licenses from third parties for some of our key technologies. These licenses typically subject us to various commercialization, reporting and other obligations. If we fail to comply with these obligations, we could lose important rights. If we were to default on our obligations under any of our licenses, we could lose some or all of our rights to develop, market and sell products covered by these licenses. For example, BIAL may terminate our license agreement, pursuant to which we have rights to develop and commercialize opicapone, if we fail to use commercially reasonable efforts, fail to submit an NDA for a licensed product by a specified date, or otherwise breach the license agreement. In addition, if we were to violate any of the terms of our licenses, we could become subject to damages. Likewise, if we were to lose our rights under a license to use proprietary research tools, it could adversely affect our existing collaborations or adversely affect our ability to form new collaborations. We also face the risk that our licensors could, for a number of reasons, lose patent protection or lose their rights to the technologies we have licensed, thereby impairing or extinguishing our rights under our licenses with them.

The independent clinical investigators and contract research organizations that we rely upon to conduct our clinical trials may not be diligent, careful or timely, and may make mistakes, in the conduct of our trials.

We depend on independent clinical investigators and contract research organizations (CROs) to conduct our clinical trials under their agreements with us. The investigators are not our employees, and we cannot control the amount or timing of resources that they devote to our programs. If our independent investigators fail to devote sufficient time and resources to our drug development programs, or if their performance is substandard, or not in compliance with Good Clinical Practices, it may delay or prevent the approval of our FDA applications and our introduction of new drugs. The CROs we contract with for execution of our clinical trials play a significant role in the conduct of the trials and the subsequent collection and analysis of data. Failure of the CROs to meet their obligations could adversely affect clinical development of our products. Moreover, these independent investigators and CROs may also have relationships with other commercial entities, some of which may compete with us. If independent investigators and CROs assist our competitors at our expense, it could harm our competitive position.

We could face liability if a regulatory authority determines that we are promoting INGREZZA, or any of our product candidates that receives regulatory approval, for "off-label" uses.

A company may not promote "off-label" uses for its drug products. An off-label use is the use of a product for an indication that is not described in the product's FDA-approved label in the U.S. or for uses in other jurisdictions that differ from those approved by the applicable regulatory agencies. Physicians, on the other hand, may prescribe products for off-label uses. Although the FDA and other regulatory agencies do not regulate a physician's choice of drug treatment made in the physician's independent medical judgment, they do restrict promotional communications from companies or their sales force with respect to off-label uses of products for which marketing clearance has not been issued. A company that is found to have promoted off-label use of its product may be subject to significant liability, including civil and criminal sanctions. We intend to comply with the requirements and restrictions of the FDA and other regulatory agencies with respect to our promotion of our products, including INGREZZA, but we cannot be sure that the FDA or other regulatory agencies will agree that we have not violated their restrictions. As a result, we may be subject to criminal and civil liability. In addition, our management's attention could be diverted to handle any such alleged violations. A significant number of companies have been the target of inquiries and investigations by various U.S. federal and state regulatory, investigative, prosecutorial and administrative entities in connection with the promotion of products for unapproved uses and other sales practices, including the Department of Justice and various U.S. Attorneys' Offices, the Office of Inspector General of the Department of Health and Human Services, the FDA, the Federal Trade Commission and various state Attorneys General offices. These investigations have alleged violations of various U.S. federal and state laws and regulations, including claims asserting antitrust violations, violations of the federal civil False Claims Act, the Prescription Drug Marketing Act, anti-kickback laws, and other alleged violations in connection with the promotion of products for unapproved uses, pricing and Medicare and/or Medicaid reimbursement. If the FDA or any other governmental agency initiates an enforcement action against us or if we are the subject of a *qui tam* suit and it is determined that we violated prohibitions relating to the promotion of products for unapproved uses, we could be subject to substantial civil or criminal fines or damage awards and other sanctions such as consent decrees and corporate integrity agreements pursuant to which our activities would be subject to ongoing scrutiny and monitoring to ensure compliance with applicable laws and regulations. Any such fines, awards or other sanctions would have an adverse effect on our revenue, business, financial prospects, and reputation.

Our indebtedness and liabilities could limit the cash flow available for our operations, expose us to risks that could adversely affect our business, financial condition and results of operations.

To date, we have sold $517.5 million aggregate principal amount of 2.25% convertible senior notes due May 15, 2024 (2024 Notes). We may also incur additional indebtedness to meet future financing needs. Our indebtedness could have significant negative consequences for our security holders and our business, results of operations and financial condition by, among other things:

- increasing our vulnerability to adverse economic and industry conditions;
- limiting our ability to obtain additional financing;
- requiring the dedication of a substantial portion of our cash flow from operations to service our indebtedness, which will reduce the amount of cash available for other purposes;
- limiting our flexibility to plan for, or react to, changes in our business;
- diluting the interests of our existing stockholders as a result of issuing shares of our common stock upon conversion of the 2024 Notes; and
- placing us at a possible competitive disadvantage with competitors that are less leveraged than us or have better access to capital.

Our business may not generate sufficient funds, and we may otherwise be unable to maintain sufficient cash reserves, to pay amounts due under the 2024 Notes and any additional indebtedness that we may incur. In addition, our cash needs may increase in the future. In addition, any future indebtedness that we may incur may contain financial and other restrictive covenants that limit our ability to operate our business, raise capital or make payments under our other indebtedness. If we fail to comply with these covenants or to make payments under our indebtedness when due, then we would be in default under that indebtedness, which could, in turn, result in that and our other indebtedness becoming immediately payable in full.

The conditional conversion feature of the 2024 Notes, if triggered, may adversely affect our financial condition, operating results, or liquidity.

In the event the conditional conversion feature of the 2024 Notes is triggered, holders of 2024 Notes will be entitled to convert their 2024 Notes at any time during specified periods at their option. If one or more of the holders of the 2024 Notes elects to convert their notes, unless we satisfy our conversion obligation by delivering only shares of our common stock, we would be required to settle all or a portion of our conversion obligation through the payment of cash, which could adversely affect our liquidity. The conditional convertibility of the 2024 Notes will be monitored at each quarterly reporting date and analyzed dependent upon market prices of our common stock during the prescribed measurement periods.

We have a history of losses and expect to increase our expenses for the foreseeable future, and we may never achieve sustained profitability.

Since our inception, we have incurred significant net losses and negative cash flow from operations. As a result of historical operating losses, we had an accumulated deficit of approximately $1.2 billion as of December 31, 2018.

In April 2017, we received FDA approval of INGREZZA for TD, and in July 2018, our partner AbbVie received FDA approval for ORILISSA for management of moderate to severe endometriosis pain in women. However, we have not yet obtained regulatory approvals for any other product candidates. Even if we succeed in commercializing INGREZZA or developing and commercializing any of our other product candidates, we may not be profitable. We also expect to continue to incur significant operating and capital expenditures as we:

- commercialize INGREZZA for TD;
- seek regulatory approvals for our product candidates;
- develop, formulate, manufacture and commercialize our product candidates;
- in-license or acquire new product development opportunities;
- implement additional internal systems and infrastructure; and
- hire additional clinical, scientific, sales and marketing personnel.

We expect to increase our expenses and other investments in the coming years as we fund our operations, in-licensing or acquisition opportunities, and capital expenditures. While we were profitable for the year ended December 31, 2018, our future operating results and profitability may fluctuate from period to period due to the factors described above, and we will need to generate significant revenues to achieve and maintain profitability and positive cash flow on a sustained basis. We may not be able to generate these revenues, and we may never achieve profitability on a sustained basis in the future. Our failure to maintain or increase profitability on a sustained basis could negatively impact the market price of our common stock.

We have recently increased the size of our organization and will need to continue to increase the size of our organization. We may encounter difficulties with managing our growth, which could adversely affect our results of operations.

As of December 31, 2018, we had approximately 585 full-time employees. Although we have substantially increased the size of our organization, we may need to add additional qualified personnel and resources, especially now that we have a commercial sales force. Our current infrastructure may be inadequate to support our development and commercialization efforts and expected growth. Future growth will impose significant added responsibilities on members of management, including the need to identify, recruit, maintain and integrate additional employees, and may take time away from running other aspects of our business, including development and commercialization of our product candidates.

Our future financial performance and our ability to commercialize INGREZZA and any other product candidates that receive regulatory approval will depend, in part, on our ability to manage any future growth effectively. In particular, as we commercialize INGREZZA, we will need to support the training and ongoing activities of our sales force and will likely need to continue to expand the size of our employee base for managerial, operational, financial and other resources. To that end, we must be able to successfully:

- manage our development efforts effectively;
- integrate additional management, administrative and manufacturing personnel;

- further develop our marketing and sales organization; and
- maintain sufficient administrative, accounting and management information systems and controls.

We may not be able to accomplish these tasks or successfully manage our operations and, accordingly, may not achieve our research, development, and commercialization goals. Our failure to accomplish any of these goals could harm our financial results and prospects.

We may be subject to claims that we or our employees have wrongfully used or disclosed alleged trade secrets of their former employers.

As is commonplace in the biotechnology industry, we employ individuals who were previously employed at other biotechnology or pharmaceutical companies, including our competitors or potential competitors. Although no claims against us are currently pending, we may be subject to claims that these employees or we have inadvertently or otherwise used or disclosed trade secrets or other proprietary information of their former employers. Litigation may be necessary to defend against these claims. Even if we are successful in defending against these claims, litigation could result in substantial costs and be a distraction to management.

If we are unable to retain and recruit qualified scientists or if any of our key senior executives discontinues his or her employment with us, it may delay our development efforts or impact our commercialization of INGREZZA or any product candidate approved by the FDA.

We are highly dependent on the principal members of our management and scientific staff. The loss of any of these people could impede the achievement of our objectives, including the successful commercialization of INGREZZA or any product candidate approved by the FDA. Furthermore, recruiting and retaining qualified scientific personnel to perform research and development work in the future, along with personnel with experience marketing and selling pharmaceutical products, is critical to our success. We may be unable to attract and retain personnel on acceptable terms given the competition among biotechnology, pharmaceutical and health care companies, universities and non-profit research institutions for experienced scientists and individuals with experience marketing and selling pharmaceutical products. We may face particular retention challenges in light of the recent rapid growth in our personnel and infrastructure and the perceived impact of those changes upon our corporate culture. In addition, we rely on a significant number of consultants to assist us in formulating our research and development strategy and our commercialization strategy. Our consultants may have commitments to, or advisory or consulting agreements with, other entities that may limit their availability to us.

If the market opportunities for our products and product candidates are smaller than we believe they are, our revenues may be adversely affected and our business may suffer.

Certain of the diseases that INGREZZA and our product candidates are being developed to address are in underserved and underdiagnosed populations. Our projections of both the number of people who have these diseases, as well as the subset of people with these diseases who will seek treatment utilizing our products or product candidates, may not be accurate. If our estimates of the prevalence or number of patients potentially on therapy prove to be inaccurate, the market opportunities for INGREZZA and our product candidates may be smaller than we believe they are, our prospects for generating expected revenue may be adversely affected and our business may suffer.

Because our operating results may vary significantly in future periods, our stock price may decline.

Our quarterly revenues, expenses and operating results have fluctuated in the past and are likely to fluctuate significantly in the future. Our financial results are unpredictable and may fluctuate, for among other reasons, due to commercial sales of INGREZZA, royalties from out-licensed products, the impact of Medicare Part D coverage, our achievement of product development objectives and milestones, clinical trial enrollment and expenses, research and development expenses and the timing and nature of contract manufacturing and contract research payments. In addition, we recently received regulatory approval from the FDA for INGREZZA in TD and our revenues will be dependent on our ability to sell INGREZZA and to secure adequate third-party reimbursement. A high portion of our costs are predetermined on an annual basis, due in part to our significant research and development costs. Thus, small declines in revenue could disproportionately affect financial results in a quarter. While we were profitable for the year ended December 31, 2018, our future operating results and profitability may fluctuate from period to period, and even if we become profitable on a quarterly or annual basis, we may not be able to sustain or increase our profitability. Moreover, as our company and our market capitalization have grown, our financial performance has become increasingly subject to quarterly and annual comparisons with the expectations of securities analysts or investors. The failure of our financial results to meet these expectations, either in a single quarterly or annual period over a sustained period time, could cause our stock price to decline.

U.S. federal income tax reform could adversely affect our business and financial condition.

On December 22, 2017, U.S. federal income tax legislation was signed into law (H.R. 1, "An Act to provide for reconciliation pursuant to titles II and V of the concurrent resolution on the budget for fiscal year 2018", informally titled the Tax Cuts and Jobs Act, or the Tax Act). The Tax Act, among other things, contains significant changes to corporate taxation, including reduction of the corporate tax rate from a top marginal rate of 35% to a flat rate of 21%, repeal of the alternative minimum tax for corporations, limitation of the tax deduction for interest expense to 30% of adjusted earnings (except for certain small businesses), limitation of the deduction for net operating losses to 80% of current year taxable income and elimination of net operating loss carrybacks, one time taxation of offshore earnings at reduced rates regardless of whether they are repatriated, elimination of U.S. tax on foreign earnings (subject to certain important exceptions), immediate deductions for certain new investments instead of deductions for depreciation expense over time, and modifying or repealing many business deductions and credits. Notwithstanding the reduction in the corporate income tax rate, the overall impact of the Tax Act is uncertain and our business and financial condition could be adversely affected. In addition, it is uncertain if and to what extent various states will conform to the Tax Act. The impact of the Tax Act on holders of our common stock is also uncertain and could be adverse. We urge our stockholders to consult with their legal and tax advisors with respect to this legislation and the potential tax consequences of investing in or holding our common stock.

Our ability to use net operating loss carryforwards and certain other tax attributes may be limited.

Our net operating loss, or NOL, carryforwards generated in tax years ending on or prior to December 31, 2017, are only permitted to be carried forward for 20 years under applicable U.S. tax law. Under the Tax Act, our federal NOLs generated in tax years ending after December 31, 2017, may be carried forward indefinitely, but the deductibility of such federal NOLs generated in tax years beginning after December 31, 2017, is limited. It is uncertain if and to what extent various states will conform to the Tax Act. In addition, under Sections 382 and 383 of the Internal Revenue Code of 1986, as amended, and corresponding provisions of state law, if a corporation undergoes an "ownership change," which is generally defined 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 NOL carryforwards and other pre-change tax attributes to offset its post-change income or taxes may be limited. We do not believe we have experienced any previous ownership changes, but the determination is complex and there can be no assurance we are correct. Furthermore, we may experience ownership changes in the future as a result of subsequent shifts in our stock ownership, some of which may be outside of our control.

As a result, our pre-2018 NOL carryforwards may expire prior to being used and our NOL carryforwards generated thereafter will be subject to a percentage limitation and, if we undergo an ownership change (or if we previously underwent such an ownership change), our ability to use all of our pre-change NOLs and other pre-change tax attributes (such as research tax credits) to offset our post-change income or taxes may be limited. Similar provisions of state tax law may also apply to limit our use of accumulated state tax attributes. In addition, at the state level, there may be periods during which the use of NOLs is suspended or otherwise limited, which could accelerate or permanently increase state taxes owed. As a result, we may be unable to use all or a material portion of our NOLs and other tax attributes, which could adversely affect our future cash flows.

Our effective tax rate may fluctuate, and we may incur obligations in tax jurisdictions in excess of accrued amounts.

Our effective tax rate is derived from a combination of applicable tax rates in the various places that we operate. In preparing our financial statements, we estimate the amount of tax that will become payable in each of such places. Nevertheless, our effective tax rate may be different than experienced in the past due to numerous factors, including passage of the newly enacted federal income tax law, changes in the mix of our profitability from state to state, the results of examinations and audits of our tax filings, our inability to secure or sustain acceptable agreements with tax authorities, changes in accounting for income taxes and changes in tax laws. Any of these factors could cause us to experience an effective tax rate significantly different from previous periods or our current expectations and may result in tax obligations in excess of amounts accrued in our financial statements.

The price of our common stock is volatile.

The market prices for securities of biotechnology and pharmaceutical companies historically have been highly volatile, and the market for these securities has from time to time experienced significant price and volume fluctuations that are unrelated to the operating performance of particular companies. Furthermore, especially as we and our market capitalization have grown, the price of our common stock has been increasingly affected by quarterly and annual comparisons with the valuations and recommendations of the analysts who cover our business. If our results do not meet these analysts' forecasts, the expectations of our investors or the financial guidance we provide to investors in any period, which is based on assumptions that may be incorrect or that may change from quarter to quarter, the market price of our common stock could decline. Over the course of the last 12 months, the price of our common stock has ranged from approximately $127.00 per share to approximately $65.00 per share. The market price of our common stock may fluctuate in response to many factors, including:

- sales of INGREZZA and ORILISSA;
- the status and cost of our post-marketing commitments for INGREZZA;
- the results of our clinical trials;

- reports of safety issues related to INGREZZA or ORILISSA;
- developments concerning new and existing collaboration agreements;
- announcements of technological innovations or new therapeutic products by us or others;
- general economic and market conditions, including economic and market conditions affecting the biotechnology industry;
- developments in patent or other proprietary rights;
- developments related to the FDA;
- future sales of our common stock by us or our stockholders;
- comments by securities analysts;
- additions or departures of key personnel;
- fluctuations in our operating results;
- potential litigation matters;
- government regulation;
- government and third-party payor coverage and reimbursement;
- failure of any of our product candidates, if approved, to achieve commercial success; and
- public concern as to the safety of our drugs.

If we cannot raise additional funding, we may be unable to complete development of our product candidates or establish commercial and manufacturing capabilities in the future.

We may require additional funding to effectively commercialize INGREZZA, to continue our research and product development programs, to conduct preclinical studies and clinical trials, for operating expenses, to pursue regulatory approvals for our product candidates, for the costs involved in filing and prosecuting patent applications and enforcing or defending patent claims, if any, and the cost of product in-licensing and any possible acquisitions. In addition, we may require additional funding to establish manufacturing and marketing capabilities in the future. We believe that our existing capital resources, together with investment income, and future payments due under our strategic alliances, will be sufficient to satisfy our current and projected funding requirements for at least the next 12 months. However, these resources might be insufficient to conduct research and development programs, the cost of product in-taking and possible acquisitions, fully commercialize products and operate the company to the full extent currently planned. If we cannot obtain adequate funds, we may be required to curtail significantly our commercial plans or one or more of our research and development programs or obtain funds through additional arrangements with corporate collaborators or others that may require us to relinquish rights to some of our technologies or product candidates.

Our future capital requirements will depend on many factors, including:

- the commercial success of INGREZZA and/or ORILISSA;
- debt service obligations on the 2024 Notes;
- continued scientific progress in our R&D and clinical development programs;
- the magnitude and complexity of our research and development programs;
- progress with preclinical testing and clinical trials;
- the time and costs involved in obtaining regulatory approvals;
- the costs involved in filing and pursuing patent applications, enforcing patent claims, or engaging in interference proceedings or other patent litigation;
- competing technological and market developments;
- the establishment of additional strategic alliances;
- developments related to any future litigation;
- the cost of commercialization activities and arrangements, including manufacturing of our product candidates; and
- the cost of product in-licensing and any possible acquisitions.

We intend to seek additional funding through strategic alliances and may seek additional funding through public or private sales of our securities, including equity securities. For example, for so long as we continue to satisfy the requirements to be deemed a well-known seasoned issuer, we can utilize a shelf registration statement currently on file with the SEC, to allow us to issue an unlimited number of securities from time to time. In addition, during the second quarter of 2017, we issued the 2024 Notes and we have previously financed capital purchases and may continue to pursue opportunities to obtain additional debt financing in the future. Additional equity or debt financing might not be available on reasonable terms, if at all. Any additional equity financings will be dilutive to our stockholders and any additional debt financings may involve operating covenants that restrict our business.

Compliance with changing regulation of corporate governance and public disclosure may result in additional expenses.

Changing laws, regulations and standards relating to corporate governance and public disclosure, including the Sarbanes-Oxley Act of 2002, the Dodd-Frank Wall Street Reform and Consumer Protection Act, new SEC regulations and Nasdaq rules, are creating uncertainty for companies such as ours. These laws, regulations and standards are subject to varying interpretations in some cases due to their lack of specificity, and as a result, their application in practice may evolve over time as new guidance is provided by regulatory and governing bodies, which could result in continuing uncertainty regarding compliance matters and higher costs necessitated by ongoing revisions to disclosure and governance practices. We are committed to maintaining high standards of corporate governance and public disclosure. As a result, our efforts to comply with evolving laws, regulations and standards have resulted in, and are likely to continue to result in, increased sales, general and administrative expenses and management time related to compliance activities. If we fail to comply with these laws, regulations and standards, our reputation may be harmed and we might be subject to sanctions or investigation by regulatory authorities, such as the SEC. Any such action could adversely affect our financial results and the market price of our common stock.

Risks Related to Our Industry

Health care reform measures and other recent legislative initiatives could adversely affect our business.

The business and financial condition of pharmaceutical and biotechnology companies are affected by the efforts of governmental and third-party payors to contain or reduce the costs of health care. In the U.S., comprehensive health care reform legislation was enacted by the Federal government and we expect that there will continue to be a number of federal and state proposals to implement government control over the pricing of prescription pharmaceuticals. In addition, increasing emphasis on reducing the cost of health care in the U.S. will continue to put pressure on the rate of adoption and pricing of prescription pharmaceuticals. Moreover, in some foreign jurisdictions, pricing of prescription pharmaceuticals is already subject to government control. Additionally, other recent federal and state legislation imposes new obligations on manufacturers of pharmaceutical products, among others, related to product tracking and tracing. Among the requirements of this new legislation, manufacturers are required to provide certain information regarding the drug product provided to individuals and entities to which product ownership is transferred, label drug product with a product identifier, and keep certain records regarding distribution of the drug product. Further, under this new legislation, manufacturers will have drug product investigation, quarantine, disposition, notification and purchaser license verification responsibilities related to counterfeit, diverted, stolen, and intentionally adulterated products, as well as products that are the subject of fraudulent transactions or which are otherwise unfit for distribution such that they would be reasonably likely to result in serious health consequences or death.

Additionally, in March 2010, Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act of 2010, or collectively the ACA, was signed into law, which was intended to broaden access to health insurance, reduce or constrain the growth of healthcare spending, enhance remedies against fraud and abuse, add transparency requirements for the healthcare and health insurance industries, impose taxes and fees on the health industry and impose additional health policy reforms. Among the provisions of the ACA of importance to our potential drug candidates are:

- an annual, nondeductible fee on any entity that manufactures, or imports, specified branded prescription drugs and biologic agents, apportioned among these entities according to their market share in certain government healthcare programs;
- an increase in the statutory minimum rebates a manufacturer must pay under the Medicaid Drug Rebate Program to 23.1% and 13.0% of the average manufacturer price for branded and generic drugs, respectively;
- a new methodology by which rebates owed by manufacturers under the Medicaid Drug Rebate Program are calculated for drugs that are inhaled, infused, instilled, implanted or injected;
- extension of a manufacturer’s Medicaid rebate liability to covered drugs dispensed to individuals who are enrolled in Medicaid managed care organizations;
- expansion of eligibility criteria for Medicaid programs by, among other things, allowing states to offer Medicaid coverage to certain individuals with income at or below 133% of the federal poverty level, thereby potentially increasing a manufacturer’s Medicaid rebate liability;

- a new Medicare Part D coverage gap discount program, in which manufacturers must agree to offer 70% point-of-sale discounts off negotiated prices of applicable brand drugs to eligible beneficiaries during their coverage gap period, as a condition for a manufacturer's outpatient drugs to be covered under Medicare Part D;
- expansion of the entities eligible for discounts under the Public Health Service pharmaceutical pricing program; and
- a new Patient-Centered Outcomes Research Institute to oversee, identify priorities in, and conduct comparative clinical effectiveness research, along with funding for such research.

Some of the provisions of the ACA have yet to be fully implemented, and there have been legal and political challenges to certain aspects of the ACA. Since January 2017, two executive orders and other directives designed to delay, circumvent, or loosen certain requirements mandated by the ACA have been put into place. Concurrently, Congress has considered legislation that would repeal or repeal and replace all or part of the ACA. While Congress has not passed repeal legislation, the Tax Cuts and Jobs Act includes a provision repealing, effective January 1, 2019, the tax-based shared responsibility payment imposed by the ACA on certain individuals who fail to maintain qualifying health coverage for all or part of a year that is commonly referred to as the "individual mandate". On January 22, 2018, a continuing resolution was enacted on appropriations for fiscal year 2018 that delayed the implementation of certain ACA-mandated fees, including the so-called "Cadillac" tax on certain high cost employer-sponsored insurance plans, the annual fee imposed on certain health insurance providers based on market share, and the medical device excise tax on non-exempt medical devices. The Bipartisan Budget Act of 2018, or the BBA, among other things, amends the ACA, effective January 1, 2019, to close the coverage gap in most Medicare drug plans, commonly referred to as the "donut hole". In July 2018, the Centers for Medicare and Medicaid Services, or CMS, published a final rule permitting further collections and payments to and from certain ACA-qualified health plans and health insurance issuers under the ACA risk adjustment program in response to the outcome of federal district court litigation regarding the method CMS uses to determine this risk adjustment. On December 14, 2018, a Texas U.S. District Court Judge ruled that the ACA is unconstitutional in its entirety because the "individual mandate" was repealed by Congress as part of the Tax Cuts and Jobs Act. While the Texas U.S. District Court Judge, as well as the current presidential administration and CMS, have stated that the ruling will have no immediate effect pending appeal of the decision, it is unclear how this decision, subsequent appeals, and other efforts to repeal and replace the ACA will impact the ACA and our business.

Other legislative changes have been proposed and adopted since the ACA was enacted. These changes include aggregate reductions to Medicare payments to providers of up to 2% per fiscal year pursuant to the Budget Control Act of 2011, which began in 2013 and, due to subsequent legislative amendments to the statute, including the BBA, will remain in effect through 2027 unless additional Congressional action is taken. The American Taxpayer Relief Act of 2012, among other things, further reduced Medicare payments to several providers, including hospitals and cancer treatment centers, increased the statute of limitations period for the government to recover overpayments to providers from three to five years.

Additional changes that may affect our business include the expansion of new programs such as Medicare payment for performance initiatives for physicians under the Medicare Access and CHIP Reauthorization Act of 2015, which will be fully implemented in 2019. At this time, it is unclear how the introduction of the Medicare quality payment program will impact overall physician reimbursement.

Also, there has been heightened governmental scrutiny recently over pharmaceutical pricing practices in light of the rising cost of prescription drugs and biologics. Such scrutiny has resulted in several recent Congressional inquiries and proposed and enacted federal and state legislation designed to, among other things, bring more transparency to product pricing, review the relationship between pricing and manufacturer patient programs, and reform government program reimbursement methodologies for products. At the federal level, the current presidential administration's budget proposal for fiscal year 2019 contains further drug price control measures that could be enacted during the 2019 budget process or in other future legislation, including, for example, measures to permit Medicare Part D plans to negotiate the price of certain drugs under Medicare Part B, to allow some states to negotiate drug prices under Medicaid, and to eliminate cost sharing for generic drugs for low-income patients. Further, the current presidential administration released a "Blueprint" to lower drug prices and reduce out of pocket costs of drugs that contains additional proposals to increase manufacturer competition, increase the negotiating power of certain federal healthcare programs, incentivize manufacturers to lower the list price of their products and reduce the out of pocket costs of drug products paid by consumers. The U.S. Department of Health and Human Services has already started the process of soliciting feedback on certain of these measures and, additionally, is immediately implementing others under its existing authority. For example, in September 2018, CMS announced that it will allow Medicare Advantage Plans the option to use step therapy for Part B drugs beginning January 1, 2019, and in October 2018, CMS proposed a new rule that would require direct-to-consumer television advertisements of prescription drugs and biological products, for which payment is available through or under Medicare or Medicaid, to include in the advertisement the Wholesale Acquisition Cost, or list price, of that drug or biological product. Although a number of these, and other potential, proposals will require authorization through additional legislation to become effective, Congress and the executive branch have each indicated that it will continue to seek new legislative and/or administrative measures to control drug costs. At the state level, legislatures have increasingly passed legislation and implemented regulations designed to control pharmaceutical and biological product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access and marketing cost disclosure and transparency measures, and, in some cases, designed to encourage importation from other countries and bulk purchasing.

We expect that the ACA, as well as other healthcare reform measures that may be adopted in the future, may result in more rigorous coverage criteria and lower reimbursement, and in additional downward pressure on the price that we receive for any approved product. Any reduction in reimbursement from Medicare or other government-funded programs may result in a similar reduction in payments from private payors. The implementation of cost containment measures or other healthcare reforms may prevent us from being able to generate revenue, attain sustained profitability or commercialize our drugs.

Additionally, on May 30, 2018, the Trickett Wendler, Frank Mongiello, Jordan McLinn, and Matthew Bellina Right to Try Act of 2017 was signed into law. The law, among other things, provides a federal framework for certain patients to access certain investigational new drug products that have completed a Phase I clinical trial and that are undergoing investigation for FDA approval. Under certain circumstances, eligible patients can seek treatment without enrolling in clinical trials and without obtaining FDA permission under the FDA expanded access program. There is no obligation for a drug manufacturer to make its drug products available to eligible patients as a result of the Right to Try Act.

We are currently unable to predict what additional legislation or regulation, if any, relating to the health care industry may be enacted in the future or what effect recently enacted federal legislation or any such additional legislation or regulation would have on our business. The pendency or approval of such proposals or reforms could result in a decrease in our stock price or limit our ability to raise capital or to enter into collaboration agreements for the further development and commercialization of our programs and products.

We face intense competition, and if we are unable to compete effectively, the demand for our products may be reduced.

The biotechnology and pharmaceutical industries are subject to rapid and intense technological change. We face, and will continue to face, competition in the development and marketing of our products and product candidates from academic institutions, government agencies, research institutions and biotechnology and pharmaceutical companies.

Competition may also arise from, among other things:

- other drug development technologies;
- methods of preventing or reducing the incidence of disease, including vaccines; and
- new small molecule or other classes of therapeutic agents.

Developments by others may render our product candidates or technologies obsolete or noncompetitive.

We are commercializing and performing research on or developing products for the treatment of several disorders including endometriosis, TD, uterine fibroids, essential tremor, classic congenital adrenal hyperplasia, pain, and other neurological and endocrine-related diseases and disorders, and there are a number of competitors to our products and product candidates. If one or more of our competitors' products or programs are successful, the market for our products may be reduced or eliminated. For example, in August 2017, Teva received approval for AUSTEDO to treat TD.

Compared to us, many of our competitors and potential competitors have substantially greater:

- capital resources;
- research and development resources, including personnel and technology;
- regulatory experience;
- preclinical study and clinical testing experience;
- manufacturing, marketing and distribution experience; and
- production facilities.

If we are unable to protect our intellectual property, our competitors could develop and market products based on our discoveries, which may reduce demand for our products.

Our success will depend on our ability to, among other things:

- obtain patent protection for our products;
- preserve our trade secrets;
- prevent third parties from infringing upon our proprietary rights; and
- operate without infringing upon the proprietary rights of others, both in the U.S. and internationally.

Because of the substantial length of time and expense associated with bringing new products through the development and regulatory approval processes in order to reach the marketplace, the pharmaceutical industry places considerable importance on obtaining patent and trade secret protection for new technologies, products and processes. Accordingly, we intend to seek patent protection for our proprietary technology and compounds. However, we face the risk that we may not obtain any of these patents and that the breadth of claims we obtain, if any, may not provide adequate protection of our proprietary technology or compounds.

We also rely upon unpatented trade secrets and improvements, unpatented know-how and continuing technological innovation to develop and maintain our competitive position, which we seek to protect, in part, through confidentiality agreements with our commercial collaborators, employees and consultants. We also have invention or patent assignment agreements with our employees and some, but not all, of our commercial collaborators and consultants. However, if our employees, commercial collaborators or consultants breach these agreements, we may not have adequate remedies for any such breach, and our trade secrets may otherwise become known or independently discovered by our competitors.

In addition, although we own a number of patents, the issuance of a patent is not conclusive as to its validity or enforceability, and third parties may challenge the validity or enforceability of our patents. We cannot assure you how much protection, if any, will be given to our patents if we attempt to enforce them and they are challenged in court or in other proceedings. It is possible that a competitor may successfully challenge our patents or that challenges will result in limitations of their coverage. Moreover, competitors may infringe our patents or successfully avoid them through design innovation. To prevent infringement or unauthorized use, we may need to file infringement claims, which are expensive and time-consuming. In addition, in an infringement proceeding a court may decide that a patent of ours is not valid or is unenforceable or may refuse to stop the other party from using the technology at issue on the grounds that our patents do not cover its technology. Interference proceedings declared by the U.S. Patent and Trademark Office may be necessary to determine the priority of inventions with respect to our patent applications or those of our licensors. Litigation or interference proceedings may fail and, even if successful, may result in substantial costs and be a distraction to management. We cannot assure you that we will be able to prevent misappropriation of our proprietary rights, particularly in countries where the laws may not protect such rights as fully as in the U.S.

If we fail to obtain or maintain orphan drug designation or other regulatory exclusivity for some of our product candidates, our competitive position would be harmed.

A product candidate that receives orphan drug designation can benefit from a streamlined regulatory process as well as potential commercial benefits following approval. Currently, this designation provides market exclusivity in the U.S. and the EU for seven years and ten years, respectively, if a product is the first such product approved for such orphan indication. This market exclusivity does not, however, pertain to indications other than those for which the drug was specifically designated in the approval, nor does it prevent other types of drugs from receiving orphan designations or approvals in these same indications. Further, even after an orphan drug is approved, the FDA can subsequently approve the same drug for the same condition if the FDA concludes that the new drug is clinically superior to the orphan product or a market shortage occurs.

In the EU, orphan exclusivity may be reduced to six years if the drug no longer satisfies the original designation criteria or can be lost altogether if the marketing authorization holder consents to a second orphan drug application or cannot supply enough drug, or when a second applicant demonstrates its drug is “clinically superior” to the original orphan drug. We may not be successful obtaining orphan drug designations for any indications and, even if we succeed, such orphan drug designations may fail to result in or maintain orphan drug exclusivity upon approval, which would harm our competitive position.

The technologies we use in our research as well as the drug targets we select may infringe the patents or violate the proprietary rights of third parties.

We cannot assure you that third parties will not assert patent or other intellectual property infringement claims against us or our collaborators with respect to technologies used in potential products. If a patent infringement suit were brought against us or our collaborators, we or our collaborators could be forced to stop or delay developing, manufacturing or selling potential products that are claimed to infringe a third party’s intellectual property unless that party grants us or our collaborators rights to use its intellectual property. In such cases, we could be required to obtain licenses to patents or proprietary rights of others in order to continue to commercialize our products. However, we may not be able to obtain any licenses required under any patents or proprietary rights of third parties on acceptable terms, or at all. Even if our collaborators or we were able to obtain rights to the third party’s intellectual property, these rights may be non-exclusive, thereby giving our competitors access to the same intellectual property. Ultimately, we may be unable to commercialize some of our potential products or may have to cease some of our business operations as a result of patent infringement claims, which could severely harm our business.

Our employees, independent contractors, principal investigators, consultants, commercial partners and vendors may engage in misconduct or other improper activities, including non-compliance with regulatory standards and requirements.

We are exposed to the risk of employee fraud or other misconduct. Misconduct by employees and independent contractors, such as principal investigators, consultants, commercial partners and vendors, or by employees of our commercial partners could include failures to comply with FDA regulations, to provide accurate information to the FDA, to comply with manufacturing standards we have established, to comply with federal and state healthcare fraud and abuse laws, to report financial information or data accurately, to maintain the confidentiality of our trade secrets or the trade secrets of our commercial partners, or to disclose unauthorized activities to us. In particular, sales, marketing and other business arrangements in the healthcare industry are subject to extensive laws intended to prevent fraud, kickbacks, self-dealing and other abusive practices. Employee and independent contractor misconduct could also involve the improper use of individually identifiable information, including, without limitation, information obtained in the course of clinical trials, which could result in regulatory sanctions and serious harm to our reputation. Any action against our employees, independent contractors, principal investigators, consultants, commercial partners or vendors for violations of these laws could result in significant civil, criminal, and administrative penalties, fines, and imprisonment.

Any relationships with healthcare professionals, principal investigators, consultants, customers (actual and potential) and third-party payors in connection with our current and future business activities are and will continue to be subject, directly or indirectly, to federal and state healthcare laws. If we are unable to comply, or have not fully complied, with such laws, we could face penalties, contractual damages, reputational harm, diminished profits and future earnings and curtailment or restructuring of our operations.

Our business operations and activities may be directly, or indirectly, subject to various federal and state healthcare laws, including without limitation, fraud and abuse laws, false claims laws, data privacy and security laws, as well as transparency laws regarding payments or other items of value provided to healthcare providers. These laws may restrict or prohibit a wide range of business activities, including, but not limited to, research, manufacturing, distribution, pricing, discounting, marketing and promotion, sales commission, customer incentive programs and other business arrangements. These laws may impact, among other things, our current activities with principal investigators and research subjects, as well as current and future sales, marketing, patient co-payment assistance and education programs.

Such laws include:

- the federal Anti-Kickback Statute which prohibits, among other things, persons and entities from knowingly and willfully soliciting, offering, receiving or providing remuneration, directly or indirectly, in cash or in kind, to induce or reward, or in return for, either the referral of an individual for, or the purchase, order or recommendation of, any good or service, for which payment may be made under a federal healthcare program such as Medicare and Medicaid;
- the federal civil and criminal false claims laws, including the federal civil False Claims Act, and civil monetary penalties laws, which impose criminal and civil penalties against individuals or entities for, among other things, knowingly presenting, or causing to be presented, to the federal government, claims for payment that are false or fraudulent or making a false statement to avoid, decrease or conceal an obligation to pay money to the federal government;
- HIPAA, which imposes criminal and civil liability for, among other things, executing a scheme to defraud any healthcare benefit program or making false statements relating to healthcare matters;
- HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act, and its implementing regulations, which also imposes obligations, including mandatory contractual terms, on certain types of individuals and entities, with respect to safeguarding the privacy, security and transmission of individually identifiable health information;
- the federal Physician Payments Sunshine Act, which requires certain manufacturers of drugs, devices, biologics and medical supplies for which payment is available under Medicare, Medicaid or the Children's Health Insurance Program, with specific exceptions, to report annually to CMS information related to payments or other transfers of value made to physicians and teaching hospitals, and applicable manufacturers and applicable group purchasing organizations to report annually to CMS ownership and investment interests held by physicians and their immediate family members; and
- analogous state, local, and foreign laws and regulations, such as state anti-kickback and false claims laws, which may apply to sales or marketing arrangements and claims involving healthcare items or services reimbursed by non-governmental third party payors, including private insurers; state laws that require pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government; state laws that require drug manufacturers to report information related to payments and other transfers of value to physicians and other healthcare providers or marketing expenditures; state and local laws that require the registration of pharmaceutical sales representatives; state and local "drug takeback" laws and regulations; and state and foreign laws governing the privacy and security of health information in some circumstances, many of which differ from each other in significant ways and often are not preempted by HIPAA, thus complicating compliance efforts.

Efforts to ensure that our business arrangements will comply with applicable healthcare laws may involve substantial costs. It is possible that governmental and enforcement authorities will conclude that our business practices may not comply with current or future statutes, regulations or case law interpreting applicable fraud and abuse or other healthcare laws. If our operations or activities are found to be in violation of any of the laws described above or any other governmental regulations that apply to us, we may be subject to, without limitation, civil, criminal and administrative penalties, damages, monetary fines, disgorgement, possible exclusion from participation in Medicare, Medicaid and other federal healthcare programs, additional reporting requirements and oversight if we become subject to a corporate integrity agreement or similar agreement to resolve allegations of non-compliance with these laws, contractual damages, reputational harm, diminished profits and future earnings and curtailment or restructuring of our operations, any of which could adversely affect our ability to operate.

In addition, any sales of our product once commercialized outside the U.S. will also likely subject us to foreign equivalents of the healthcare laws mentioned above, among other foreign laws.

We face potential product liability exposure far in excess of our limited insurance coverage.

The use of any of our potential products in clinical trials, and the sale of any approved products, including INGREZZA, may expose us to liability claims. These claims might be made directly by consumers, health care providers, pharmaceutical companies or others selling our products. We have obtained limited product liability insurance coverage for our clinical trials in the amount of $25 million per occurrence and $25 million in the aggregate. However, our insurance may not reimburse us or may not be sufficient to reimburse us for any expenses or losses we may suffer. Moreover, insurance coverage is becoming increasingly expensive, and we may not be able to maintain insurance coverage at a reasonable cost or in sufficient amounts to protect us against losses due to liability. Upon FDA approval of INGREZZA we expanded our insurance coverage to include product liability insurance related to the sale of INGREZZA in the amount of $25 million per occurrence and $25 million in the aggregate. However, we may be unable to obtain commercially reasonable product liability insurance for any products approved in the future for marketing. On occasion, juries have awarded large judgments in class action lawsuits based on drugs that had unanticipated side effects. A successful product liability claim or series of claims brought against us would decrease our cash reserves and could cause our stock price to fall. Furthermore, regardless of the eventual outcome of a product liability claim, any product liability claim against us may decrease demand for our approved products, including INGREZZA, damage our reputation, result in regulatory investigations that could require costly recalls or product modifications, cause clinical trial participants to withdrawal, result in costs to defend the related litigation, decrease our revenue, and divert management's attention from managing our business.

Our activities involve hazardous materials, and we may be liable for any resulting contamination or injuries.

Our research activities involve the controlled use of hazardous materials. We cannot eliminate the risk of accidental contamination or injury from these materials. If an accident occurs, a court may hold us liable for any resulting damages, which may harm our results of operations and cause us to use a substantial portion of our cash reserves, which would force us to seek additional financing.

Cyber security breaches and other disruptions could compromise our information and expose us to liability, which would cause our business and reputation to suffer.

We are increasingly dependent on information technology systems and infrastructure, including mobile technologies, to operate our business. In the ordinary course of our business, we collect and store confidential and sensitive electronic information on our networks and in our data centers. This information includes, among other things, our intellectual property and proprietary information, the confidential information of our collaborators and licensees, and the personally identifiable information of our employees. It is important to our operations and business strategy that this electronic information remains secure and is perceived to be secure. The size and complexity of our information technology systems, and those of third-party vendors with whom we contract, and the volume of data we retain, make such systems potentially vulnerable to breakdown, malicious intrusion, security breaches and other cyber-attacks. Information security risks have significantly increased in recent years in part due to the proliferation of new technologies and the increased sophistication and activities of organized crime, hackers, terrorists and other external parties, including foreign state actors. A security breach or privacy violation that leads to disclosure or modification of or prevents access to personally identifiable information or other protected information could harm our reputation, compel us to comply with federal and/or state breach notification laws and foreign law equivalents, subject us to mandatory corrective action, require us to verify the correctness of database contents and otherwise subject us to liability under laws and regulations that protect personal data, resulting in increased costs or loss of revenue. Similarly, the loss of clinical trial data from completed or ongoing or planned clinical trials could result in delays in our regulatory approval efforts and significantly increase our costs to recover or reproduce the data. If we are unable to prevent such security breaches or privacy violations or implement satisfactory remedial measures, our operations could be disrupted, and we may suffer loss of reputation, financial loss and other regulatory penalties because of lost or misappropriated information. In addition, these breaches and other inappropriate access can be difficult to detect, and any delay in identifying them may lead to increased harm of the type described above. Moreover, the prevalent use of mobile devices that access confidential information increases the risk of data security breaches, which could lead to the loss of confidential information, trade secrets or other intellectual property. As cyber threats continue to evolve, we may be required to expend significant additional resources to continue to modify or

enhance our protective measures or to investigate and remediate any information security vulnerabilities. While we have implemented security measures to protect our data security and information technology systems, such measures may not prevent such events. Significant disruptions of our information technology systems or breaches of data security could have a material adverse effect on our business, financial condition and results of operations.

Compliance with global privacy and data security requirements could result in additional costs and liabilities to us or inhibit our ability to collect and process data globally, and the failure to comply with such requirements could have a material adverse effect on our business, financial condition or results of operations.

The regulatory framework for the collection, use, safeguarding, sharing, transfer and other processing of information worldwide is rapidly evolving and is likely to remain uncertain for the foreseeable future. For example, the EU's General Data Protection Regulation, or GDPR, imposes strict obligations on the processing of personal data, including personal health data, and the free movement of such data. The GDPR applies to any company established in the EU as well as any company outside the EU that processes personal data in connection with the offering of goods or services to individuals in the EU or the monitoring of their behavior. The GDPR enhances data protection obligations for processors and controllers of personal data, including, for example, obligations relating to: processing health and other sensitive data; obtaining consent of individuals; providing notice to individuals regarding data processing activities; responding to data subject requests; taking certain measures when engaging third-party processors; notifying data subjects and regulators of data breaches; implementing safeguards to protect the security and confidentiality of personal data; and transferring personal data to countries outside the EU, including the U.S. The GDPR imposes substantial fines for breaches of data protection requirements, which can be up to four percent of global revenue or 20 million euros, whichever is greater, and it also confers a private right of action on data subjects for breaches of data protection requirements. The GDPR and other changes in laws or regulations associated with the enhanced protection of certain types of sensitive data, such as healthcare data or other personal information from our clinical trials, could require us to change our business practices or lead to government enforcement actions, private litigation or significant penalties against us and could have a material adverse effect on our business, financial condition or results of operations.

ITEM 1B. *UNRESOLVED STAFF COMMENTS*

None.

ITEM 2. *PROPERTIES*

We lease our corporate headquarters, which are located in San Diego, California, and consist of 140,000 square feet of laboratory and office space located at 12780 El Camino Real, 45,000 square feet of office space located at 12777 High Bluff Drive, and 7,500 square feet of office space located at 12790 El Camino Real.

We believe that our property and equipment are generally well maintained and in good operating condition.

ITEM 3. *LEGAL PROCEEDINGS*

The information set forth under Note 12 "Commitments and Contingencies" to our consolidated financial statements included in Part II, Item 8 of this Annual Report on Form 10-K is incorporated herein by reference.

ITEM 4. *MINE SAFETY DISCLOSURES*

None.

PART II

ITEM 5. *MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES*

Our common stock is traded on the Nasdaq Global Select Market under the symbol "NBIX." The following table sets forth for the periods indicated the high and low sale price for our common stock. These prices do not include retail markups, markdowns or commissions.

	High	Low
Year Ended December 31, 2018		
1st Quarter	$ 92.98	$ 74.12
2nd Quarter	$ 106.26	$ 74.34
3rd Quarter	$ 126.98	$ 96.98
4th Quarter	$ 125.59	$ 64.72
Year Ended December 31, 2017		
1st Quarter	$ 47.43	$ 38.38
2nd Quarter	$ 55.38	$ 39.21
3rd Quarter	$ 61.51	$ 44.75
4th Quarter	$ 78.05	$ 57.71

As of February 1, 2019, there were approximately 51 stockholders of record of our common stock. We have not paid any cash dividends on our common stock since inception and do not anticipate paying cash dividends in the foreseeable future.

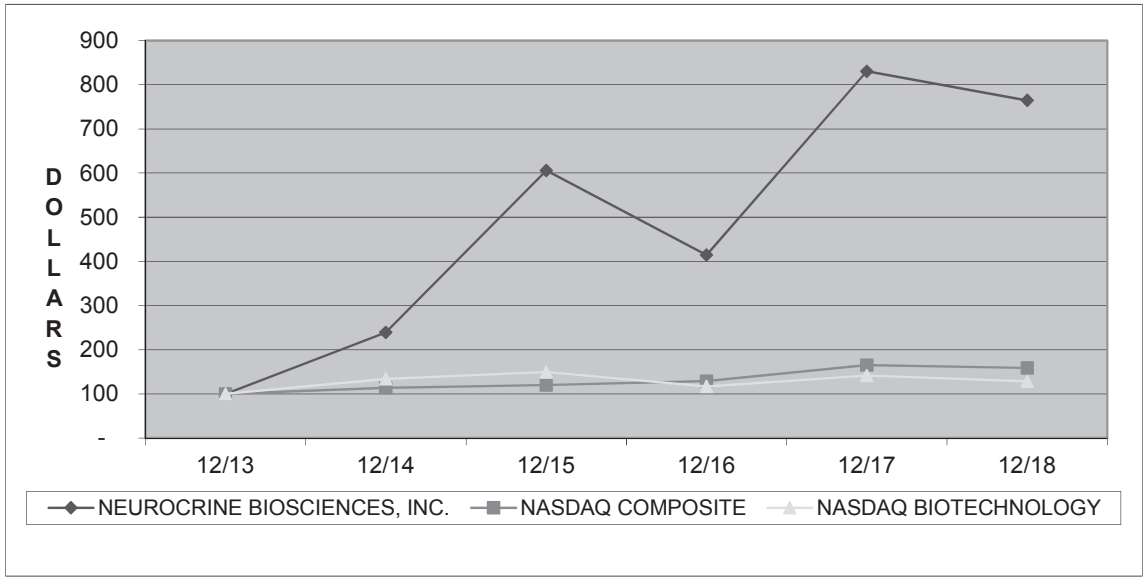
Information about our equity compensation plans is incorporated herein by reference to Item 12 of Part III of this Annual Report on Form 10-K.

Recent Sales of Unregistered Securities

There were no unregistered sales of equity securities during fiscal 2018.

Stock Performance Graph and Cumulative Total Return*

The graph below shows the cumulative total stockholder return assuming the investment of $100 on December 31, 2013 (and the reinvestment of dividends thereafter) in each of (i) Neurocrine Biosciences, Inc.'s common stock, (ii) the Nasdaq Composite Index and (iii) the Nasdaq Biotechnology Index. The comparisons in the graph below are based upon historical data and are not indicative of, or intended to forecast, future performance of our common stock or Indexes.



* *The material in this section is not "soliciting material", is not deemed "filed" with the Securities and Exchange Commission (SEC) and is not to be incorporated by reference into any of our SEC filings whether made before or after the date hereof and irrespective of any general incorporation language in any such SEC filing except to the extent we specifically incorporate this section by reference.*

ITEM 6. *SELECTED FINANCIAL DATA*

The following selected financial data have been derived from our audited financial statements. The information set forth below is not necessarily indicative of our results of future operations and should be read in conjunction with "Management's Discussion and Analysis of Financial Condition and Results of Operations" and the financial statements and notes thereto appearing elsewhere in this Annual Report on Form 10-K.

(in thousands, except per share data)	2018	2017	2016	2015	2014
STATEMENT OF COMPREHENSIVE INCOME (LOSS) DATA					
Revenues:					
Product sales, net	$ 409,608	$ 116,626	$ —	$ —	$ —
Collaboration revenue	41,632	45,000	15,000	19,769	—
Total revenues	451,240	161,626	15,000	19,769	—
Operating expenses:					
Cost of sales	4,889	1,254	—	—	—
Research and development	160,524	121,827	94,291	81,491	46,425
Sales, general and administrative	248,932	169,906	68,081	32,480	17,986
Total operating expenses	414,345	292,987	162,372	113,971	64,411
Income (loss) from operations	36,895	(131,361)	(147,372)	(94,202)	(64,411)
Other (expense) income:					
Interest expense	(30,530)	(19,523)	—	—	—
Investment income and other, net	15,476	8,342	6,282	5,273	3,869
Total other (expense) income	(15,054)	(11,181)	6,282	5,273	3,869
Income (loss) before provision for income taxes	21,841	(142,542)	(141,090)	(88,929)	(60,542)
Provision for income taxes	730	—	—	—	—
Net income (loss)	$ 21,111	$ (142,542)	$ (141,090)	$ (88,929)	$ (60,542)
Net income (loss) per share:					
Basic	$ 0.23	$ (1.62)	$ (1.63)	$ (1.05)	$ (0.81)
Diluted	$ 0.22	$ (1.62)	$ (1.63)	$ (1.05)	$ (0.81)
Shares used in calculation of net income (loss) per share:					
Weighted average common shares outstanding, basic	90,235	88,089	86,713	84,496	74,577
Weighted average common shares outstanding, diluted	95,386	88,089	86,713	84,496	74,577
BALANCE SHEET DATA					
Cash, cash equivalents and investments	$ 866,941	$ 763,290	$ 350,840	$ 461,679	$ 231,301
Working capital	649,544	500,493	280,028	358,359	182,539
Total assets	993,151	817,591	365,086	474,785	243,033
Convertible senior notes	388,496	369,618	—	—	—
Accumulated deficit	(1,177,755)	(1,198,866)	(1,056,324)	(915,234)	(826,305)
Total stockholders' equity	480,765	372,138	314,877	424,454	208,699

ITEM 7. *MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS*

The following Management's Discussion and Analysis of Financial Condition and Results of Operations section contains forward-looking statements pertaining to, among other things, the commercialization of our product and product candidates, the expected continuation of our collaborative agreements, the receipt of research and development payments thereunder, the future achievement of various milestones in product development and the receipt of payments related thereto, the potential receipt of royalty payments, preclinical testing and clinical trials of potential products, the period of time that our existing capital resources will meet our funding requirements, and our financial results of operations. Our actual results could differ materially from those anticipated in these forward-looking statements as a result of various risks and uncertainties, including those set forth in this Annual Report on Form 10-K under the heading "Item 1A. Risk Factors." See "Forward-Looking Statements" in Part I of this Annual Report on Form 10-K.

Overview

We are a company focused on discovering, developing, and commercializing innovative and life-changing pharmaceuticals, in diseases with high unmet medical needs, through our novel research and development (R&D) platform, focused on neurological and endocrine related diseases and disorders. Utilizing a portfolio approach to drug discovery, we have multiple small molecule drug candidates at various stages of pharmaceutical development. We develop proprietary pharmaceuticals for our pipeline, as well as collaborate with other pharmaceutical companies on our products and product candidates.

On April 11, 2017, the United States Food and Drug Administration (FDA) approved INGREZZA® (valbenazine) capsules for the treatment of adults with tardive dyskinesia (TD). We market INGREZZA for TD in the United States (U.S.) through our specialty sales force focused primarily on physicians who treat TD patients, including psychiatrists and neurologists. The commercial launch of INGREZZA occurred on May 1, 2017.

On July 24, 2018, we were notified by AbbVie Inc. (AbbVie) that FDA approval was granted for ORILISSA® (elagolix) for the management of moderate to severe endometriosis pain in women. Discovered and developed through Phase II clinical trials by us, ORILISSA, the first FDA-approved oral medication for the management of endometriosis with associated moderate to severe pain in over a decade, began to be marketed by AbbVie in August 2018 as part of a collaboration to develop and commercialize elagolix for women's health.

Our clinical development programs include opicapone as an adjunctive therapy to levodopa/DOPA decarboxylase inhibitors in adult Parkinson's disease patients, elagolix for uterine fibroids partnered with AbbVie, NBI-74788 for the treatment of congenital adrenal hyperplasia (CAH), and a vesicular monoamine transporter 2 (VMAT2) inhibitor and a first-in-class central nervous system (CNS) compound each with potential use in the treatment of neurologic and psychiatric disorders.

AbbVie initiated Phase III studies of elagolix in patients with uterine fibroids in early 2016. The Phase III program included two replicate, pivotal, six-month efficacy and safety studies followed by a six-month safety and efficacy extension study. AbbVie provided positive topline efficacy data from the Phase III studies in women with uterine fibroids in the first quarter of 2018 and additional data from the six-month safety extension study in the third quarter of 2018. We believe the results from these studies will form the basis for an anticipated new drug application (NDA) submission to the FDA in the middle of 2019 for the approval of elagolix in the treatment of uterine fibroids.

We currently have three major collaborations. Two of these collaborations involve out-licensing of our proprietary technology to pharmaceutical partners. In June 2010, we announced an exclusive worldwide collaboration with AbbVie to develop and commercialize elagolix and all next-generation gonadotropin-releasing hormone (GnRH) antagonists (collectively, GnRH Compounds). In March 2015, we entered into a collaboration and license agreement with Mitsubishi Tanabe Pharma Corporation (Mitsubishi Tanabe) for the development and commercialization of INGREZZA for movement disorders in Japan and other select Asian markets. The third collaboration agreement, which was entered into in February 2018, is one in which we in-licensed technology from BIAL – Portela & Ca, S.A. (BIAL) for the development and commercialization of opicapone for the treatment of human diseases and conditions, including Parkinson's disease, in the U.S. and Canada.

On January 28, 2019, we entered into a collaboration and license agreement with a clinical-stage gene therapy company, Voyager Therapeutics, Inc., or Voyager. The collaboration is focused on the development and commercialization of four programs using Voyager's proprietary gene therapy platforms. The four programs consist of Voyager's VY-AADC program for Parkinson's disease and VY-FXN01 program for Friedreich's ataxia, as well as rights to two programs to be determined by the parties in the future. The effectiveness of the agreement is subject to certain conditions, including the expiration or termination of the applicable waiting period under the Hart-Scott-Rodino Antitrust Improvements Act of 1976, as amended, and other customary closing conditions. Refer to Note 13 to the consolidated financial statements for more information on the agreement.

We have funded our operations primarily through private and public offerings of our common stock, debt securities, and payments received under collaboration agreements. While we independently develop many of our product candidates, we entered into collaborations for several of our programs and intend to rely on our product revenues and existing and future collaborations to meet our funding requirements. While we were profitable for the year ended December 31, 2018, our future operating results and profitability may fluctuate from period to period as product candidates are advanced through the various stages of clinical development and as we proceed with the commercial launch of INGREZZA and other potential future pipeline products. As of December 31, 2018, we had an accumulated deficit of approximately $1.2 billion.

Results of Operations

Revenues

The following table presents our revenues by category during the periods presented:

	Year Ended December 31,		
(in thousands)	2018	2017	2016
Revenues:			
INGREZZA product sales, net	$ 409,608	$ 116,626	$ —
Collaboration revenue	41,632	45,000	15,000
Total revenues	$ 451,240	$ 161,626	$ 15,000

Product Sales, net

In April 2017, the FDA approved INGREZZA for the treatment of TD. INGREZZA became available for prescription in late April 2017. Net product sales were $409.6 million for 2018 and $116.6 million for 2017. There were no net product sales for 2016.

Collaboration Revenue

In July 2018, we were notified by AbbVie that FDA approval was granted for ORILISSA for the management of moderate to severe endometriosis pain in women, resulting in the achievement of a $40 million event-based milestone, which we recognized as revenue in the third quarter of 2018. We also recognized sales-based royalties of approximately $1.6 million for 2018, which are payable to us by AbbVie on quarterly net sales of ORILISSA.

In October 2017, AbbVie's NDA submission for elagolix in endometriosis was accepted as filed by the FDA, resulting in the achievement of a $30 million event-based milestone, which we recognized as revenue in the fourth quarter of 2017. We also recognized $15 million in development event-based payments as revenue in 2017, resulting from Mitsubishi Tanabe's initiation of Phase II/III development of INGREZZA in TD in Asia.

In 2016, we recognized $15 million in event-based revenue as a result of AbbVie initiating Phase III clinical studies of elagolix in patients with uterine fibroids.

Operating Expenses

Cost of Sales

Cost of sales was $4.9 million for 2018 and $1.3 million for 2017. Cost of sales for product sold in 2018 and 2017 excluded costs that were previously charged to R&D expense prior to FDA approval of INGREZZA for TD. This reduced cost drug product had a positive impact on our cost of sales and related product gross margins for 2018 and 2017. In the first quarter of 2019, we will begin to incur a higher cost of sales that includes the cost of INGREZZA active pharmaceutical ingredients produced following FDA approval. There was no cost of sales for 2016.

Research and Development

R&D expenditures include costs related to preclinical and clinical trials, scientific personnel, equipment, consultants, sponsored research, share-based compensation, and allocated facility and depreciation costs. We do not track fully burdened R&D costs separately for each of our drug candidates. We review our R&D expenses by focusing on the following categories: external development, personnel, facility and depreciation, and other. External development expenses consist of costs associated with our external preclinical and clinical trials, including pharmaceutical development and manufacturing. In-process R&D expenses and collaboration payments include upfront and milestone payments made in connection with strategic licensing arrangements we have entered into with third parties. Personnel expenses include salaries and wages, share-based compensation, payroll taxes, and benefits for those individuals involved in ongoing R&D efforts. Other R&D expenses primarily represent lab supply expenses and scientific consulting expenses.

The following table presents our total R&D expenses by category during the periods presented:

(in millions)	Year Ended December 31, 2018	2017	2016
External development expense:			
VMAT2	$ 37.5	$ 20.9	$ 32.4
CRF_1	9.8	3.9	2.5
Other	5.6	3.4	1.0
Total external development expense	52.9	28.2	35.9
In-process R&D expenses and collaboration payments	15.0	30.0	—
R&D personnel expense	62.0	42.2	34.1
R&D facility and depreciation expense	8.1	5.8	6.3
Other R&D expense	22.5	15.6	18.0
Total R&D expense	$ 160.5	$ 121.8	$ 94.3

R&D expense increased $38.7 million, from $121.8 million in 2017 to $160.5 million in 2018, primarily due to the ongoing progression of our product candidate pipeline and increased personnel expenses on higher headcount, including increased non-cash share-based compensation of $11.7 million, which included a non-recurring charge of $7.7 million related to the modification of certain options and RSUs. In-process R&D expenses and collaboration payments decreased from $30 million in 2017 to $15 million in 2018, primarily due to a $20 million decrease in payments to BIAL. Excluding the decrease in payments to BIAL, R&D expense for 2018 increased $58.7 million compared to 2017.

R&D expense increased $27.5 million, from $94.3 million in 2016 to $121.8 million in 2017, primarily due to a $30 million payment to BIAL to in-license opicapone.

Sales, General and Administrative

Sales, general and administrative (SG&A) expense increased $79.0 million, from $169.9 million in 2017 to $248.9 million in 2018, primarily due to our commercial launch for INGREZZA in April 2017 and the subsequent sales force expansion in the third quarter of 2018, which included higher personnel related costs of $32.0 million compared to 2017, including increased non-cash share-based compensation of $3.9 million.

SG&A expense increased to $101.8 million, from $68.1 million in 2016 to $169.9 million in 2017, primarily due to our commercial launch for INGREZZA in April 2017, an increase of $56.7 million in personnel related costs, including increased non-cash share-based compensation of $8.2 million, and an increase of $36.6 million in external costs resulting from market research, patient support, commercial launch activities, and other professional services.

Other (Expense) Income

Other expense, net, increased $3.9 million, from $11.2 million in 2017 to $15.1 million in 2018, due to higher interest expense in 2018 resulting from our issuance of $517.5 million of 2.25% convertible senior notes due May 15, 2024 (2024 Notes) in May 2017.

Other expense, net, increased $17.5 million, from an income position of $6.3 million in 2016 to an expense position of $11.2 million in 2017, due to the incurrence of interest expense resulting from our issuance of the 2024 Notes in May 2017.

Provision for Income Taxes

Our provision for income taxes for 2018 was $0.7 million for estimated current state income taxes. As of December 31, 2018, we have recorded a full valuation allowance against our net deferred tax assets as realization is uncertain. As a result, our tax expense varies from the statutory tax rate primarily due to the change in the valuation recorded for the year, net of other permanent book/tax differences, tax credits generated, and impacts of changes in tax laws. We did not record a provision for income taxes for 2017 or 2016.

Net Income (Loss)

Net income for 2018 was $21.1 million, or $0.22 diluted net income per share, compared to a net loss of $142.5 million, or $1.62 net loss per share, for 2017 and a net loss of $141.1 million, or $1.63 net loss per share, for 2016. The change from 2017 to 2018 was primarily the result of increased INGREZZA net product sales, offset by ongoing support for the commercial launch of INGREZZA for TD and progression of our clinical pipeline. The change from 2016 to 2017 was primarily the result of increased operating expenses due to the in-licensing of opicapone and costs associated with the commercial launch of INGREZZA for TD, offset by increased revenues primarily driven by sales of INGREZZA.

Liquidity and Capital Resources

At December 31, 2018, our cash, cash equivalents, and investments totaled $866.9 million compared to $763.3 million at December 31, 2017.

Net cash provided by operating activities in 2018 was $101.4 million, compared to net cash used in operating activities of $94.3 million in 2017 and $106.2 million in 2016. The significant change to positive cash flow generated from operations from 2017 to 2018 was primarily driven by increased INGREZZA net product sales and the achievement of the $40.0 million event-based milestone related to the FDA's approval of ORILISSA. The net loss from 2017 increased by $1.4 million over 2016 levels but included increased non-cash share-based compensation of $14.1 million and the amortization of the debt discount of approximately $10.9 million resulting from our issuance of the 2024 Notes in May 2017.

Net cash used in investing activities was $242.9 million in 2018 and $251.3 million in 2017, compared to net cash provided by investing activities of $113.0 million in 2016. The change in net cash used in investing activities resulted primarily from timing differences in investment purchases, sales and maturities of investments, fluctuation of our portfolio-mix between cash equivalents and short-term and long-term investment holdings, and an increase in additions to our property and equipment, which in 2018 consisted predominantly of tenant improvements to our corporate facilities.

Net cash provided by financing activities was $29.5 million in 2018, $516.6 million in 2017, and $2.4 million in 2016. The change in cash provided by financing activities was primarily due to net proceeds of approximately $502.8 million from our issuance of the 2024 Notes in May 2017. Proceeds from stock option exercises were approximately $29.5 million in 2018, $13.9 million in 2017, and $2.4 million in 2016.

Shelf Registration Statement. In February 2017, we filed an automatic shelf registration statement which immediately became effective by rule of the Securities and Exchange Commission (SEC). For so long as we continue to satisfy the requirements to be deemed a well-known seasoned issuer, this shelf registration statement allows us to issue an unlimited number of securities from time to time. We sold no securities under this shelf registration statement in 2018 or 2017.

Convertible Debt. In May 2017, we issued the 2024 Notes. Refer to Note 5 to the consolidated financial statements for more information on the 2024 Notes.

Off-Balance Sheet Arrangements

As of December 31, 2018, we did not have any off-balance sheet arrangements.

Critical Accounting Policies and Estimates

Our discussion and analysis of our financial condition and results of operations is based upon financial statements that we have prepared in accordance with accounting principles generally accepted in the United States of America (GAAP). The preparation of these financial statements requires management to make estimates and judgments that affect the reported amounts of assets, liabilities and expenses, and related disclosures. On an on-going basis, we evaluate these estimates, including those related to revenue recognition and share-based compensation. Estimates are based on historical experience, information received from third parties and on various other assumptions that are believed to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions. Historically, revisions to our estimates have not resulted in a material change to the financial statements. The items in our financial statements requiring significant estimates and judgments are as follows:

Product Revenue Recognition

Our net product sales consist of U.S. sales of INGREZZA and are recognized when the customer obtains control of our product in an amount that reflects the consideration we expect to receive from the customer in exchange for that product. If the consideration promised under the associated contract includes a variable amount, we estimate the consideration we expect to receive for transferring the good to the customer. There are two methods for determining the amount of variable consideration: (i) the expected value method, which is the sum of probability-weighted amounts in a range of possible consideration amounts, and; (ii) the mostly likely amount method, which identifies the single most likely amount in a range of possible consideration amounts.

Revenue from product sales is recorded at the net sales (transaction) price, which includes an estimate of variable consideration for which reserves are established and which results from contractual discounts, returns, chargebacks, rebates, co-pay assistance, and other allowances relating to sales of our products. The following represent our significant categories of sales discounts and allowances:

Trade Discounts and Allowances: We generally provide customers with discounts, that include prompt payment, discounts for sales data, and other off-invoice discounts that are explicitly stated in the associated contracts and are recorded as a reduction of revenue in the period the related product revenue is recognized.

Product Returns: We offer our customers limited product return rights for damages and shipment errors provided it is within a very limited period after the original shipping date as set forth in the applicable individual distribution agreement. We do not allow product returns for product that has been dispensed to a patient or for drug expiration. We receive real-time shipping and inventory reports from our customers and have the ability to control the amount of product that is sold to our customers. Product returns to date have not been significant and we have not considered it necessary to record a reserve for product returns.

Government Rebates: We are subject to discount obligations under state Medicaid programs and Medicare prescription drug coverage gap program. We estimate our Medicaid and Medicare prescription drug coverage gap rebates based upon a range of possible outcomes that are probability-weighted for the estimated payor mix. These reserves are recorded in the same period the related revenue is recognized, resulting in a reduction of product revenue and the establishment of a current liability that is included in accrued expenses on the consolidated balance sheet. Our liability for these rebates consists of invoices received for claims from prior quarters that have not been paid or for which an invoice has not yet been received, estimates of claims for the current quarter, and estimated future claims that will be made for product that has been recognized as revenue, but remains in the distribution channel inventories at the end of each reporting period.

Provider Chargebacks and Discounts: Chargebacks for fees and discounts to providers represent the estimated obligations resulting from contractual commitments to sell products to qualified healthcare providers at prices lower than the list prices charged to customers who directly purchase the product from us. Customers charge us for the difference between what they pay for the product and the ultimate selling price to the qualified healthcare providers. These reserves are established in the same period that the related revenue is recognized, resulting in a reduction of product revenue and accounts receivable. Chargeback amounts are generally determined at the time of resale to the qualified healthcare provider by customers, and we generally issue credits for such amounts following the customer's notification to us of the resale. Reserves for chargebacks consist of credits that we expect to issue for units that remain in the distribution channel inventories at each reporting period end that we expect will be sold to qualified healthcare providers.

Co-Payment Assistance: We offer co-payment assistance to commercially insured patients meeting certain eligibility requirements. The calculation of the accrual for co-pay assistance is based on an estimate of claims and the cost per claim that we expect to receive associated with product that has been recognized as revenue but remains in the distribution channel inventories at the end of each reporting period.

Share-Based Compensation

For purposes of calculating share-based compensation, we estimate the fair value of share-based compensation awards using a Black-Scholes option-pricing model. The determination of the fair value of share-based compensation awards utilizing the Black-Scholes model is affected by our stock price and a number of assumptions, including but not limited to expected stock price volatility over the term of the awards and the expected term of stock options. Our stock options have characteristics significantly different from those of traded options, and changes in the assumptions can materially affect the fair value estimates. For example, an increase in the underlying stock price results in a significant increase in the Black-Scholes option-pricing.

If factors change and we employ different assumptions, share-based compensation expense may differ significantly from what we have recorded in the past. If there is a difference between the assumptions used in determining share-based compensation expense and the actual factors which become known over time, we may change the input factors used in determining share-based compensation expense for future grants. These changes, if any, may materially impact our results of operations in the period such changes are made. For actual forfeitures, we recognize the adjustment to compensation expense in the period the forfeitures occur.

Additional Information

Refer to Note 1 to the consolidated financial statements for information on accounting pronouncements that have impacted or are expected to materially impact our consolidated financial condition, results of operations, or cash flows.

Factors That May Affect Future Financial Condition and Liquidity

We anticipate increases in expenditures as we execute on our commercialization plan for INGREZZA and continue our R&D activities. Our strategies to develop some of our programs may include collaborative agreements with major pharmaceutical companies and sales of our securities in both public and private offerings. Such collaborative agreements may include a partial recovery of our research costs through license fees, contract research funding, and milestone revenues and such collaborators may be financially and managerially responsible for clinical development and commercialization. In these cases, the estimated completion date would largely be under the control of the collaborator. We cannot forecast, with any degree of certainty, which other proprietary products or indications, if any, will be subject to collaborative arrangements of this nature, in whole or in part, and how such arrangements would affect our capital requirements.

Our in-license, research, and clinical development agreements are generally cancelable with written notice within 180 days or less. In addition to the minimum annual payments due under certain in-license and research agreements, including a $30 million upfront license fee paid to BIAL in February 2017, we may be required to pay up to approximately $105 million in milestone payments, plus sales royalties, in the event that all scientific research, development and commercialization milestones under these agreements are achieved.

The funding necessary to execute our business strategies is subject to numerous uncertainties, which may adversely affect our liquidity and capital resources. Marketing of approved pharmaceuticals and completion of clinical trials may take several years or more, but the length of time generally varies substantially according to the type, complexity, novelty and intended use of a product candidate. It is also important to note that if a clinical candidate is identified, the further development of that candidate can be halted or abandoned at any time due to a number of factors. These factors include, but are not limited to, funding constraints, safety or a change in market demand.

The nature and efforts required to develop our product candidates into commercially viable products include research to identify a clinical candidate, preclinical development, clinical testing, FDA approval and commercialization. In the pharmaceutical industry, total R&D spend for a drug candidate that successfully completes all stages of R&D and is commercialized may exceed $2 billion. Further, it can take in excess of ten years to complete all stages of R&D for a drug candidate.

We test our potential product candidates in numerous preclinical studies to identify disease indications for which our product candidates may show efficacy. We may conduct multiple clinical trials to cover a variety of indications for each product candidate. As we obtain results from trials, we may elect to discontinue clinical trials for certain product candidates or for certain indications in order to focus our resources on more promising product candidates or indications. The duration and the cost of clinical trials may vary significantly over the life of a project as a result of differences arising during the clinical trial protocol, including, among others, the following:

- we or the FDA or similar foreign regulatory authorities may suspend the trials;
- we may discover that a product candidate may cause harmful side effects;
- patient recruitment may be slower than expected; and
- patients may drop out of the trials.

For each of our programs, we periodically assess the scientific progress and merits of the programs to determine if continued R&D is economically viable. Certain of our programs have been terminated due to the lack of scientific progress and lack of prospects for ultimate commercialization. Because of the uncertainties associated with R&D of these programs, we may not be successful in achieving commercialization. As such, the ultimate timeline and costs to commercialize a product cannot be accurately estimated.

Other than INGREZZA, which has been approved by the FDA for the treatment of TD, and ORILISSA (partnered with AbbVie), which has been approved by the FDA for the management of moderate to severe endometriosis pain in women, our product candidates have not yet achieved FDA regulatory approval, which is required before we can market them as therapeutic products in the U.S. In order to proceed to subsequent clinical trial stages and to ultimately achieve regulatory approval, the FDA must conclude that our clinical data establish safety and efficacy. We must satisfy the requirements of similar regulatory authorities in foreign countries in order to market products in those countries. The results from preclinical testing and early clinical trials may not be predictive of results in later clinical trials. It is possible for a candidate to show promising results in clinical trials, but subsequently fail to establish sufficient safety and efficacy data necessary to obtain regulatory approvals.

As a result of the uncertainties discussed above, among others, the duration and completion costs of our R&D projects, clinical trials, and post-marketing studies are difficult to estimate and are subject to considerable variation. Our inability to complete our R&D projects in a timely manner or our failure to enter into collaborative agreements, when appropriate, could significantly increase our capital requirements and could adversely impact our liquidity. These uncertainties could force us to seek additional, external sources of financing from time to time in order to continue with our business strategy. Our inability to raise additional capital, or to do so on terms reasonably acceptable to us, would jeopardize the future success of our business.

We currently have limited experience in marketing and selling pharmaceutical products. If we fail to maintain successful marketing, sales, and reimbursement capabilities, or fail to enter into successful arrangements with third parties, our product revenues may suffer. We also may be required to make further substantial expenditures if unforeseen difficulties arise in other areas of our business. In particular, our future capital requirements will depend on many factors, including:

- the commercial success of INGREZZA and/or ORILISSA;
- debt service obligations on the 2024 Notes;
- continued scientific progress in our R&D and clinical development programs;
- the magnitude and complexity of our research and development programs;

- progress with preclinical testing and clinical trials;
- the time and costs involved in obtaining regulatory approvals;
- the costs involved in filing and pursuing patent applications, enforcing patent claims, or engaging in interference proceedings or other patent litigation;
- competing technological and market developments;
- the establishment of additional strategic alliances;
- developments related to any future litigation;
- the cost of commercialization activities and arrangements, including manufacturing of our product candidates; and
- the cost of product in-licensing and any possible acquisitions.

We believe that our existing capital resources, together with investment income and future payments due under our strategic alliances, will be sufficient to satisfy our current and projected funding requirements for at least the next 12 months. However, we cannot guarantee that our existing capital resources and anticipated revenues will be sufficient to conduct and complete all of our research and development programs or commercialization activities as planned.

We may require additional funding to effectively commercialize INGREZZA, to continue our research and product development programs, to conduct preclinical studies and clinical trials, for operating expenses, to pursue regulatory approvals for our product candidates, for the costs involved in filing and prosecuting patent applications and enforcing or defending patent claims, if any, the cost of product in-licensing and any possible acquisitions, and we may require additional funding to establish manufacturing and marketing capabilities in the future. We may seek to access the public or private equity markets whenever conditions are favorable. For example, we have an effective shelf registration statement on file with the SEC which allows us to issue an unlimited number of shares of our securities from time to time. In addition, we issued $517.5 million of convertible debt in May 2017 and we have previously financed capital purchases and may continue to pursue opportunities to obtain additional debt financing in the future. We may also seek additional funding through strategic alliances or other financing mechanisms. We cannot assure you that adequate funding will be available on terms acceptable to us, if at all. Any additional equity financings will be dilutive to our stockholders and any additional debt may involve operating covenants that may restrict our business. If adequate funds are not available through these means, we may be required to curtail significantly one or more of our research or development programs or obtain funds through arrangements with collaborators or others. This may require us to relinquish rights to certain of our technologies, products or product candidates. To the extent that we are unable to obtain third-party funding for such expenses, we expect that increased expenses will result in increased cash flow losses from operations. We cannot assure you that we will successfully develop our products under development or that our approved products will generate revenues sufficient to enable us to earn a profit.

Contractual Obligations

Our contractual obligations as of December 31, 2018, are as follows:

(in millions)	Total	2019	2020	2021	2022	2023 and Thereafter
Contractual obligations:						
2024 Notes and related interest [1]	$ 581.4	$ 11.6	$ 11.6	$ 11.6	$ 11.6	$ 535.0
Operating leases [2]	101.9	7.4	8.4	8.6	8.9	68.6
Total contractual obligations	$ 683.3	$ 19.0	$ 20.0	$ 20.2	$ 20.5	$ 603.6

(1) Amounts for the 2024 Notes and related interest in the table above assume that we will hold the 2024 Notes until maturity.

(2) Amounts for operating leases presented in the table above reflect future minimum rental commitments under non-cancelable operating leases as of December 31 for each of the periods presented.

2024 Notes and Related Interest. In May 2017, we completed a private placement of $517.5 million in aggregate principal amount of 2.25% convertible senior notes scheduled to mature on May 15, 2024, unless earlier converted, redeemed, or repurchased. We may not redeem the 2024 Notes prior to May 15, 2021. On or after this date, at our election, we may redeem all, or any portion, of the 2024 Notes under certain circumstances. The 2024 Notes do not contain any financial or operating covenants or any restrictions on the payment of dividends, the issuance of other indebtedness, or the issuance or repurchase of securities by us. There are customary events of default with respect to the 2024 Notes, including that upon certain events of default, 100% of the principal and accrued and unpaid interest on the 2024 Notes will automatically become due and payable. Refer to Note 5 to the consolidated financial statements for more information on the 2024 Notes.

Operating Leases. We lease our corporate headquarters, which consist of laboratory and office space located San Diego, California, under various operating lease agreements. In addition to minimum rental commitments, these operating leases may require us to pay additional amounts for taxes, insurance, maintenance, and other operating expenses. The non-cancelable lease terms for these operating leases expire at various dates between 2020 and 2029 and do not include renewal options. Refer to Note 10 to the consolidated financial statements for more information on the major facilities that we occupy under lease arrangements.

ITEM 7A. *QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK*

Interest Rate Risk

We are exposed to interest rate risk on our short-term investments. The primary objective of our investment activities is to preserve principal while at the same time maximizing yields without significantly increasing risk. To achieve this objective, we invest in highly liquid and high-quality government and other debt securities. To minimize our exposure due to adverse shifts in interest rates, we invest in short-term securities and ensure that the maximum average maturity of our investments does not exceed 12 months. If a 10% change in interest rates were to have occurred on December 31, 2018, this change would not have had a material effect on the fair value of our investment portfolio as of that date. Due to the short holding period of our investments, we have concluded that we do not have a material financial market risk exposure.

ITEM 8. ***FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA***

NEUROCRINE BIOSCIENCES, INC.
INDEX TO THE CONSOLIDATED FINANCIAL STATEMENTS

Report of Independent Registered Public Accounting Firm

To the Shareholders and the Board of Directors of
Neurocrine Biosciences, Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Neurocrine Biosciences, Inc. (the "Company") as of December 31, 2018 and 2017, the related consolidated statements of operations and comprehensive income (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 "consolidated financial statements"). In our opinion, the consolidated 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.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2018, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework), and our report dated February 7, 2019 expressed an unqualified opinion thereon.

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 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. 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 1992.

San Diego, California
February 7, 2019

NEUROCRINE BIOSCIENCES, INC.
CONSOLIDATED BALANCE SHEETS

(in thousands, except share and per share data)	December 31, 2018	December 31, 2017
ASSETS		
Current assets:		
Cash and cash equivalents	$ 141,714	$ 254,712
Short-term investments, available-for-sale	509,199	261,217
Accounts receivable	56,240	31,127
Inventory	10,864	1,024
Other current assets	19,760	6,839
Total current assets	737,777	554,919
Property and equipment, net	33,869	10,811
Long-term investments, available-for-sale	216,028	247,361
Restricted cash	5,477	4,500
Total assets	$ 993,151	$ 817,591
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable and accrued liabilities	$ 86,377	$ 53,520
Other current liabilities	1,856	906
Total current liabilities	88,233	54,426
Deferred gain on sale of real estate	7,312	8,043
Deferred revenue	10,231	10,231
Deferred rent	18,114	3,135
Convertible senior notes	388,496	369,618
Total liabilities	512,386	445,453
Commitments and contingencies		
Stockholders' equity:		
Preferred stock, $0.001 par value; 5,000,000 shares authorized; no shares issued and outstanding	—	—
Common stock, $0.001 par value; 220,000,000 shares authorized; issued and outstanding shares were 90,797,087 and 88,793,903 at December 31, 2018 and 2017, respectively	91	89
Additional paid-in capital	1,660,361	1,572,765
Accumulated other comprehensive loss	(1,932)	(1,850)
Accumulated deficit	(1,177,755)	(1,198,866)
Total stockholders' equity	480,765	372,138
Total liabilities and stockholders' equity	$ 993,151	$ 817,591

See accompanying notes to consolidated financial statements.

NEUROCRINE BIOSCIENCES, INC.
CONSOLIDATED STATEMENTS OF OPERATIONS
AND COMPREHENSIVE INCOME (LOSS)

(in thousands, except per share data)	Year Ended December 31, 2018	2017	2016
Revenues:			
Product sales, net	$ 409,608	$ 116,626	$ —
Collaboration revenue	41,632	45,000	15,000
Total revenues	451,240	161,626	15,000
Operating expenses:			
Cost of sales	4,889	1,254	—
Research and development	160,524	121,827	94,291
Sales, general and administrative	248,932	169,906	68,081
Total operating expenses	414,345	292,987	162,372
Income (loss) from operations	36,895	(131,361)	(147,372)
Other (expense) income:			
Interest expense	(30,530)	(19,523)	—
Investment income and other, net	15,476	8,342	6,282
Total other (expense) income	(15,054)	(11,181)	6,282
Income (loss) before provision for income taxes	21,841	(142,542)	(141,090)
Provision for income taxes	730	—	—
Net income (loss)	$ 21,111	$ (142,542)	$ (141,090)
Net income (loss) per share:			
Basic	$ 0.23	$ (1.62)	$ (1.63)
Diluted	$ 0.22	$ (1.62)	$ (1.63)
Shares used in the calculation of net income (loss) per share:			
Weighted average common shares outstanding, basic	90,235	88,089	86,713
Weighted average common shares outstanding, diluted	95,386	88,089	86,713
Other comprehensive income (loss):			
Net income (loss)	$ 21,111	$ (142,542)	$ (141,090)
Unrealized (loss) gain on available-for-sale securities	(82)	(1,532)	659
Comprehensive income (loss)	$ 21,029	$ (144,074)	$ (140,431)

See accompanying notes to consolidated financial statements.

NEUROCRINE BIOSCIENCES, INC.
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY

(in thousands)	Common Stock Shares	Common Stock Amount	Additional Paid in Capital	Accumulated Other Comprehensive (Loss) Gain	Accumulated Deficit	Total Stockholders' Equity
BALANCE AT DECEMBER 31, 2015	86,263	$ 86	$1,340,579	$ (977)	$ (915,234)	$ 424,454
Net loss	—	—	—	—	(141,090)	(141,090)
Unrealized gains on available-for-sale investments	—	—	—	659	—	659
Share-based compensation expense	—	—	28,464	—	—	28,464
Issuance of common stock for vested restricted stock units	284	—	—	—	—	—
Issuance of common stock for stock option exercises	336	1	2,389	—	—	2,390
BALANCE AT DECEMBER 31, 2016	86,883	$ 87	$1,371,432	$ (318)	$(1,056,324)	$ 314,877
Net loss	—	—	—	—	(142,542)	(142,542)
Unrealized losses on available-for-sale investments	—	—	—	(1,532)	—	(1,532)
Share-based compensation expense	—	—	42,522	—	—	42,522
Issuance of common stock for vested restricted stock units	562	1	—	—	—	1
Issuance of common stock for stock option exercises	1,349	1	13,863	—	—	13,864
Equity component of convertible debt, net of issuance costs	—	—	144,948	—	—	144,948
BALANCE AT DECEMBER 31, 2017	88,794	$ 89	$1,572,765	$ (1,850)	$(1,198,866)	$ 372,138
Net income	—	—	—	—	21,111	21,111
Unrealized losses on available-for-sale investments	—	—	—	(82)	—	(82)
Share-based compensation expense	—	—	58,068	—	—	58,068
Issuance of common stock for vested restricted stock units	429	—	—	—	—	—
Issuance of common stock for stock option exercises	1,574	2	29,528	—	—	29,530
BALANCE AT DECEMBER 31, 2018	90,797	$ 91	$1,660,361	$ (1,932)	$(1,177,755)	$ 480,765

See accompanying notes to consolidated financial statements.

NEUROCRINE BIOSCIENCES, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS

(in thousands)	Year Ended December 31, 2018	2017	2016
CASH FLOWS FROM OPERATING ACTIVITIES			
Net income (loss)	$ 21,111	$ (142,542)	$ (141,090)
Reconciliation of net income (loss) to net cash provided by (used in) operating activities:			
Depreciation and amortization	4,024	2,400	1,453
Amortization of debt discount	17,552	10,937	—
Amortization of debt issuance costs	1,326	848	—
Amortization of premiums on investments	1,449	1,756	3,520
Share-based compensation expense	58,068	42,522	28,464
Deferred rent	351	1,203	(294)
Gain on sales of assets, net	(760)	(2,104)	(3,431)
Cease-use expense	—	(544)	(584)
Change in operating assets and liabilities:			
Accounts receivable	(25,113)	(31,127)	—
Inventory	(3,524)	(1,024)	—
Reimbursements for tenant improvements	8,701	—	—
Accounts payable and accrued liabilities	24,223	27,338	4,398
Other current assets and liabilities, net	(6,044)	(3,994)	1,383
Net cash provided by (used in) operating activities	101,364	(94,331)	(106,181)
CASH FLOWS FROM INVESTING ACTIVITIES			
Purchases of investments	(545,962)	(583,408)	(298,776)
Sales and maturities of investments	327,825	339,088	415,826
Purchases of property and equipment	(24,812)	(6,940)	(4,108)
Proceeds from sales of property and equipment	34	7	13
Net cash (used in) provided by investing activities	(242,915)	(251,253)	112,955
CASH FLOWS FROM FINANCING ACTIVITIES			
Issuance of common stock	29,530	13,865	2,390
Proceeds from issuance of senior convertible notes, net	—	502,781	—
Net cash provided by financing activities	29,530	516,646	2,390
Net change in cash, cash equivalents, and restricted cash	(112,021)	171,062	9,164
Cash, cash equivalents, and restricted cash at beginning of the period	259,212	88,150	78,986
Cash, cash equivalents, and restricted cash at end of the period	$ 147,191	$ 259,212	$ 88,150
SUPPLEMENTAL DISCLOSURES			
Cash paid for interest	$ 11,644	$ 6,242	$ —
Non-cash capital expenditures	$ 2,318	$ —	$ —

See accompanying notes to consolidated financial statements.

NOTE 1. ORGANIZATION AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Business Activities. Neurocrine Biosciences, Inc. (the Company or Neurocrine) was incorporated in California in 1992 and reincorporated in Delaware in 1996. Neurocrine Continental, Inc., is a Delaware corporation and a wholly owned subsidiary of the Company. The Company also has two wholly-owned Irish subsidiaries, Neurocrine Therapeutics, Ltd. and Neurocrine Europe, Ltd. both of which were formed in December 2014 and are inactive. The Company discovers, develops, and commercializes innovative and life-changing pharmaceuticals, in diseases with high unmet medical needs, through its novel research and development (R&D) platform, focused on neurological and endocrine related diseases and disorders.

The Company discovered, developed, and markets INGREZZA® (valbenazine), the first United States Food and Drug Administration (FDA)-approved product indicated for the treatment of adults with tardive dyskinesia (TD), an involuntary movement disorder. Discovered and developed through Phase II clinical trials by the Company, ORILISSA® (elagolix), the first FDA-approved oral medication for the management of endometriosis associated with moderate to severe pain in over a decade, is marketed by AbbVie Inc. (AbbVie) as part of a collaboration to develop and commercialize elagolix for women's health. The Company's clinical development programs include opicapone as an adjunctive therapy to levodopa/DOPA decarboxylase inhibitors in Parkinson's disease patients, elagolix for uterine fibroids partnered with AbbVie, NBI-74788 for the treatment of congenital adrenal hyperplasia (CAH), and a vesicular monoamine transporter 2 (VMAT2) inhibitor and a first-in-class central nervous system (CNS) compound each with potential use in the treatment of neurologic and psychiatric disorders.

Principles of Consolidation. The consolidated financial statements include the accounts of Neurocrine as well as its wholly owned subsidiaries. All intercompany transactions and balances have been eliminated in consolidation.

Use of Estimates. The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America (GAAP) requires management to make estimates and assumptions that affect the amounts reported in the financial statements and the accompanying notes. Actual results could differ from those estimates.

Industry Segment and Geographic Information. The Company operates in a single industry segment – the discovery, development, and marketing of pharmaceuticals for the treatment of neurological and endocrine based diseases and disorders. The Company had no foreign based operations during any of the years presented.

Cash Equivalents. The Company considers all highly liquid investments that are readily convertible into cash and have an original maturity of three months or less at the time of purchase to be cash equivalents.

Short-Term and Long-Term Investments Available-for-Sale. Certain investments are classified as available-for-sale and carried at fair value, with any unrealized gains and losses reported in other comprehensive loss. The amortized cost of investments in debt securities is adjusted for the amortization of premiums and accretion of discounts to maturity, which are included in investment income and other, net. The cost of investments in debt securities sold is based on the specific identification method. Realized gains and losses, interest and dividends, and declines in value judged to be other-than-temporary, if any, on available-for-sale securities are included in investment income and other, net.

Accounts Receivable. Accounts receivable are recorded net of customer allowances for prompt payment discounts, chargebacks, and any allowance for doubtful accounts. The Company estimates the allowance for doubtful accounts based on existing contractual payment terms, actual payment patterns of its customers, and individual customer circumstances. To date, an allowance for doubtful accounts has not been required.

Fair Value of Financial Instruments. Certain financial instruments, including cash, cash equivalents, accounts receivable, accounts payable, and accrued liabilities are carried at cost, which the Company believes approximates fair value because of the short-term nature of these instruments. The $517.5 million of 2.25% convertible senior notes due May 15, 2024 (2024 Notes) were recorded at the estimated value of a similar non-convertible instrument on the date of issuance and accretes to the face value of the 2024 Notes over their 7-year term. The fair value of the 2024 Notes is estimated utilizing market quotations from an over-the-counter trading market and approximated 119% and 128% of the face value of the 2024 Notes at December 31, 2018 and 2017, respectively.

Inventory. Inventory is stated at the lower of cost or estimated net realizable value. The Company currently uses actual costing to determine the cost basis for its inventory. Inventory is valued on a first-in, first-out basis and consists primarily of third-party manufacturing costs. The Company capitalizes inventory costs associated with its products upon regulatory approval when, based on management's judgment, future commercialization is considered probable and the future economic benefit is expected to be realized; otherwise, such costs are expensed.

Prior to FDA approval of INGREZZA, all costs related to its manufacture were included in R&D expense in the period incurred. Historically, the Company's physical inventory included active pharmaceutical ingredients produced prior to FDA approval of INGREZZA and accordingly had no cost basis as the cost associated with producing this material was expensed in the period incurred. Costs associated with the manufacture of bulk drug product, finished bottling, and other labeling activities that occurred post FDA approval of INGREZZA are included in the inventory value.

The Company reduces its inventory to net realizable value for potential excess, dated, or obsolete inventory based on an analysis of forecasted demand compared to quantities on hand and any firm purchase orders, as well as product shelf life. To date, such reserves have not been significant.

Property and Equipment. Property and equipment are stated at cost and depreciated over the estimated useful lives of the assets using the straight-line method. Equipment is depreciated over an average estimated useful life of 3 to 7 years. Leasehold improvements are depreciated over the shorter of their estimated useful lives or the remaining lease term. Depreciation expense was $4.0 million for 2018, $2.4 million for 2017, and $1.5 million for 2016.

Impairment of Long-Lived Assets. The Company reviews long-lived assets for impairment whenever events or changes in circumstances indicate that the carrying value of an asset may not be recoverable. If indicators of impairment exist, the Company assesses the recoverability of the affected long-lived assets by determining whether the carrying value of such assets can be recovered through undiscounted future operating cash flows. If the carrying amount is not recoverable, the Company measures the amount of any impairment by comparing the carrying value of the asset to the present value of the expected future cash flows associated with the use of the asset.

Revenue Recognition. The Company recognizes revenue when the customer obtains control of the product in an amount that reflects the consideration the Company expects to receive from the customer in exchange for that product. To determine revenue recognition, the Company performs the following five steps: (i) identify the contract(s) with a customer; (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 Company satisfies the performance obligation. The Company only applies the five-step model to contracts when it is probable that the Company will collect the consideration it is entitled to in exchange for the good transferred to the customer. Once a contract is determined to be within the scope of Accounting Standards Codification 606, Revenue from Contracts with Customers (Topic 606), at contract inception, the Company assesses the goods promised within the contract to determine those that are performance obligations and assesses whether each promised good 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.

Product Sales, Net. The Company's product sales consist of sales of INGREZZA in the U.S. INGREZZA was approved by the FDA on April 11, 2017 and the Company commenced shipments of INGREZZA to specialty pharmacies (SPs) and a specialty distributor (SD) (collectively, customers) in April 2017. The SPs dispense product to a patient based on the fulfillment of a prescription and the SD sells product to closed-door pharmacies and government facilities. The Company's agreements with the customers provide for transfer of title to the product at the time the product is delivered to the customers. In addition, except for limited circumstances, the customers have no right of product return. Product sales are recognized when the customers obtain control of the Company's product, typically upon delivery to the customers.

Revenue from product sales are recorded at the net sales price (transaction price), which includes an estimate of variable consideration for which reserves are established and which results from contractual discounts, returns, chargebacks, rebates, co-pay assistance, and other allowances relating to sales of the Company's products. These reserves are based on the amounts earned or to be claimed on the related sales and are classified as reductions of accounts receivable (if the amounts are payable to the customers) or a current liability (if the amounts are payable to parties other than the customers). Where appropriate, these estimates take into consideration a range of possible outcomes that are probability-weighted for relevant factors such as the Company's historical experience, current contractual and statutory requirements, specific known market events and trends, industry data, and forecasted customer buying and payment patterns. Overall, these reserves reflect the Company's best estimates of the amount of consideration to which it is entitled based on the terms of the contract. The amount of variable consideration that is included in the transaction price may be constrained and is included in the net sales price only to the extent that it is probable that a significant reversal in the amount of the cumulative revenue recognized will not occur in a future period. Actual amounts of consideration ultimately received may differ from the Company's estimates. If actual results in the future vary from the Company's estimates, the Company will adjust these estimates, which would affect net product revenue and earnings in the period such variances become known.

Shipping and handling costs related to the Company's product sales are included in sales, general and administrative expenses.

Collaborative and Other Revenue. The Company enters into collaboration and licensing agreements under which it licenses certain rights to its product candidates to third parties. The terms of these arrangements typically include payment to the Company of one or more of the following: non-refundable, up-front license fees; development, regulatory, and commercial milestone payments; payments for manufacturing supply services; and royalties on net sales of licensed products.

As part of the accounting for these arrangements, the Company develops assumptions that require judgment to determine the stand-alone selling price for each performance obligation identified in the contract. The Company uses key assumptions to determine the stand-alone selling price, which may include forecasted revenues, development timelines, reimbursement rates for personnel costs, discount rates, and probabilities of technical and regulatory success.

Royalty Revenue: For arrangements that include sales-based royalties, including milestone payments based on the level of sales, and the license is deemed to be the predominant item to which the 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). Sales-based royalties for ORILISSA are calculated as a percentage of AbbVie net sales as defined in the Company's agreement with AbbVie. Each quarterly period, sales-based royalties are recorded based on estimated quarterly net sales of ORILISSA. Differences between actual results and estimated amounts are adjusted for in the period in which they become known, which typically follows the quarterly period in which the estimate was made.

Licenses of Intellectual Property: If the license to the Company's intellectual property embedded within a collaboration and/or licensing arrangement is determined to be distinct from the other performance obligations identified in the arrangement, the Company recognizes revenues 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 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.

The Company receives payments from its licensees based on billing schedules established in each agreement. Up-front payments and fees are recorded as deferred revenue upon receipt, or when due, and may require deferral of revenue recognition to a future period until the Company performs its obligations under these arrangements. Amounts are recorded as accounts receivable when the Company's right to consideration is unconditional.

Milestone Payments: At the inception of each arrangement that includes development, commercialization, and regulatory 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. Performance milestone payments represent a form of variable consideration. If it is probable that a significant revenue reversal would not occur, the associated milestone value is included in the transaction price. Milestone payments that are not within the Company's control or that of 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 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 milestone and license fees revenues and earnings in the period of adjustment.

Manufacturing Supply Services: Arrangements that include a promise for future supply of drug substance or drug product for either clinical development or commercial supply at the licensee's discretion are generally considered as options. The Company assesses if these options provide a material right to the licensee and if so, they are accounted for as separate performance obligations.

Concentration of Credit Risk. The Company does not currently have any of its own manufacturing facilities, and therefore it depends on an outsourced manufacturing strategy for the production of INGREZZA for commercial use and for the production of its product candidates for clinical trials. The Company has contracts in place with one third-party manufacturer that is approved for the commercial production of INGREZZA's capsules at 2 separate sites and one third-party manufacturer that is approved for the production of INGREZZA's active pharmaceutical ingredient. Although there are potential sources of supply other than the Company's existing suppliers, any new supplier would be required to qualify under applicable regulatory requirements.

The Company has entered into distribution agreements with a limited number of SPs and SDs, and all of the Company's product sales are to these customers. The Company's 3 largest customers represented 93% of the Company's product revenue for the year ended December 31, 2018 and 2017 and substantially all of the Company's accounts receivable balance at December 31, 2018 and 2017.

Financial instruments that potentially subject the Company to concentrations of credit risk consist primarily of cash, cash equivalents, investments, and accounts receivables. The Company established guidelines to limit its exposure to credit risk by placing investments with high credit quality financial institutions, diversifying its investment portfolio and placing investments with maturities that maintain safety and liquidity.

Cost of Sales. Cost of sales includes third-party manufacturing, transportation, freight, and indirect overhead costs associated with the manufacture and distribution of INGREZZA, sales-based license costs on AbbVie net sales of ORILISSA, as defined in the Company's agreement with AbbVie, and period costs resulting from certain inventory manufacturing services and variances and adjustment charges. A portion of the costs associated with the manufacture of INGREZZA sold to date was expensed as R&D prior to the FDA's approval of INGREZZA and is therefore excluded from cost of sales during this period.

Research and Development Expenses. R&D expenses consist primarily of salaries, payroll taxes, employee benefits, and share-based compensation charges for those individuals involved in ongoing research and development efforts; as well as scientific consulting fees, preclinical and clinical trial costs, R&D facilities costs, laboratory supply costs, and depreciation of scientific equipment. All such costs are charged to R&D expense as incurred. These expenses result from the Company's independent R&D efforts, as well as efforts associated with collaborations, in-licenses, and third-party funded research arrangements.

Advertising Expense. In connection with the FDA approval and commercial launch of INGREZZA in April 2017, the Company began to incur advertising costs, which are expensed when services are performed, or goods are delivered. The Company incurred advertising costs related to its marketed product, INGREZZA, of $20.5 million in 2018 and $10.1 million in 2017.

Share-Based Compensation. The Company grants stock options to purchase its common stock to eligible employees and directors and also grants certain employees restricted stock units (RSUs) and performance-based restricted stock units (PRSUs). Additionally, the Company allows employees to participate in an employee stock purchase plan (ESPP).

The Company estimates the fair value of stock options and shares to be issued under the ESPP using the Black-Scholes option-pricing model on the date of grant. Restricted stock units are valued based on the closing price of the Company's common stock on the date of grant. The fair value of equity instruments expected to vest are recognized and amortized on a straight-line basis over the requisite service period of the award, which is generally 3 to 4 years; however, certain provisions in the Company's equity compensation plans provide for shorter vesting periods under certain circumstances. The fair value of shares to be issued under the ESPP are recognized and amortized on a straight-line basis over the purchase period, which is generally 6 months. Additionally, the Company granted certain PRSUs that vest upon the achievement of certain pre-defined company-specific performance-based criteria. Expense related to these PRSUs is generally recognized ratably over the expected performance period once the pre-defined performance-based criteria for vesting becomes probable.

Net Income (Loss) Per Share. Basic net income (loss) per share is computed using the weighted average number of common shares outstanding during the period. Diluted net income per share is computed using the weighted average number of common and potentially dilutive shares outstanding during the period, including the potentially dilutive shares resulting from the conversion of the 2024 Notes, and excluding the effect of stock options and restricted stock outstanding for periods when their effect is anti-dilutive, using the treasury stock method.

Convertible debt instruments that may be settled entirely or partly in cash (such as the 2024 Notes) may, in certain circumstances where the borrower has the ability and intent to settle in cash, be accounted for under the treasury stock method. The Company issued the 2024 Notes with a combination settlement feature, which the Company has the ability and intent to use upon conversion of the notes, to settle the principal amount of debt for cash and the excess of the principal portion in shares of its common stock. As a result, of the approximately 6.8 million shares underlying the 2024 Notes, only the shares required to settle the excess of the principal portion would be considered dilutive under the treasury stock method. Further, approximately 0.3 million PRSUs have been excluded from the calculation of diluted net income per share as the performance condition has not been achieved. In loss periods, basic net loss per share and diluted net loss per share are identical because the otherwise dilutive potential common shares become anti-dilutive and are therefore excluded.

Recently Adopted Accounting Pronouncements.

In May 2014, the Financial Accounting Standards Board (FASB) issued Account Standards Update (ASU) No. 2014-09, "Revenue from Contracts with Customers (Topic 606)", which supersedes all existing revenue recognition requirements, including most industry-specific guidance. This new standard amends the guidance for the recognition of revenue from contracts with customers to transfer goods and services. The FASB subsequently issued additional, clarifying standards to address issues arising from implementation of the new revenue recognition standard. The Company adopted this standard on January 1, 2018, using the modified retrospective method, and applied the standard only to contracts that were not completed prior to January 1, 2018. The adoption of the new revenue standard did not change the Company's revenue recognition. As the Company did not identify any accounting changes that impacted the amount of reported revenues with respect to product revenues, or revenue from collaboration and license agreements, no adjustment to retained earnings was required upon adoption.

In November 2016, the FASB issued ASU 2016-18, "Statement of Cash Flows (Topic 230): Restricted Cash", which clarifies the presentation of restricted cash and restricted cash equivalents in the statements of cash flows. Under this ASU, restricted cash and restricted cash equivalents are included with cash and cash equivalents when reconciling the beginning and end-of-period total amounts presented on the statements of cash flows. This ASU is intended to reduce diversity in practice in the classification and presentation of changes in restricted cash on the statement of cash flows. This ASU requires that the statement of cash flows explain the change in total cash and equivalents and amounts generally described as restricted cash or restricted cash equivalents when reconciling the beginning and end-of-period total amounts. This ASU also requires a reconciliation between the total of cash and equivalents and restricted cash presented on the statement of cash flows and the cash and equivalents balance presented on the balance sheet. This amended guidance was retrospectively adopted on January 1, 2018 and requires that cash, cash equivalents, and restricted cash reported on the consolidated statements of cash flows now includes restricted cash of $5.5 million as of December 31, 2018 and $4.5 million as of December 31, 2017, as well as previously reported cash and cash equivalents.

Recently Issued Accounting Pronouncements

In February 2016, the FASB issued ASU No. 2016-02, "Leases (Topic 842)", which requires lessees to recognize leases on the balance sheet and disclose key information about leasing arrangements. Topic 842 establishes a right-of-use (ROU) model that requires a lessee to recognize a ROU asset and lease liability on the balance sheet for all leases with a term longer than 12 months. Topic 842 also requires disclosures to meet the objective of enabling users of financial statements to assess the amount, timing, and uncertainty of cash flows arising from leases.

Topic 842 is effective for the Company beginning January 1, 2019, using a modified retrospective approach, with early adoption permitted. An entity may choose to use either the effective date or the beginning of the earliest comparative period presented in the financial statements as the date of initial application. The Company expects to adopt Topic 842 on January 1, 2019, using a modified retrospective approach, and to choose the effective date as the date of initial application. Consequently, financial information will not be updated, and the disclosures required under Topic 842 will not be provided for dates and periods prior to January 1, 2019.

Topic 842 provides a number of optional practical expedients and accounting policy elections. The Company expects to elect the package of practical expedients requiring no reassessment of whether any expired or existing contracts are or contain leases, the lease classification of any expired or existing leases, or initial direct costs for any existing leases. Further, the Company expects to elect accounting policies not to apply the recognition requirements under Topic 842 to any of the Company's short-term leases, instead recognizing the lease payments in profit or loss on a straight-line basis over the lease term, and to account for each separate lease and associated nonlease components as a single lease component for all of its leases.

The Company expects Topic 842 will have a material effect on its consolidated balance sheets. However, the Company does not expect Topic 842 will have a material effect on its consolidated statements of operations and comprehensive income (loss) or consolidated statements of cash flows. While the Company continues to assess all of the effects of adoption, the most significant effects relate to (1) the recognition of right-of-use (ROU) assets of approximately $49 million and lease liabilities of approximately $69 million, primarily resulting from leases of office and laboratory space; (2) the recognition of an existing deferred gain on a sale of real estate of approximately $8 million as a cumulative-effect adjustment to equity; (3) the derecognition of deferred rent of approximately $20 million for certain lease incentives received; and (4) significant new disclosure requirements.

In June 2018, the FASB issued ASU 2018-07, "Compensation-Stock Compensation (Topic 718): Improvements to Nonemployee Share-Based Payment Accounting", which expands the scope of Topic 718 to include share-based payment transactions for acquiring goods and services from nonemployees and applies to all share-based payment transactions in which a grantor acquires goods or services to be used or consumed in a grantor's own operations by issuing share-based payment awards. This ASU does not apply to share-based payments used to effectively provide financing to the issuer or awards granted in conjunction with selling goods or services to customers as part of a contract accounted for under Topic 606. This update is effective for public business entities for fiscal years beginning after December 15, 2018, including interim periods within that fiscal year. The Company does not expect this update will have a material impact on its consolidated financial statements and related disclosures.

NOTE 2. SIGNIFICANT COLLABORATIVE RESEARCH AND DEVELOPMENT AGREEMENTS

Mitsubishi Tanabe Pharma Corporation. During 2015, the Company entered into a collaboration and license agreement with Mitsubishi Tanabe Pharma Corporation (Mitsubishi Tanabe) for the development and commercialization of INGREZZA for movement disorders in Japan and other select Asian markets. Mitsubishi Tanabe made an up-front license fee of $30 million and has agreed to make payments up to $85 million in development and commercialization event-based payments, payments for the manufacture of pharmaceutical products, and royalties on product sales in select territories in Asia.

Under the terms of the agreement, Mitsubishi Tanabe is responsible for all third-party development, marketing and commercialization costs in Japan and other select Asian markets and the Company would be entitled to a percentage of sales of INGREZZA in Japan and other select Asian markets for the longer of ten years or the life of the related patent rights. Further, the collaboration effort between the parties to advance INGREZZA towards commercialization in Japan and other select Asian markets is governed by joint steering and development committees with representatives from both parties. There are no performance, cancellation, termination, or refund provisions in the agreement that would have a material financial consequence to the Company. The Company does not directly control when event-based payments will be achieved or when royalty payments will begin. Mitsubishi Tanabe may terminate the agreement at its discretion upon 180 days written notice to the Company. In such event, all INGREZZA product rights for Japan and other select Asian markets would revert to the Company.

The Company assessed this arrangement in accordance with Topic 606 and identified the following performance obligations: (i) INGREZZA technology license and existing know-how; and (ii) development activities to initiate a clinical trial of INGREZZA for Huntington's chorea, at an estimated cost of approximately $12 million, should Mitsubishi Tanabe request. The Company has the option to participate on the joint steering committee, but since participation is at its option it was deemed to not be a performance obligation. The option for Mitsubishi Tanabe to engage the Company to manufacture and supply pharmaceutical products, not at a discount, was not considered a material right and therefore not a performance obligation. Based on these assessments, the Company identified the license and the development activities as the only performance obligations at the inception of the agreement, which were both deemed to be distinct.

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. For the license, the stand-alone selling price was calculated using an income approach model and included the following key assumptions: the development timeline, revenue forecast, discount rate, and probabilities of technical and regulatory success. The relative selling price of the Company's development activities to initiate a clinical trial of INGREZZA for Huntington's chorea was based on an assessment of costs to perform the study, based upon a peer company analysis for similar studies. The Company believes a change in the assumptions used to determine its stand-alone selling price for the license most likely would not have a significant effect on the allocation of consideration received (or receivable) to the performance obligations.

At execution, the transaction price included only the $30 million up-front consideration received. None of the development or regulatory milestones have been included in the transaction price, as all milestone amounts were fully constrained. As part of its evaluation of the constraint, the Company considered numerous factors, including that achievement of the milestones is outside of its control and contingent upon success in future clinical trials and the licensee's efforts. 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 Mitsubishi Tanabe 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.

To date, the Company has recognized revenue under this agreement of $19.8 million associated with the delivery of a technology license and existing know-how, and $15 million in development event-based payments resulting from Mitsubishi Tanabe's initiation of Phase II/III development of INGREZZA in tardive dyskinesia (TD) in Asia. In accordance with the Company's continuing performance obligations, $10.2 million of the $30 million up-front payment is being deferred and recognized in future periods. Under the terms of the agreement, there is no general obligation to return the up-front payment for any non-contingent deliverable. No revenue was recognized under the Mitsubishi Tanabe agreement for 2018 or 2016. In 2017, the Company recognized $15 million in development event-based payments resulting from Mitsubishi Tanabe's initiation of Phase II/III development of INGREZZA in TD in Asia.

AbbVie. In June 2010, the Company announced an exclusive worldwide collaboration with AbbVie, to develop and commercialize elagolix and all next-generation gonadotropin-releasing factor (GnRH) antagonists (collectively, GnRH Compounds) for women's and men's health. AbbVie made an upfront payment of $75 million and has agreed to make additional development and regulatory event-based payments of up to $480 million, of which $115 million has been earned as of December 31, 2018, and up to an additional $50 million in commercial event-based payments.

Under the terms of the agreement, AbbVie is responsible for all third-party development, marketing and commercialization costs. The Company will be entitled to a percentage of worldwide sales of GnRH Compounds for the longer of ten years or the life of the related patent rights. AbbVie may terminate the collaboration at its discretion upon 180 days written notice to the Company. In such event, the Company would be entitled to specified payments for ongoing clinical development and related activities and all GnRH Compound product rights would revert to the Company.

The Company evaluated the terms of this agreement under Topic 606 and determined that there is one performance obligation, the exclusive worldwide license with rights to develop, manufacture, and commercialize elagolix. At execution, the transaction price included only the $75 million up-front consideration received. None of the development or regulatory milestones were included in the transaction price, as all milestone amounts were fully constrained. As part of the Company's evaluation of the constraint, the Company considered numerous factors, including that achievement of the milestones is outside of its control and contingent upon success in future clinical trials and the licensee's efforts. 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 AbbVie 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.

On July 24, 2018, AbbVie received approval from the FDA for ORILISSA for the management of moderate to severe endometriosis pain in women, resulting in the achievement of a $40 million event-based milestone, which the Company recognized as revenue for 2018. The Company also recognized sales-based royalties on AbbVie net sales of ORILISSA of approximately $1.6 million for 2018. In 2017, event-based revenue of $30 million was recognized based on AbbVie's new drug application (NDA) submission for elagolix in endometriosis being accepted by the FDA. In 2016, event-based revenue of $15 million was recognized related to AbbVie's initiation of Phase III development of elagolix in uterine fibroids.

BIAL – Portela & Ca, S.A. In February 2017, the Company entered into an exclusive license agreement with BIAL – Portela & Ca, S.A. (BIAL) for the development and commercialization of opicapone for the treatment of human diseases and conditions, including Parkinson's disease, in the U.S. and Canada. The Company paid BIAL an upfront license fee of $30 million, which was expensed in 2017 as in-process R&D. During the first quarter of 2018, the FDA provided guidance on the regulatory path forward to support an NDA for opicapone for Parkinson's Disease, in which the FDA did not request that the Company conduct an additional Phase III study, resulting in a $10 million event-based milestone payment to BIAL, which was expense as incurred. The Company may be required to pay up to an additional $105 million in milestone payments associated with the regulatory approval and net sales of opicapone. Prior to FDA approval of opicapone, the Company may also be required to pay up to an additional $10 million in milestones based on certain regulatory and clinical results and FDA acceptance of the Company's NDA submission for opicapone. Upon commercialization of opicapone, the Company agreed to determine certain annual sales forecasts. In the event the Company fails to meet the minimum sales requirements for a particular year, it would be required to pay BIAL an amount equal to the difference between the actual net sales and minimum sales requirements for such year. In the event the Company fails to meet the minimum sales requirements for any two years, BIAL may terminate the agreement.

Under the terms of the agreement, the Company is responsible for the management and cost of all opicapone development and commercialization activities in the U.S. and Canada. Further, unless terminated earlier, the agreement will continue on a licensed product-by-product and country-by-country basis until a generic product in respect of such licensed product under the agreement is sold in a country and sales of such generic product are greater than a specified percentage of total sales of such licensed product in such country. Upon the Company's written request prior to the estimated expiration of the term in respect of a licensed product, the parties shall negotiate a good faith continuation of BIAL's supply of such licensed product after the term. After the term, and if BIAL is not supplying a certain licensed product, the Company shall pay BIAL a trademark royalty based on the net sales of such licensed product. Either party may terminate the agreement earlier if the other party materially breaches the agreement and does not cure the breach within a specified notice period, or upon the other party's insolvency. BIAL may terminate the agreement if the Company fails to use commercially reasonable efforts or to submit an NDA for a licensed product by a specified date or under certain circumstances involving a change of control of the Company. In certain circumstances where BIAL elects to terminate the agreement in connection with the Company's change of control, BIAL shall pay the Company a termination fee. The Company may terminate the agreement at any time for any reason upon six months written notice to BIAL if prior to the first NDA approval in the U.S., and upon 9 months written notice to BIAL if such notice is given after the first NDA approval in the U.S. If the Company's termination request occurs prior to the first NDA approval in the U.S., it shall pay BIAL a termination fee except under certain conditions specified in the agreement.

NOTE 3. INVESTMENTS

Available-for-sale securities are carried at fair value, with the unrealized gains and losses reported in comprehensive income (loss). The amortized cost of debt securities in this category is adjusted for amortization of premiums and accretion of discounts to maturity. Such amortization and accretion are included in investment income. Realized gains and losses and declines in value judged to be other-than-temporary, if any, on available-for-sale securities are included in investment income and other, net. The cost of securities sold is based on the specific identification method. Interest and dividends on securities classified as available-for-sale are included in investment income and other, net.

Investments at December 31, 2018 and 2017 consisted of the following:

	December 31,	
(in thousands)	2018	2017
Commercial paper	$ 94,572	$ 75,362
Corporate debt securities	544,978	414,815
Securities of government-sponsored entities	85,677	18,401
Total investments	$ 725,227	$ 508,578

The following is a summary of investments classified as available-for-sale securities:

(in thousands)	Contractual Maturity (in years)	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Aggregate Estimated Fair Value
December 31, 2018:					
Classified as current assets:					
Commercial paper	Less than 1	$ 94,617	$ —	$ (45)	$ 94,572
Corporate debt securities	Less than 1	395,385	—	(1,598)	393,787
Securities of government-sponsored entities	Less than 1	20,887	8	(55)	20,840
Total short-term available-for-sale securities		$ 510,889	$ 8	$ (1,698)	$ 509,199
Classified as non-current assets:					
Corporate debt securities	1 to 2	$ 151,594	$ 66	$ (469)	$ 151,191
Securities of government-sponsored entities	1 to 2	64,676	162	(1)	64,837
Total long-term available-for-sale securities		$ 216,270	$ 228	$ (470)	$ 216,028
December 31, 2017:					
Classified as current assets:					
Commercial paper	Less than 1	$ 75,396	$ 1	$ (35)	$ 75,362
Corporate debt securities	Less than 1	178,776	—	(400)	178,376
Securities of government-sponsored entities	Less than 1	7,503	—	(24)	7,479
Total short-term available-for-sale securities		$ 261,675	$ 1	$ (459)	$ 261,217
Classified as non-current assets:					
Corporate debt securities	1 to 2	$ 237,749	$ —	$ (1,310)	$ 236,439
Securities of government-sponsored entities	1 to 2	11,004	—	(82)	10,922
Total long-term available-for-sale securities		$ 248,753	$ —	$ (1,392)	$ 247,361

The following table presents gross unrealized losses and fair value for those available-for-sale investments that were in an unrealized loss position as of December 31, 2018 and 2017, aggregated by investment category and length of time that individual securities have been in a continuous loss position:

	Less Than 12 Months		12 Months or Greater		Total	
(in thousands)	Estimated Fair Value	Unrealized Losses	Estimated Fair Value	Unrealized Losses	Estimated Fair Value	Unrealized Losses
December 31, 2018:						
Commercial paper	$ 51,927	$ (45)	$ —	$ —	$ 51,927	$ (45)
Corporate debt securities	274,696	(746)	234,798	(1,321)	509,494	(2,067)
Securities of government-sponsored entities	4,999	(1)	10,947	(55)	15,946	(56)
Total	$ 331,622	$ (792)	$ 245,745	$ (1,376)	$ 577,367	$ (2,168)
December 31, 2017:						
Commercial paper	$ 62,602	$ (35)	$ —	$ —	$ 62,602	$ (35)
Corporate debt securities	386,728	(1,660)	28,087	(50)	414,815	(1,710)
Securities of government-sponsored entities	10,922	(82)	7,479	(24)	18,401	(106)
Total	$ 460,252	$ (1,777)	$ 35,566	$ (74)	$ 495,818	$ (1,851)

At each reporting date, the Company performs an evaluation of impairment to determine if any unrealized losses are other-than-temporary. Factors considered in determining whether a loss is other-than-temporary include the length of time and extent to which fair value has been less than the cost basis, the financial condition of the issuer, and the Company's intent and ability to hold the investment until recovery of its amortized cost basis. The Company intends, and has the ability, to hold its investments in unrealized loss positions until their amortized cost basis has been recovered. Based on its evaluation, the Company determined that its unrealized losses were not other-than-temporary at December 31, 2018 and 2017.

NOTE 4. FAIR VALUE MEASUREMENTS

Fair value is an exit price, representing the amount that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants. As such, fair value is a market-based measurement that should be determined based on assumptions that market participants would use in pricing an asset or liability. As a basis for considering such assumptions, a three-tier fair value hierarchy has been established, which prioritizes the inputs used in measuring fair value as follows:

Level 1: Observable inputs such as quoted prices in active markets;

Level 2: Inputs include quoted prices for similar instruments in active markets and/or quoted prices for identical or similar instruments in markets that are not active near the measurement date; and

Level 3: Unobservable inputs in which there is little or no market data, which require the reporting entity to develop its own assumptions.

The Company classifies cash equivalents and available-for-sale investments within Level 1 or Level 2. The fair value of the Company's high-quality investment grade corporate debt securities is determined using proprietary valuation models and analytical tools. These valuation models and analytical tools use market pricing or prices for similar instruments that are both objective and publicly available, including matrix pricing or reported trades, benchmark yields, broker/dealer quotes, issuer spreads, two-sided markets, benchmark securities, bids and/or offers. The Company did not reclassify any investments between levels in the fair value hierarchy during the years ended December 31, 2018 and 2017.

The Company's assets, which are measured at fair value on a recurring basis as of December 31, 2018 and 2017, were determined using the inputs described above:

(in millions)	Carrying Value	Fair Value Measurements Using: Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
December 31, 2018:				
Classified as current assets:				
Cash and money market funds	$ 141.7	$ 141.7	$ —	$ —
Commercial paper	94.6	—	94.6	—
Securities of government-sponsored entities	20.8	—	20.8	—
Corporate debt securities	393.8	—	393.8	—
Subtotal	650.9	141.7	509.2	—
Classified as long-term assets:				
Cash and money market funds	1.5	1.5	—	—
Certificates of deposit	4.0	4.0	—	—
Securities of government-sponsored entities	64.8	—	64.8	—
Corporate debt securities	151.2	—	151.2	—
Total	872.4	147.2	725.2	—
Less cash, cash equivalents and restricted cash	(147.2)	(147.2)	—	—
Total investments	$ 725.2	$ —	$ 725.2	$ —
December 31, 2017:				
Classified as current assets:				
Cash and money market funds	$ 170.2	$ 170.2	$ —	$ —
Commercial paper	159.9	—	159.9	—
Securities of government-sponsored entities	7.5	—	7.5	—
Corporate debt securities	178.4	—	178.4	—
Subtotal	516.0	170.2	345.8	—
Classified as long-term assets:				
Cash and money market funds	1.5	1.5	—	—
Certificates of deposit	3.0	3.0	—	—
Securities of government-sponsored entities	10.9	—	10.9	—
Corporate debt securities	236.4	—	236.4	—
Total	767.8	174.7	593.1	—
Less cash, cash equivalents and restricted cash	(259.2)	(174.6)	(84.6)	—
Total investments	$ 508.6	$ 0.1	$ 508.5	$ —

The fair value of the 2024 Notes, calculated utilizing market quotations from an over-the-counter trading market for these notes (Level 2), was approximately $616.1 million as of December 31, 2018 and $662.1 million as of December 31, 2017. Refer to Note 5 to the consolidated financial statements for more information on the 2024 Notes.

NOTE 5. CONVERTIBLE SENIOR NOTES

On May 2, 2017, the Company completed a private placement of $517.5 million in aggregate principal amount of 2.25% convertible senior notes due 2024 and entered into an indenture agreement that sets forth the details of all the terms and conditions of the 2024 Notes (2024 Indenture). The 2024 Notes accrue interest at a fixed rate of 2.25% per year, payable semiannually in arrears on May 15 and November 15 of each year, beginning on November 15, 2017. The 2024 Notes mature on May 15, 2024. The net proceeds from the issuance of the 2024 Notes were approximately $502.8 million, after deducting commissions and the offering expenses payable by the Company.

Holders of the 2024 Notes may convert the 2024 Notes at any time prior to the close of business on the business day immediately preceding May 15, 2024, only under the following circumstances:

(i) during any calendar quarter commencing after the calendar quarter ending on September 30, 2017 (and only during such calendar quarter), if the last reported sale price of the Company's common stock for at least 20 trading days (whether or not consecutive) during a period of 30 consecutive trading days ending on the last trading day of the immediately preceding calendar quarter is greater than 130% of the conversion price on each applicable trading day;

(ii) during the 5 business-day period immediately after any 5 consecutive trading-day period (the measurement period) in which the trading price (as defined in the 2024 Indenture) per $1,000 principal amount of the 2024 Notes for each trading day of the measurement period was less than 98% of the product of the last reported sale price of the Company's common stock and the conversion rate on each such trading day;

(iii) upon the occurrence of specified corporate events, including a merger or a sale of all or substantially all of the Company's assets; or

(iv) if the Company calls the 2024 Notes for redemption, until the close of business on the business day immediately preceding the redemption date.

On or after January 15, 2024, until the close of business on the scheduled trading day immediately preceding May 15, 2024, holders may convert their 2024 Notes at any time.

Upon conversion, holders will receive the principal amount of their 2024 Notes and any excess conversion value, calculated based on the per share volume-weighted average price (VWAP) for each of the 30 consecutive trading days during the observation period. For both the principal and excess conversion value, holders may receive cash, shares of the Company's common stock or a combination of cash and shares of its common stock, at the Company's option.

It is the Company's intent and policy to settle conversions through combination settlement, which essentially involves repayment of an amount of cash equal to the "principal portion" and delivery of the "share amount" in excess of the principal portion in shares of common stock or cash. In general, for each $1,000 in principal, the "principal portion" of cash upon settlement is defined as the lesser of $1,000, and the conversion value during the 25-day observation period as described in the indenture for the notes. The conversion value is the sum of the daily conversion value which is the product of the effective conversion rate divided by 25 days and the daily VWAP of the Company's common stock. The "share amount" is the cumulative "daily share amount" during the observation period, which is calculated by dividing the daily VWAP into the difference between the daily conversion value (i.e., conversion rate x daily VWAP) and $1,000.

The initial conversion rate for the 2024 Notes is 13.1711 shares of common stock per $1,000 principal amount, which is equivalent to an initial conversion price of approximately $75.92 per share of the Company's common stock. At the initial conversion rate, settlement of the 2024 Notes for shares of the Company's common stock would approximate 6.8 million shares. The conversion rate will be subject to adjustment in some events but will not be adjusted for any accrued and unpaid interest. The initial conversion price of the 2024 Notes represented a premium of approximately 42.5% to the closing sale price of $53.28 per share of the Company's common stock on the Nasdaq Global Select Market on April 26, 2017, the date the Company priced the private offering of the 2024 Notes.

In the event of conversion, holders would forgo all future interest payments, any unpaid accrued interest and the possibility of further stock price appreciation. Upon the receipt of conversion requests, the settlement of the 2024 Notes will be paid pursuant to the terms of the 2024 Indenture. In the event that all of the 2024 Notes are converted, the Company would be required to repay the $517.5 million in principal value and any conversion premium in any combination of cash and shares of its common stock (at the Company's option).

On or after, but not prior to May 15, 2021, the Company may redeem for cash all or part of the 2024 Notes if the last reported sale price (as defined in the 2024 Indenture) of its common stock has been at least 130% of the conversion price then in effect for at least 20 trading days (whether or not consecutive) during any 30 consecutive trading-day period ending on, and including, the trading day immediately before the date which the Company provides notice of redemption. The redemption price will equal the sum of (i) 100% of the principal amount of the 2024 Notes being redeemed, plus (ii) accrued and unpaid interest, including additional interest, if any, to, but excluding, the redemption date. No sinking fund is provided for the 2024 Notes.

If the Company undergoes a fundamental change, as defined in the 2024 Indenture, subject to certain conditions, holders of the 2024 Notes may require the Company to repurchase for cash all or part of their 2024 Notes at a repurchase price equal to 100% of the principal amount of the 2024 Notes to be repurchased, plus accrued and unpaid interest to, but excluding, the fundamental change repurchase date. In addition, if a ''make-whole fundamental change'' (as defined in the 2024 Indenture) occurs prior to January 15, 2024, the Company will, in certain circumstances, increase the conversion rate for a holder who elects to convert the 2024 Notes in connection with the make-whole fundamental change.

The 2024 Notes are the Company's general unsecured obligations that rank senior in right of payment to all of its indebtedness that is expressly subordinated in right of payment to the 2024 Notes, and equal in right of payment to the Company's unsecured indebtedness.

While the 2024 Notes are currently classified as long-term on the Company's consolidated balance sheets, the future convertibility and resulting balance sheet classification of this liability will be monitored at each quarterly reporting date and will be analyzed dependent upon market prices of the Company's common stock during the prescribed measurement periods. In the event that the holders of the 2024 Notes have the election to convert the 2024 Notes at any time during the prescribed measurement period, the 2024 Notes would then be considered a current obligation and classified as such.

As of December 31, 2018, the fair value of the 2024 Notes, which was estimated utilizing market quotations from an over-the-counter trading market, approximated 119% of their face value.

An entity must separately account for the liability and equity components of convertible debt instruments (such as the 2024 Notes) that may be settled entirely or partially in cash upon conversion in a manner that reflects the issuer's economic interest cost. The liability component of the instrument was valued in a manner that reflects the market interest rate for a similar nonconvertible instrument at the date of issuance. The initial carrying value of the liability component of $368.3 million was calculated using a 7.5% assumed borrowing rate. The equity component of $149.2 million, representing the conversion option, was determined by deducting the fair value of the liability component from the par value of the 2024 Notes and is recorded in additional paid-in capital on the consolidated balance sheet at the issuance date. That equity component is treated as a discount on the liability component of the 2024 Notes, which is amortized over the 7-year term of the 2024 Notes using the effective interest rate method. The equity component is not re-measured as long as it continues to meet the conditions for equity classification.

The Company allocated the total transaction costs of approximately $14.7 million related to the issuance of the 2024 Notes to the liability and equity components of the 2024 Notes based on their relative values. Transaction costs attributable to the liability component are amortized to interest expense over the seven-year term of the 2024 Notes, and transaction costs attributable to the equity component are netted with the equity component in stockholders' equity.

The 2024 Notes do not contain any financial or operating covenants or any restrictions on the payment of dividends, the issuance of other indebtedness or the issuance or repurchase of securities by the Company. The 2024 Indenture contains customary events of default with respect to the 2024 Notes, including that upon certain events of default, 100% of the principal and accrued and unpaid interest on the 2024 Notes will automatically become due and payable.

Convertible senior notes, net of discounts and deferred financing costs consisted of the following:

	December 31,	
(in thousands)	**2018**	**2017**
Principal	$ 517,500	$ 517,500
Deferred financing costs	(8,326)	(9,652)
Debt discount, net	(120,678)	(138,230)
Net carrying amount	$ 388,496	$ 369,618

NOTE 6. OTHER BALANCE SHEET DETAILS

Inventory consisted of the following:

	December 31,	
(in thousands)	**2018**	**2017**
Raw materials	$ 7,855	$ —
Work in process	2,208	491
Finished goods	801	533
Total inventory	$ 10,864	$ 1,024

Property and equipment, net, consisted of the following:

(in thousands)	December 31, 2018	2017
Tenant improvements	$ 19,857	$ 2,019
Furniture and fixtures	2,968	1,303
Scientific equipment	28,163	26,248
Computer equipment	11,152	8,821
	62,140	38,391
Less accumulated depreciation	(28,271)	(27,580)
Property and equipment, net	$ 33,869	$ 10,811

Accounts payable and accrued liabilities consisted of the following:

(in thousands)	December 31, 2018	2017
Accrued employee related costs	$ 27,341	$ 24,901
Accounts payable	13,801	5,648
Accrued development costs	7,069	4,799
Other accrued liabilities	38,166	18,172
Total accounts payable and accrued liabilities	$ 86,377	$ 53,520

NOTE 7. NET INCOME (LOSS) PER SHARE

Net income (loss) per share was calculated as follows:

(in thousands, except per share data)	Year Ended December 31, 2018	2017	2016
Net income (loss) - basic and diluted	$ 21,111	$ (142,542)	$ (141,090)
Weighted-average common shares outstanding:			
Basic	90,235	88,089	86,713
Effect of dilutive securities:			
Employee stock purchase program	11	—	—
Stock options	3,228	—	—
Restricted stock units	564	—	—
2024 Notes	1,348	—	—
Diluted	95,386	88,089	86,713
Net income (loss) per share:			
Basic	$ 0.23	$ (1.62)	$ (1.63)
Diluted	$ 0.22	$ (1.62)	$ (1.63)

Shares which have been excluded from diluted per share amounts because their effect would have been anti-dilutive include the following:

(in thousands)	Year Ended December 31, 2018	2017	2016
Stock options and restricted stock units	887	7,436	6,995

NOTE 8. SHARE-BASED COMPENSATION

Share-Based Compensation Plans. In May 2011, the Company adopted the Neurocrine Biosciences, Inc. 2011 Equity Incentive Plan (the 2011 Plan) pursuant to which 19 million shares of Company's common stock are authorized for issuance. The 2011 Plan provides for the grant of stock options that qualify as incentive stock options under Section 422 of the Internal Revenue Code of 1986, as amended (the Code), nonstatutory stock options, restricted stock awards, restricted stock unit awards (RSUs), stock appreciation rights, performance stock awards, performance-based restricted stock units (PRSUs) and other forms of equity compensation. In May 2018, the Company adopted the Neurocrine Biosciences, Inc. ESPP pursuant to which 300,000 shares of the Company's common stock are authorized for issuance. No purchases have occurred under the ESPP during the year ended December 31, 2018.

The Company also issues stock options and RSUs under the Neurocrine Biosciences, Inc. Inducement Plan (Inducement Plan) to certain employees. The Company granted 70,000 stock options and 20,000 RSUs pursuant to the Inducement Plan in 2018 and granted 410,000 stock options and 12,500 RSUs pursuant to the Inducement Plan in 2017. The Company did not grant any stock options or RSUs pursuant to the Inducement Plan during 2016. These stock option grants have a 4-year vesting period and the RSUs generally have vesting periods of 3 to 4 years. The Company currently has 245,162 in stock options and RSUs outstanding under this Inducement Plan.

As of December 31, 2018, approximately 6.8 million shares of common stock remained available for the future grant of awards under the 2011 Plan. Only share awards made under the 2011 Plan that are subsequently cancelled due to forfeiture or expiration are returned to the share pool available for future grants.

The Company issues new shares upon the exercise of stock options, the issuance of stock bonus awards, and the vesting of RSUs and PRSUs, and has 7.2 million shares of common stock reserved for such issuances as of December 31, 2018.

Vesting Provisions of Share-Based Compensation. Stock options generally have terms from 7 to 10 years from the date of grant, and generally vest over a 3 to 4-year period. The maximum contractual term for all options granted from the 2011 Plan is 10 years. RSUs granted under the 2011 Plan generally have vesting periods of 4 years. PRSUs granted under the 2011 Plan vest based on the achievement of certain pre-defined Company-specific performance criteria and expire 4 to 5 years from the grant date.

Share-Based Compensation. The compensation cost that has been included in the statement of comprehensive income (loss) for all share-based compensation arrangements is as follows:

	Year Ended December 31,		
(in thousands)	2018	2017	2016
Sales, general and administrative expense	$ 31,847	$ 27,951	$ 16,770
Research and development expense	26,221	14,571	11,694
Share-based compensation expense	$ 58,068	$ 42,522	$ 28,464

Stock Options. The exercise price of all stock options granted during the years ended December 31, 2018, 2017 and 2016 was equal to the closing price of the Company's common stock on the date of grant. The estimated fair value of each stock option award granted was determined on the date of grant using the Black-Scholes option-pricing valuation model with the following weighted-average assumptions for option grants during the three years ended December 31, 2018:

	Year Ended December 31,		
(in thousands)	2018	2017	2016
Risk-free interest rate	2.5%	2.0%	1.4%
Expected volatility of common stock	59.5%	58.0%	60.0%
Dividend yield	0.0%	0.0%	0.0%
Expected option term	4.7 years	5.7 years	5.6 years

The Company estimates the fair value of stock options using a Black-Scholes option-pricing model on the date of grant. The fair values of equity instruments are recognized and amortized on a straight-line basis over the requisite service period. The Black-Scholes option-pricing model incorporates various and highly sensitive assumptions including expected volatility, term, and interest rates. The expected volatility is based on the historical volatility of the Company's common stock over the most recent period commensurate with the estimated expected term of the Company's stock options. The expected option term is estimated based on historical experience as well as the status of the employee. For example, directors and officers have a longer expected option term than all other employees. The risk-free rate for periods within the contractual life of the option is based upon observed interest rates appropriate for the expected term of the Company's employee stock options. The Company has never declared or paid dividends and has no plans to do so in the foreseeable future.

The Company's determination of fair value is affected by its stock price as well as a number of assumptions that require judgment. The weighted-average fair values of stock options granted during the years ended December 31, 2018, 2017 and 2016, estimated as of the grant date using the Black-Scholes option-pricing model, were $43.42, $25.11 and $21.49, respectively.

A summary of the status of the Company's stock options as of December 31, 2018, 2017 and 2016 and of changes in options outstanding under the plans during the three years ended December 31, 2018 is as follows:

	2018		2017		2016	
(in thousands, except weighted average data)	Options	Weighted Average Exercise Price	Options	Weighted Average Exercise Price	Options	Weighted Average Exercise Price
Outstanding at January 1	6,356	$ 28.83	6,112	$ 20.01	5,507	$ 15.63
Granted	1,040	84.97	1,807	46.55	1,077	40.19
Exercised	(1,592)	18.95	(1,353)	10.41	(341)	7.60
Canceled	(58)	64.67	(210)	43.05	(131)	34.35
Outstanding at December 31	5,746	$ 41.38	6,356	$ 28.83	6,112	$ 20.01

Stock options outstanding at December 31, 2018 had a weighted average remaining contractual term of 6.7 years.

For the year ended December 31, 2018, 2017 and 2016 share-based compensation expense related to stock options was $35.4 million, $28.2 million, and $18.4 million, respectively. As of December 31, 2018, there was approximately $55.4 million of unamortized compensation cost related to stock options, which is expected to be recognized over a weighted average remaining vesting period of approximately 2.3 years. As of December 31, 2018, there were approximately 3.9 million stock options exercisable with a weighted average exercise price of $31.07 and a weighted-average remaining contractual term of 5.9 years. The total intrinsic value, which is the amount by which the exercise price was exceeded by the sale price of the Company's common stock on the date of sale, of stock option exercises during the years ended December 31, 2018, 2017, and 2016 was $117.0 million, $61.4 million, and $13.2 million, respectively. As of December 31, 2018, the total intrinsic value of stock options outstanding and exercisable was $186.3 million and $158.2 million, respectively. Cash received from stock option exercises for the years ended December 31, 2018, 2017, and 2016 was $29.5 million, $13.9 million, and $2.4 million, respectively.

Restricted Stock Units. The fair value of RSUs is based on the closing sale price of the Company's common stock on the date of issuance. For the year ended December 31, 2018, 2017, and 2016, share-based compensation expense related to RSUs was $21.9 million, $13.9 million, and $8.3 million, respectively. As of December 31, 2018, there was approximately $51.6 million of unamortized compensation cost related to RSUs, which is expected to be recognized over a weighted average remaining vesting period of approximately 2.3 years.

The total intrinsic value of RSUs converted into common shares during the years ended December 31, 2018, 2017, and 2016 was $35.5 million, $14.9 million, and $12.2 million, respectively. The RSUs, at the election of eligible employees, may be subject to deferred delivery arrangement. The total intrinsic value of RSUs outstanding at December 31, 2018 was $80.9 million based on the Company's closing stock price on that date.

A summary of the status of the Company's RSUs as of December 31, 2018, 2017, and 2016 and of changes in RSUs outstanding under the plans for the three years ended December 31, 2018 is as follows:

	2018		2017		2016	
(in thousands, except weighted average data)	Number of Units	Weighted Average Grant Date Fair Value per Unit	Number of Units	Weighted Average Grant Date Fair Value per Unit	Number of Units	Weighted Average Grant Date Fair Value per Unit
Outstanding at January 1	1,080	$ 40.30	883	$ 29.33	910	$ 24.23
Granted	540	85.29	588	47.21	326	36.73
Cancelled	(58)	36.21	(41)	40.62	(69)	32.50
Converted into common shares	(429)	59.23	(350)	24.19	(284)	20.71
Outstanding at December 31	1,133	$ 62.31	1,080	$ 40.30	883	$ 29.33

Performance-Based Restricted Stock Units. During each of the years ended December 31, 2018 and 2016, the Company granted approximately 0.2 million PRSUs that vest based on the achievement of certain pre-defined Company-specific performance criteria and expire approximately 4 to 5 years from the grant date. No PRSUs were granted during the year ended December 31, 2017. Additionally, 0.2 million PRSUs were earned during the year ended December 31, 2017. The fair value of PRSUs is estimated based on the closing sale price of the Company's common stock on the date of grant. Expense recognition for PRSUs commences when attainment of the performance-based criteria is determined to be probable. During 2018, the Company recognized no expense related to PRSUs. During 2017 and 2016, the Company recognized approximately $0.4 million and $1.8 million, respectively, in expense related to PRSUs. At December 31, 2018, the total unrecognized estimated compensation expense related to PRSUs was $19.7 million

and the total intrinsic value of PRSUs outstanding was $23.6 million based on the Company's closing stock price on that date. The total intrinsic value of PRSUs converted into common shares was $8.8 million during the year ended December 31, 2017. No PRSUs were earned during the years ended December 31, 2018 or 2016.

Employee Stock Purchase Plan. Under the ESPP, eligible employees may purchase shares of the Company's common stock at a discount semi-annually based on a percentage of their annual compensation. The ESPP provides for the granting of up to 300,000 shares of the Company's common stock to eligible employees. The discounted purchase price is equal to the lower of 85% of (i) the market value per share of the common stock on the first day of the offering period or (ii) the market value per share of common stock on the purchase date. Share-based compensation expense recognized under the ESPP was $0.8 million for the year ended December 31, 2018.

NOTE 9. INCOME TAXES

The components of the income tax expense for continuing operations are as follows:

(in thousands)	2018	2017	2016
Current:			
Federal	$ (100)	$ —	$ —
State	830	—	—
Total income tax expense	$ 730	$ —	$ —

The provision for income taxes on earnings subject to income taxes differs from the statutory federal rate at December 31, 2018, 2017 and 2016, due to the following:

(in thousands)	2018	2017	2016
Federal income taxes at 21% for 2018 and 35% for 2017 and 2016	$ 4,587	$ (49,889)	$ (49,383)
State income tax, net of federal benefit	361	(4,013)	2
Tax effect on non-deductible expenses	446	433	(321)
Share-based compensation expense	(9,778)	(19,589)	(5,077)
Officer compensation	915	2,163	—
Change in tax rate	(198)	154,415	—
Expired tax attributes	13,874	2,998	6,708
Research credits	(13,526)	(5,596)	(5,554)
Change in valuation allowance	4,306	(79,966)	53,414
Other	(257)	(956)	211
	$ 730	$ —	$ —

Significant components of the Company's deferred tax assets and liabilities as of December 31, 2018 and 2017 are listed below. A valuation allowance of $335.2 million and $330.9 million at December 31, 2018 and 2017, respectively, has been recognized to offset net deferred tax assets as realization of such assets is uncertain. Amounts are shown as of December 31 as of each respective year:

(in thousands)	2018	2017
Deferred tax assets:		
Net operating losses	$ 223,800	$ 238,500
R&D credits	62,200	47,500
Capitalized R&D	34,800	47,500
Share-based compensation	17,300	14,600
Other	28,600	14,600
Total deferred tax assets	366,700	362,700
Deferred tax liabilities:		
Convertible senior notes	(26,400)	(31,300)
Fixed assets	(5,100)	(500)
Total deferred tax liabilities	(31,500)	(31,800)
Net of deferred tax assets and liabilities	335,200	330,900
Valuation allowance	(335,200)	(330,900)
Net deferred tax assets	$ —	$ —

At December 31, 2018, the Company had federal and state income tax net operating loss carry forwards of approximately $1.0 billion and $398.0 million, respectively. The federal net operating losses will begin to expire in 2021, unless previously utilized.

A portion of the California net operating loss carry forwards expired in 2018. The remaining California net operating losses will begin to expire in 2028 and the net operating losses related to other states will begin to expire in 2026.

In addition, the Company has federal and California R&D tax credit carry forwards of $63.6 million and $41.6 million, respectively. A portion of the federal R&D tax credit carry forwards expired in 2018. The remaining federal R&D tax credits will continue to expire beginning in 2019, unless previously utilized. The California R&D tax credits carry forward indefinitely.

Additionally, the future utilization of the Company's net operating loss and R&D tax credit carry forwards to offset future taxable income may be subject to annual limitations, pursuant to Internal Revenue Code Sections 382 and 383, as a result of ownership changes that could result in the future. The Company has determined that no ownership changes have occurred through December 31, 2018.

On December 22, 2017, the Tax Cuts and Jobs Act (TCJA) was enacted, reducing the corporate income tax rate from 35% to 21% effective on January 1, 2018. The carrying value of the Company's deferred tax assets is also determined by the enacted U.S. corporate income tax rate. Consequently, any changes in the U.S. corporate income tax rate have impacted the carrying value of the Company's deferred tax assets. Under the new corporate income tax rate of 21%, deferred income taxes decreased, with a corresponding decrease to the valuation allowance. Therefore, the TCJA had no impact on the Company's 2017 earnings. As of December 31, 2018, the Company has completed its accounting of the tax effects from the enactment of the TCJA.

Under the FASB's accounting guidance related to uncertain tax positions, among other things, the impact of an uncertain income tax position on the income tax return must be recognized at the largest amount that is more-likely-than-not to be sustained upon audit by the relevant taxing authority. An uncertain income tax position will not be recognized if it has less than a 50% likelihood of being sustained. Additionally, the FASB provides accounting guidance on derecognition, classification, interest and penalties, accounting in interim periods, disclosure, and transition.

The Company's policy is to recognize interest or penalties related to income tax matters in income tax expense. Interest and penalties related to income tax matters were not material for the years ended December 31, 2018 or 2017.

The Company is subject to taxation in the U.S. and various state jurisdictions. The Company's tax years for 2001 (federal) and 2008 (California) and forward are subject to examination by the U.S. and state tax authorities due to the carry forward of unutilized net operating losses and R&D tax credits.

The following table summarizes the activity related to unrecognized tax benefits:

(in thousands)	2018	2017	2016
Balance as of the beginning of the year	$ 37,403	$ 34,112	$ 33,074
Increases related to prior year tax positions	6,103	—	260
Increases related to current year tax positions	11,726	3,291	2,211
Expiration of the statute of limitations for the assessment of taxes	(457)	—	(1,433)
Balance as of the end of the year	$ 54,775	$ 37,403	$ 34,112

The Company, under authoritative guidance, excluded those deferred tax assets that are not more-likely-than-not to be sustained under the technical merits of the tax position. These unrecognized tax benefits totaled $11.7 million for current year tax positions, as reflected in the table above.

As of December 31, 2018, the Company had $50.1 million of unrecognized tax benefits that, if recognized and realized, would affect the effective tax rate.

In the next 12 months, the Company does not expect a significant change in its unrecognized tax benefits.

NOTE 10. LEASES

In December 2007, the Company closed the sale of its facility and associated real property for a purchase price of $109 million. Concurrent with the sale, the Company retired the entire $47.7 million in mortgage debt previously outstanding with respect to the facility and associated real property and received cash of $61.0 million, net of transaction costs and debt retirement. The ultimate result of this real estate sale was a net deferred gain of $39.1 million, of which the Company recognized $0.7 million in 2018, $2.1 million in 2017, and $3.4 million in 2016. As of December 31, 2018, the remaining balance of the net deferred gain was approximately $7.3 million, which the Company expects to recognize as a cumulative-effect adjustment to equity upon adoption of Topic 842 on January 1, 2019. Refer to Note 1 to the consolidated financial statements for more information on the impact of adoption.

Upon the closing of the sale of the facility and associated real property, the Company entered into an agreement (original lease) whereby it leased back the Company's corporate headquarters, comprised of two buildings located in San Diego, California, for an initial term of 12 years. In 2008 through 2011, the Company entered into a series of subsequent amendments to the original lease, whereby the Company vacated a building and continued to occupy one building.

In June 2017, the Company entered into an amendment to extend the current term of the original lease through December 31, 2029. Under the terms of the amendment, the Company reduced the base rental rate by approximately 8% and will continue to pay base annual rent (subject to an annual fixed percentage increase), plus a 3.5% annual management fee, property taxes, and other normal and necessary expenses, such as utilities, repairs, and maintenance. Certain incentives were included in the lease, including approximately $13.1 million in tenant improvement allowances, three months of rent abatement, and a reduction in the required security deposit amount from $4.7 million to $3.0 million. In lieu of a cash security deposit, Wells Fargo Bank, N.A. issued on the Company's behalf a $3.0 million letter of credit, which is secured by a deposit of equal amount with the same bank. The Company has the right to extend the lease for 2 consecutive 10-year terms and right of first offer for future rental of adjacent office space owned by the landlord.

In May 2018, the Company entered into an agreement to lease 44,718 square feet of office space, which commenced on July 1, 2018, for a term of 10 years and 10 months. Under the terms of the lease, the Company will pay base annual rent (subject to an annual fixed percentage increase), plus property taxes, and other normal and necessary expenses, such as utilities, repairs, and maintenance. Certain incentives were included in the lease, including approximately $4.2 million in tenant improvement allowances and twelve months of rent abatement. In lieu of a cash security deposit, Wells Fargo Bank, N.A. issued on the Company's behalf a $1.0 million letter of credit, which is secured by a deposit of equal amount with the same bank. The Company does not have the right to extend the lease or right of first offer for future rental of adjacent office space owned by the landlord.

The Company recognizes rent expense on a straight-line basis over the term of the associated lease. Accordingly, rent expense recognized in excess of rent paid is reflected as a liability in the Company's consolidated balance sheets. Gross rent expense was approximately $6.9 million for 2018, $5.9 million for 2017, and $6.0 million for 2016.

NOTE 11. RETIREMENT PLAN

The Company has a 401(k) defined contribution savings plan (401(k) Plan). The 401(k) Plan is for the benefit of all qualifying employees and permits voluntary contributions by employees up to 60% of base salary limited by the IRS-imposed maximum. Employer contributions were $1.8 million, $1.1 million, and $0.6 million for the years ended December 31, 2018, 2017 and 2016, respectively.

NOTE 12. COMMITMENTS AND CONTINGENCIES

Product Liability. The Company's business exposes it to liability risks from its potential drug products. A successful product liability claim or series of claims brought against the Company could result in payment of significant amounts of money and divert management's attention from running the business. The Company may not be able to maintain insurance on acceptable terms, or the insurance may not provide adequate protection in the case of a product liability claim. To the extent that product liability insurance, if available, does not cover potential claims, the Company would be required to self-insure the risks associated with such claims. The Company believes that it carries reasonably adequate insurance for product liability claims.

Licensing and Research Agreements. The Company entered into in-licensing agreements with various universities and research organizations, which are generally cancelable at the option of the Company with terms ranging from 0-180 days written notice. Under the terms of these agreements, the Company received licenses to research tools, know-how, and technology claimed in certain patents or patent applications. The Company is required to pay fees, milestones, and/or royalties on future sales of products employing the technology or falling under claims of a patent, and some of the agreements require minimum royalty payments. Some of the agreements also require the Company to pay expenses arising from the prosecution and maintenance of the patents covering the in-licensed technology. The Company continually reassesses the value of the license agreements and cancels them when research efforts are discontinued on these programs. As of December 31, 2018, the Company may be required to pay milestone payments of up to $1.0 billion over the lives of these agreements, in addition to royalties on sales of the affected products at rates ranging up to 6%. Due to the uncertainties of the development process, the timing and probability of the milestone and royalty payments cannot be accurately estimated.

The Company is not aware of any proceedings or claims that it believes will have, individually or in the aggregate, a material adverse effect on its business, financial condition or results of operations.

NOTE 13. SUBSEQUENT EVENTS

On January 28, 2019, the Company entered into a collaboration and license agreement with a clinical-stage gene therapy company, Voyager Therapeutics, Inc., or Voyager. The collaboration is focused on the development and commercialization of four programs using Voyager's proprietary gene therapy platforms. The four programs consist of Voyager's VY-AADC program for Parkinson's disease, Voyager's VY-FXN01 program for Friedreich's ataxia, as well as rights to two programs to be determined by the parties in the future. In connection with the agreement, the Company agreed to pay Voyager a $115 million upfront cash payment and entered into an agreement to purchase $50 million of Voyager's common stock. Pursuant to development plans agreed to by the Company and Voyager, unless Voyager exercises the co-development and co-commercialization rights that are described below, the Company has agreed to be responsible for all development costs. Upon the occurrence of a specified event for each program, the Company has agreed to assume responsibility for development, manufacturing, and commercialization activities for such program. Additionally, Voyager may be entitled to earn up to $1.7 billion in development, regulatory, and commercial milestones across the four programs and royalties for net sales in and outside the U.S.

Under the terms of the agreement, on a program-by-program basis, upon the achievement of milestones or metrics specified in the agreement for VY-AADC and VY-FXN01, Voyager will have the option to co-develop and co-commercialize such program with the Company in the U.S. under cost- and profit-sharing arrangements, and Voyager agrees to forfeit certain milestones and royalties related to such program for which Voyager has exercised its co-develop and co-commercialize option.

The effectiveness of the agreement and the closing of the sale and issuance of the Voyager common stock described above are subject to certain conditions, including the expiration or termination of the applicable waiting period under the Hart-Scott-Rodino Antitrust Improvements Act of 1976, as amended, and other customary closing conditions.

NOTE 14. SELECTED QUARTERLY FINANCIAL DATA (UNAUDITED)

The following is a summary of the quarterly results of the Company for the years ended December 31, 2018 and 2017:

(in thousands, except per share data)	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
2018:				
Revenues	$ 71,086	$ 96,905	$ 151,757	$ 131,492
Operating expenses	$ 108,533	$ 98,757	$ 97,434	$ 109,621
Net (loss) income	$ (41,818)	$ (5,913)	$ 50,764	$ 18,078
Net (loss) income per share:				
Basic	$ (0.47)	$ (0.07)	$ 0.56	$ 0.20
Diluted	$ (0.47)	$ (0.07)	$ 0.52	$ 0.19
Shares used in the calculation of net (loss) income per share:				
Basic	89,526	90,100	90,555	90,742
Diluted	89,526	90,100	96,798	95,724
2017:				
Revenues	$ —	$ 6,335	$ 60,774	$ 94,517
Operating expenses	$ 79,932	$ 63,603	$ 66,769	$ 82,683
Net (loss) income	$ (78,326)	$ (59,985)	$ (11,125)	$ 6,894
Net (loss) income per share:				
Basic	$ (0.90)	$ (0.68)	$ (0.13)	$ 0.08
Diluted	$ (0.90)	$ (0.68)	$ (0.13)	$ 0.07
Shares used in the calculation of net (loss) income per share:				
Basic	87,283	88,063	88,325	88,665
Diluted	87,283	88,063	88,325	92,659

ITEM 9. *CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE*

Not applicable.

ITEM 9A. *CONTROLS AND PROCEDURES*

We maintain disclosure controls and procedures that are designed to ensure that information required to be disclosed in our Exchange Act reports is recorded, processed, summarized and reported within the timelines specified in the SEC's rules and forms, and that such information is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure. In designing and evaluating the disclosure controls and procedures, management recognized that any controls and procedures, no matter how well designed and operated, can only provide reasonable assurance of achieving the desired control objectives, and in reaching a reasonable level of assurance, management necessarily was required to apply its judgment in evaluating the cost-benefit relationship of possible controls and procedures.

As required by SEC Rule 13a-15(b), we carried out an evaluation, under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, of the effectiveness of the design and operation of our disclosure controls and procedures as of the end of the year covered by this report. Based on the foregoing, our Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures were effective at the reasonable assurance level.

Management's Report on Internal Control Over Financial Reporting

Internal control over financial reporting refers to the process designed by, or under the supervision of, our Chief Executive Officer and Chief Financial Officer, and effected by our board of directors, management and other personnel, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles, and includes those policies and procedures that:

(1) Pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and dispositions of our assets;

(2) Provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that our receipts and expenditures are being made only in accordance with authorization of our management and directors; and

(3) Provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of our assets that could have a material effect on the financial statements.

Internal control over financial reporting cannot provide absolute assurance of achieving financial reporting objectives because of its inherent limitations. Internal control over financial reporting is a process that involves human diligence and compliance and is subject to lapses in judgment and breakdowns resulting from human failures. Internal control over financial reporting also can be circumvented by collusion or improper management override. Because of such limitations, there is a risk that material misstatements may not be prevented or detected on a timely basis by internal control over financial reporting. However, these inherent limitations are known features of the financial reporting process. Therefore, it is possible to design into the process safeguards to reduce, though not eliminate, this risk. Management is responsible for establishing and maintaining adequate internal control over financial reporting for the company.

Management has used the framework set forth in the report entitled Internal Control-Integrated Framework (2013 framework) published by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework), known as COSO, to evaluate the effectiveness of our internal control over financial reporting. Based on this assessment, management has concluded that our internal control over financial reporting was effective as of December 31, 2018. Ernst & Young, LLP, our independent registered public accounting firm, has issued an attestation report on our internal control over financial reporting as of December 31, 2018, which is included herein.

There has been no change in our internal control over financial reporting during our most recent fiscal quarter that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

Report of Independent Registered Public Accounting Firm

To the Shareholders and the Board of Directors of
Neurocrine Biosciences, Inc.

Opinion on Internal Control over Financial Reporting

We have audited Neurocrine Biosciences, Inc.'s internal control over financial reporting as of December 31, 2018, based on criteria established in Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework), (the COSO criteria). In our opinion, Neurocrine Biosciences, Inc. (the Company) maintained, in all material respects, effective internal control over financial reporting as of December 31, 2018, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of the Company as of December 31, 2018 and 2017, the related consolidated statements of operations and comprehensive income (loss), stockholders' equity, and cash flows, for each of the three years in the period ended December 31, 2018, and the related notes and our report dated February 7, 2019 expressed an unqualified opinion thereon.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the 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 audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects.

Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ Ernst & Young LLP

San Diego, California
February 7, 2019

ITEM 9B. ***OTHER INFORMATION***

None.

PART III

ITEM 10. *DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE*

Information required by this item will be contained in our Definitive Proxy Statement for our 2019 Annual Meeting of Stockholders, to be filed pursuant to Regulation 14A with the Securities and Exchange Commission within 120 days of December 31, 2018. Such information is incorporated herein by reference.

We have adopted a code of ethics that applies to our Chief Executive Officer, Chief Financial Officer, and to all of our other officers, directors, employees and agents. The code of ethics is available at the Corporate Governance section of the Investors page on our website at www.neurocrine.com. We intend to disclose future amendments to, or waivers from, certain provisions of our code of ethics on the above website within four business days following the date of such amendment or waiver.

ITEM 11. *EXECUTIVE COMPENSATION*

Information required by this item will be contained in our Definitive Proxy Statement for our 2019 Annual Meeting of Stockholders, to be filed pursuant to Regulation 14A with the Securities and Exchange Commission within 120 days of December 31, 2018. Such information is incorporated herein by reference.

ITEM 12. *SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS*

Information required by this item will be contained in our Definitive Proxy Statement for our 2019 Annual Meeting of Stockholders, to be filed pursuant to Regulation 14A with the Securities and Exchange Commission within 120 days of December 31, 2018. Such information is incorporated herein by reference.

ITEM 13. *CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE*

Information required by this item will be contained in our Definitive Proxy Statement for our 2019 Annual Meeting of Stockholders, to be filed pursuant to Regulation 14A with the Securities and Exchange Commission within 120 days of December 31, 2018. Such information is incorporated herein by reference.

ITEM 14. *PRINCIPAL ACCOUNTING FEES AND SERVICES*

Information required by this item will be contained in our Definitive Proxy Statement for our 2019 Annual Meeting of Stockholders, to be filed pursuant to Regulation 14A with the Securities and Exchange Commission within 120 days of December 31, 2018. Such information is incorporated herein by reference.

PART IV

ITEM 15. ***EXHIBITS, FINANCIAL STATEMENT SCHEDULES***

(a) Documents filed as part of this report.

1. List of Financial Statements. The following are included in Item 8 of this report:

Report of Independent Registered Public Accounting Firm

Consolidated Balance Sheets as of December 31, 2018 and 2017

Consolidated Statements of Comprehensive Income (Loss) for the years ended December 31, 2018, 2017 and 2016

Consolidated Statements of Stockholders' Equity for the years ended December 31, 2018, 2017 and 2016

Consolidated Statements of Cash Flows for the years ended December 31, 2018, 2017 and 2016

Notes to the Consolidated Financial Statements (includes unaudited Selected Quarterly Financial Data)

2. List of all Financial Statement schedules. All schedules are omitted because they are not applicable, or the required information is shown in the Financial Statements or notes thereto.

3. List of Exhibits required by Item 601 of Regulation S-K. See part (b) below.

(b) Exhibits. The following exhibits are filed as part of, or incorporated by reference into, this report:

Exhibit Number	Description
3.1	Certificate of Incorporation, as amended(1)
3.2	Bylaws, as amended(2)
4.1	Form of Common Stock Certificate(3)
4.2	Indenture, dated as of May 2, 2017, by and between the Company and U.S. Bank National Association, as Trustee(4)
4.3	Form of Note representing the Company's 2.25% Convertible Notes due 2024(5)
Collaboration and License Agreements	
10.1*	Collaboration Agreement dated June 15, 2010, by and between Abbott International Luxembourg S.a.r.l. and the Company as amended on August 31, 2011(6)
10.2*	First Amendment to Collaboration and License Agreement Dated August 31, 2011 between the Company and Abbott International Luxemburg S.a.r.l.(7)
10.3*	Collaboration and License Agreement dated March 31, 2015 between Mitsubishi Tanabe Pharma Corporation and the Company(8)
10.4*	License Agreement dated February 9, 2017 between BIAL– Portela & CA, S.A. and the Company(9)
10.5*	Collaboration and License Agreement dated January 28, 2019 between Voyager Therapeutics, Inc. and the Company
10.6	Stock Purchase Agreement dated January 28, 2019 between Voyager Therapeutics, Inc. and the Company
10.7	Investor Agreement dated January 28, 2019 between Voyager Therapeutics, Inc. and the Company
Manufacturing Agreements	
10.8*	Master Manufacturing Services Agreement dated November 28, 2016, by and between Patheon UK Limited and the Company(10)
10.9*	Product Agreement dated November 28, 2016, by and between Patheon UK Limited and the Company(11)
10.10*	Commercial Supply Agreement dated March 9, 2017 between F.I.S. – FABBRICA ITALIANA SINTETICI S.p.A. and the Company
10.11*	Amended and Restated Product Agreement dated June 27, 2017 by and between Patheon UK Limited and the Company(12)
Equity Plans and Related Agreements	
10.12**	Neurocrine Biosciences, Inc. 2003 Incentive Stock Plan, as amended and form of stock option agreement and restricted

	stock unit agreement(13)
10.13**	Neurocrine Biosciences, Inc. 2011 Equity Incentive Plan, as amended(14)
10.14**	Form of Stock Option Grant Notice and Option Agreement for use under the Neurocrine Biosciences, Inc. 2011 Equity Incentive Plan, and Form of Restricted Stock Unit Grant Notice and Restricted Stock Unit Agreement for use under the Neurocrine Biosciences, Inc. 2011 Equity Incentive Plan(15)
10.15**	Neurocrine Biosciences, Inc. Inducement Plan, as amended(16)
10.16**	Form of Stock Option Grant Notice and Option Agreement for use under the Neurocrine Biosciences, Inc. Inducement Plan, and Form of Restricted Stock Unit Grant Notice and Restricted Stock Unit Agreement for use under the Neurocrine Biosciences, Inc. Inducement Plan(17)
10.17**	Neurocrine Biosciences, Inc. 2018 Employee Stock Purchase Plan dated May 30, 2018(18)
Agreements with Officers and Directors	
10.18**	Amended and Restated Employment Agreement effective August 1, 2007 between the Company and Kevin C. Gorman, Ph.D.(19)
10.19**	Amended and Restated Employment Agreement effective August 6, 2007 between the Company and Christopher F. O'Brien M.D.(20)
10.20**	Amended and Restated Employment Agreement effective August 14, 2007 between the Company and Haig P. Bozigian, Ph.D.(21)
10.21**	Form of Amendment to Employment Agreement for executive officers, effective as of December 15, 2010(22)
10.22**	Employment Agreement dated May 26, 2015 between the Company and Eric Benevich(23)
10.23**	Employment Agreement effective November 29, 2017 between the Company and Matthew C. Abernethy(24)
10.24**	Form of Indemnity Agreement entered into between the Company and its officers and directors(25)
Agreements Related to Real Property	
10.25	Amended and Restated Lease dated November 1, 2011 between the Company and Kilroy Realty, L.P.(26)
10.26	First Amendment to Amended and Restated Lease between the Company and Kilroy Realty, L.P., dated June 5, 2017(27)
10.27	Second Amendment to Amended and Restated Lease between the Company and Kilroy Realty, L.P., dated October 12, 2017(28)
10.28	Letter of Credit dated December 3, 2007, issued by Wells Fargo Bank, N.A. for the benefit of Kilroy Realty, L.P., as amended on November 20, 2014 and June 19, 2017(29)
21.1	Subsidiaries of the Company
23.1	Consent of Independent Registered Public Accounting Firm
31.1	Certification of Chief Executive Officer pursuant to Rules 13a-14 and 15d-14 promulgated under the Securities Exchange Act of 1934
31.2	Certification of Chief Financial Officer pursuant to Rules 13a-14 and 15d-14 promulgated under the Securities Exchange Act of 1934
32***	Certifications of Chief Executive Officer and Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
101.INS	XBRL Instance Document.
101.SCH	XBRL Taxonomy Extension Schema Document.
101.CAL	XBRL Taxonomy Extension Calculation Linkbase 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.

(1) Incorporated by reference to Exhibit 3.1 of the Company's Quarterly Report on Form 10-Q filed on November 5, 2018
(2) Incorporated by reference to Exhibit 3.2 of the Company's Quarterly Report on Form 10-Q filed on November 5, 2018

(3) Incorporated by reference to the Company's Registration Statement on Form S-1 (Registration No. 333-03172)
(4) Incorporated by reference to Exhibit 4.1 of the Company's Current Report on Form 8-K filed on May 2, 2017
(5) Incorporated by reference to Exhibit 99.1 of the Company's Current Report on Form 8-K filed on May 2, 2017
(6) Incorporated by reference to Exhibit 10.2 of the Company's Quarterly Report on Form 10-Q filed on July 29, 2010
(7) Incorporated by reference to Exhibit 10.2 of the Company's Quarterly Report on Form 10-Q filed on October 31, 2011
(8) Incorporated by reference to Exhibit 10.1 of the Company's Quarterly Report on Form 10-Q filed on April 30, 2015
(9) Incorporated by reference to Exhibit 99.4 of the Company's Current Report on Form 8-K filed on April 25, 2017
(10) Incorporated by reference to Exhibit 99.1 of the Company's Current Report on Form 8-K filed on April 25, 2017
(11) Incorporated by reference to Exhibit 99.2 of the Company's Current Report on Form 8-K filed on April 25, 2017
(12) Incorporated by reference to Exhibit 10.2 of the Company's Quarterly Report on Form 10-Q filed on November 1, 2017
(13) Incorporated by reference to Exhibit 10.1 of the Company's Quarterly Report on Form 10-Q filed on July 30, 2009
(14) Incorporated by reference to Exhibit 99.1 of the Company's Current Report on Form 8-K filed on May 30, 2018
(15) Incorporated by reference to Exhibit 99.1 of the Company's Current Report on Form 8-K filed on June 1, 2015
(16) Incorporated by reference to Exhibit 10.17 of the Company's Annual Report on Form 10-K filed on February 13, 2018
(17) Incorporated by reference to Exhibit 10.1 of the Company's Quarterly Report on Form 10-Q filed on July 29, 2015
(18) Incorporated by reference to Exhibit 99.2 of the Company's Current Report on Form 8-K filed on May 30, 2018
(19) Incorporated by reference to Exhibit 10.3 of the Company's Quarterly Report on Form 10-Q filed on August 3, 2007
(20) Incorporated by reference to Exhibit 10.35 of the Company's Annual Report on Form 10-K filed on February 10, 2011
(21) Incorporated by reference to Exhibit 10.37 of the Company's Annual Report on Form 10-K filed on February 11, 2008
(22) Incorporated by reference to Exhibit 10.35 of the Company's Annual Report on Form 10-K filed on February 11, 2008
(23) Incorporated by reference to Exhibit 10.32 of the Company's Annual Report on Form 10-K filed on February 14, 2017
(24) Incorporated by reference to Exhibit 10.26 of the Company's Annual Report on Form 10-K filed on February 13, 2018
(25) Incorporated by reference to Exhibit 10.1 of the Company's Quarterly Report on Form 10-Q filed on November 1, 2017
(26) Incorporated by reference to Exhibit 99.2 of the Company's Current Report on Form 8-K filed on January 18, 2012
(27) Incorporated by reference to Exhibit 10.1 of the Company's Quarterly Report on Form 10-Q filed on August 3, 2017
(28) Incorporated by reference to Exhibit 10.3 of the Company's Quarterly Report on Form 10-Q filed on November 1, 2017
(29) Incorporated by reference to Exhibit 10.3 of the Company's Current Report on Form 8-K filed on December 10, 2007; Exhibit 10.5 of the Company's Annual Report on Form 10-K filed on February 9, 2015; and Exhibit 10.2 of the Company's Quarterly Report on Form 10-Q filed on August 3, 2017

* Confidential treatment has been granted with respect to certain portions of the exhibit.

** Management contract or compensatory plan or arrangement.

*** 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 and are not to be incorporated by reference into any filing of Neurocrine Biosciences, Inc., whether made before or after the date hereof, regardless of any general incorporation language in such filing.

Except as specifically noted above, the Company's Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q and Current Reports on Form 8-K have a Commission File Number of 000-22705.

(c) Financial Statement Schedules. See Item 15(a)(2) above.

SIGNATURES

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

NEUROCRINE BIOSCIENCES, INC.

A Delaware Corporation

By: /s/ Kevin C. Gorman
Kevin C. Gorman
Chief Executive Officer

Date: February 7, 2019

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed by the following persons on behalf of the Registrant and in the capacities and on the dates indicated:

Signature	Title	Date
/s/ Kevin C. Gorman Kevin C. Gorman	Chief Executive Officer and Director (Principal Executive Officer)	February 7, 2019
/s/ Matthew C. Abernethy Matthew C. Abernethy	Chief Financial Officer (Principal Financial and Accounting Officer)	February 7, 2019
/s/ William H. Rastetter William H. Rastetter	Chairman of the Board of Directors	February 7, 2019
/s/ Gary A. Lyons Gary A. Lyons	Director	February 7, 2019
/s/ George J. Morrow George J. Morrow	Director	February 7, 2019
/s/ Richard F. Pops Richard F. Pops	Director	February 7, 2019
/s/ Alfred W. Sandrock, Jr. Alfred W. Sandrock, Jr.	Director	February 7, 2019
/s/ Stephen A. Sherwin Stephen A. Sherwin	Director	February 7, 2019

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Neurocrine Biosciences
Corporate Information

CORPORATE MANAGEMENT

Kevin C. Gorman, Ph.D.
Chief Executive Officer

Matthew C. Abernethy
Chief Financial Officer

Eric Benevich
Chief Commercial Officer

Haig P. Bozigian, Ph.D.
Chief Development Officer

Julie S. Cooke
Chief Human Resources Officer

Kyle W. Gano, Ph.D.
Chief Business Development Officer

Dimitri E. Grigoriadis, Ph.D.
Chief Research Officer

Darin M. Lippoldt, J.D.
Chief Legal Officer

Malcolm C. Lloyd-Smith
Chief Regulatory Officer

Eiry W. Roberts, M.D.
Chief Medical Officer

BOARD OF DIRECTORS

William H. Rastetter, Ph.D.
Chairman of the Board, Neurocrine Biosciences, Inc. and Fate Therapeutics

Kevin C. Gorman, Ph.D.
Chief Executive Officer, Neurocrine Biosciences, Inc.

Gary A. Lyons
Former President and Chief Executive Officer, Neurocrine Biosciences, Inc.

George J. Morrow
Former Executive Vice President, Global Commercial Operations, Amgen Inc.

Richard F. Pops
Chairman of the Board and Chief Executive Officer, Alkermes plc

Alfred W. Sandrock, Jr., M.D., Ph.D.
Executive Vice President and Chief Medical Officer, Biogen Inc.

Stephen A. Sherwin, M.D.
Former Chairman of the Board and Chief Executive Officer, Cell Genesys, Inc.

STOCKHOLDER INFORMATION

Transfer Agent
American Stock Transfer

Corporate Counsel
Cooley LLP

Auditors
Ernst & Young LLP

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