

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

SCHEDULE 14A

Proxy Statement Pursuant to Section 14(a) of the Securities
Exchange Act of 1934

Filed by the Registrant

Filed by a Party other than the Registrant

Check the appropriate box:	
<input type="checkbox"/>	Preliminary Proxy Statement
<input type="checkbox"/>	Confidential, for Use of the Commission Only (as permitted by Rule 14a-6(e)(2))
<input checked="" type="checkbox"/>	Definitive Proxy Statement
<input type="checkbox"/>	Definitive Additional Materials
<input type="checkbox"/>	Soliciting Material under §240.14a-12



VERTEX PHARMACEUTICALS INCORPORATED

(Name of Registrant as Specified In Its Charter)

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2019 PROXY STATEMENT
VERTEX PHARMACEUTICALS INCORPORATED

Notice of Annual Meeting of Shareholders to be held on June 5, 2019





Dear Shareholders:

Since 2012 we have executed on our strategy of investing in scientific innovation to create transformative medicines for people with serious diseases - a strategy we believe maximizes benefits for patients and generates long-term value for shareholders. By all measures, 2018 was an extraordinary year for Vertex, as we accelerated our Phase 3 triple combination programs in cystic fibrosis, advanced and expanded our pipeline into disease areas outside of CF and delivered exceptional performance for our shareholders. Over the longer term, the successful execution of our strategy has caused Vertex to grow from a market capitalization of approximately \$7 billion in early 2012 to over \$45 billion in early 2019.

In CF, we are on the brink of delivering a triple combination regimen that will provide superior benefit to the vast majority of CF patients, bringing us closer to our goal of creating highly effective treatments for all patients with CF. In 2018, we accelerated the clinical development of two triple combination regimens -initiating Phase 3 development in early 2018 and obtaining positive Phase 3 clinical data from both of these programs by early 2019. Based upon this data, we are on track to submit an NDA in the United States for a triple combination regimen in the third quarter of 2019, followed soon thereafter by regulatory submissions in the European Union and other jurisdictions. We believe that in 2020, just four years after the initial discovery of VX-445 and VX-659, we will begin delivering a triple combination regimen to CF patients, including many who have been waiting years for the first treatment for the underlying cause of their disease and others who are eligible for our current medicines but could benefit from improved treatment options.

Beyond CF, we expanded our pipeline by advancing multiple programs into the clinic and obtaining important data from ongoing trials. In late 2018, we initiated a clinical trial for our first drug candidate with the potential to treat alpha-1 antitrypsin deficiency, a genetic disorder that results in life-shortening complications in the lung and liver. In pain, we have generated compelling Phase 2 data in three different pain types - acute pain, musculoskeletal pain and neuropathic pain - with VX-150, a non-opioid drug candidate that inhibits NaV1.8. In collaboration with CRISPR Therapeutics, we also initiated clinical trials to evaluate CTX001, a CRISPR/Cas9 gene editing therapy, as a potential treatment for sickle cell disease and beta thalassemia. In addition to these drug candidates, we expect that we will advance additional compounds into the clinic in 2019, including potential additional compounds targeting pain and alpha-1 antitrypsin deficiency and our first compound targeting focal segmental glomerulosclerosis, a serious kidney disease. This rapid expansion of our pipeline is the result of a research strategy that applies the lessons we learned in CF regarding the importance of: validated targets that address causal human biology; predictive lab assays and clinical biomarkers that give us an early indication of clinical efficacy; rapid paths to regulatory approval; and a focus on transformative medicines regardless of modality.

Our ability to bring our CF medicines to many more patients resulted in \$3.0 billion in total CF revenues in 2018, a 40% increase as compared to 2017, and we expect product revenues to continue to increase in 2019 and beyond. Our revenue growth, together with disciplined operating expense management, has created significant positive cash flows and expanding operating income, all while allowing us to continue investing in innovation to generate additional transformational medicines.

While we are gratified that our accomplishments have been reflected in our business performance, we are proudest of the way that our medicines are positively impacting the lives of patients with CF. There is no more meaningful statement of the power of transformative medicines than their ability to change the way patients think about themselves and their future.

Sincerely,

A handwritten signature in black ink, appearing to read "Jeffrey M. Leiden".

Jeffrey M. Leiden, M.D., Ph.D.
Chairman, Chief Executive Officer and President



Notice of Annual Meeting of Shareholders

Wednesday, June 5, 2019

9:30 a.m.

50 Northern Avenue
Boston, Massachusetts 02210

Dear Shareholders:

You are invited to attend Vertex Pharmaceuticals Incorporated's 2019 Annual Meeting of Shareholders. At the meeting, shareholders will vote:

- to elect the six director nominees that are set forth in the attached proxy statement to one year terms expiring in 2020;
- to approve an amendment and restatement of our 2013 Stock and Option Plan, that, among other things, increases the number of shares authorized for issuance under this plan by 5.0 million shares;
- to approve an amendment and restatement of our Employee Stock Purchase Plan that, among other things, increases the number of shares authorized for issuance under this plan by 2.0 million shares;
- to ratify the selection of Ernst & Young LLP as our independent registered public accounting firm for 2019;
- to approve our named executive officers' compensation in an advisory vote; and
- on two proposals submitted by our shareholders, if properly presented at the meeting.

Shareholders also will transact any other business that may properly come before the annual meeting or any adjournment or postponement of the annual meeting.

RECORD DATE:

You can vote if you were a shareholder of record on April 10, 2019.

Your vote matters. Whether or not you plan to attend the annual meeting, please ensure that your shares are represented by voting, signing, dating and returning your proxy in the enclosed envelope, which requires no postage if mailed in the United States.

April 26, 2019

By Order of the Board of Directors

A handwritten signature in black ink that reads "Sabrina Yohai".

Sabrina Yohai
Secretary

IMPORTANT NOTICE REGARDING AVAILABILITY OF PROXY MATERIALS. This proxy statement and the enclosed proxy card are first being mailed or furnished to our shareholders on or about April 29, 2019. This proxy statement and our Annual Report on Form 10-K for the year ended December 31, 2018 are available to holders of record of our common stock at www.envisionreports.com/vrtx and to beneficial holders of our common stock at www.edocumentview.com/vrtx.

SUMMARY

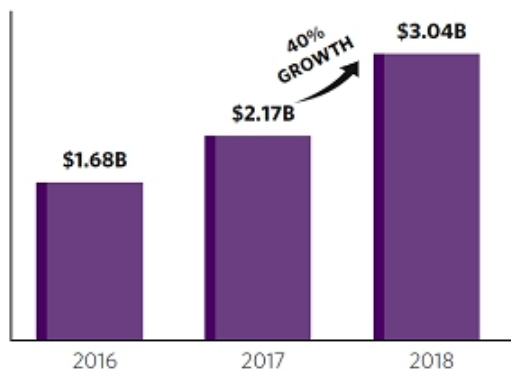
By all measures, 2018 was an extraordinary year for Vertex, as we continued to execute on our strategy of investing in scientific innovation to create transformative medicines for people with serious diseases. In 2018, we obtained approval for and launched SYMDEKO/SYMKEVI, our third medicine for CF, and accelerated the development of our triple combination regimens, which we believe will allow us to treat the vast majority of patients with CF and will provide an improved treatment option for many patients currently taking our medicines. Outside of CF, we advanced our Phase 2 clinical program in pain, initiated our first clinical trial of a potential medicine for alpha-1 anti-trypsin deficiency and the first clinical trial for CTX001, which we are co-developing with CRISPR Therapeutics, as a potential treatment for beta thalassemia and sickle cell disease. Our exceptional performance in 2018 included 40% growth in total product revenues and increasing cash flows. As we enter 2019, we are on track to deliver more new transformative medicines for patients thereby increasing revenues, expanding operating income and creating long-term shareholder value.

Financial Performance

Our CF medicines, KALYDECO, ORKAMBI and SYMDEKO/SYMKEVI, are transforming the lives of eligible patients around the globe and driving our financial performance.

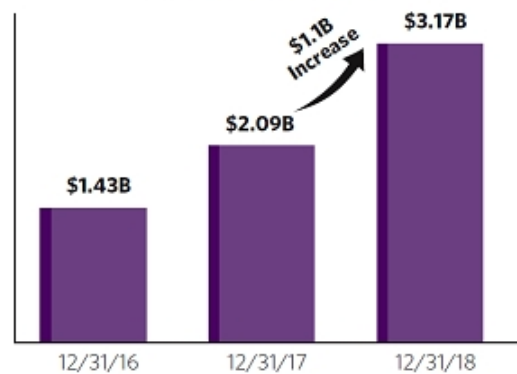
- Our CF net product revenues increased to \$3.04 billion in 2018, up 40% as compared to 2017
- We exceeded our initial CF net product revenue guidance in 2018 by \$313 million (\$3.04 billion as compared to the mid-point of our initial guidance of \$2.73 billion)
- Our GAAP net income increased to \$2.1 billion in 2018 from GAAP net income of \$263 million in 2017
- Our non-GAAP net income increased to \$1.1 billion in 2018, up \$564 million, or 114%, from 2017, driven by our increased net product revenues (a reconciliation of non-GAAP net income is provided in Appendix C)
- We increased our net cash position by approximately \$1.1 billion in 2018, to approximately \$3.2 billion
- In 2019, we expect to further increase CF product revenues by approximately 15% and to continue generating substantial cash flows
- Beyond 2019, our CF net product revenues and operating income are positioned for substantial further growth if we are successful in obtaining approval for a triple combination regimen

INCREASING CF NET PRODUCT REVENUES

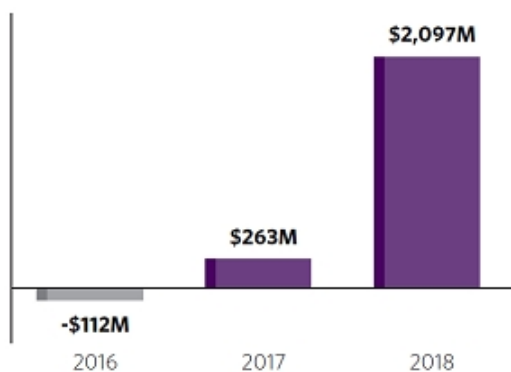


INCREASING FINANCIAL STRENGTH

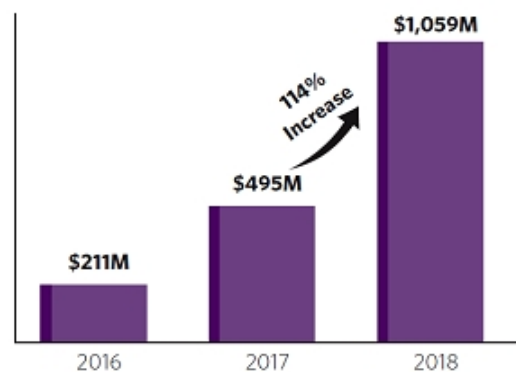
(Cash, Cash Equivalents and Marketable Securities)



GAAP NET INCOME (LOSS)

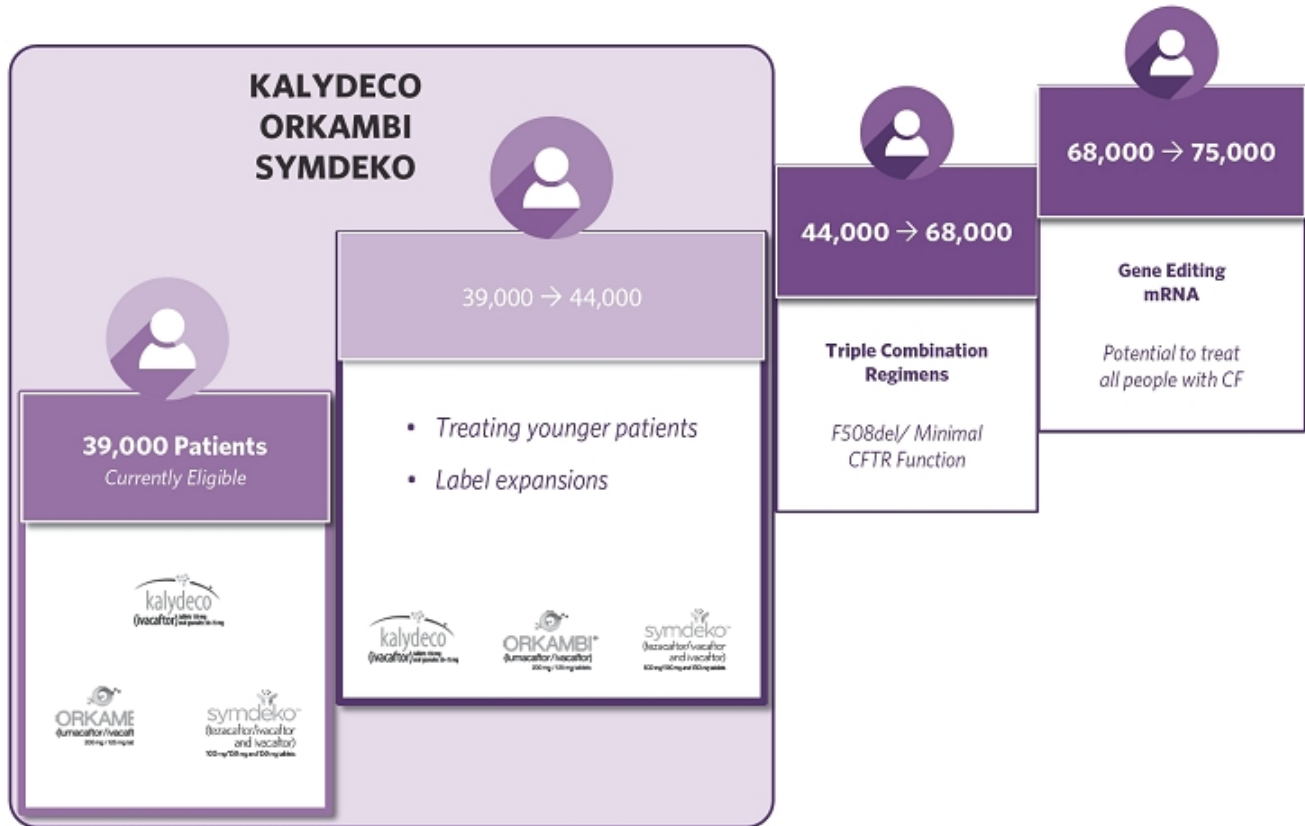


Non-GAAP NET INCOME



CF Pipeline

Advances in our pipeline and our strategic execution have moved us closer to our goal of delivering highly effective treatments to all patients with CF. In January 2012, KALYDECO was first approved to treat approximately 1,000 patients with the G551D mutation in the United States. Since then, we have followed a focused strategy of developing new medicines for CF: expanding the number of patients eligible for our medicines and seeking improved treatment options for all patients. We believe our triple combination regimens will provide the first treatment for the underlying cause of CF for patients with the F508del mutation and a mutation that results in minimal function in the defective CFTR protein (referred to as F508del/Min patients) as well as an improved treatment option (greater efficacy) for the vast majority of CF patients currently using our medicines.



CF Medicines

Since the beginning of 2018, we have:

- Obtained approval for SYMDEKO/SYMKEVI (tezacaftor in combination with ivacaftor) in the United States in early 2018 and in the European Union in late 2018
- Successfully launched SYMDEKO in the United States
- Obtained regulatory approvals and advanced clinical trials designed to provide younger children access to our CF medicines
- Entered into innovative long-term access agreements in ex-U.S markets, including Australia, Denmark, Israel, Luxembourg and Sweden

Triple Combinations Regimens

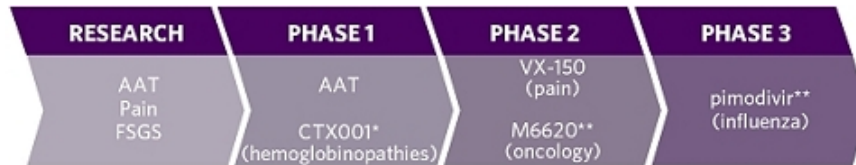
Since the beginning of 2018, we have:

- Accelerated our Phase 3 development program for triple combination regimens
- Announced positive data from two Phase 3 clinical trials evaluating the triple combination of VX-659, tezacaftor and ivacaftor in F508del/Min patients and F508del homozygous patients 12 years of age or older
- Announced positive data from two Phase 3 clinical trials evaluating the triple combination of VX-445, tezacaftor and ivacaftor in F508del/Min patients and F508del homozygous patients 12 years of age or older
- Positioned ourselves to submit for one triple combination regimen — an NDA in the United States in the third quarter of 2019 and an MAA in the European Union in the fourth quarter of 2019
- Initiated a Phase 1 clinical trial to evaluate VX-121, an additional next-generation CFTR corrector

Non-CF Pipeline

Over the last decade, we have demonstrated an ability to serially discover and develop multiple transformative medicines for serious diseases. In 2018, we and our collaborators continued our serial innovation, advancing promising non-CF programs for important diseases. Specifically, since the beginning of 2018, we have:

- Initiated a Phase 1 clinical trial for a novel drug candidate for alpha-1 antitrypsin deficiency
- Initiated Phase 1/2 clinical trials of CTX001, an investigational gene-editing treatment that we are evaluating as a potential treatment for beta-thalassemia and sickle cell disease
- Obtained clinical proof-of-concept from Phase 2 clinical trials evaluating VX-150, a selective non-opioid NaV1.8 inhibitor, as a potential treatment for pain
- Advanced our research program for focal segmental glomerulosclerosis into late-stage preclinical development
- Janssen Pharmaceuticals, our collaborator, is conducting Phase 3 development of pimodivir as a potential treatment for influenza

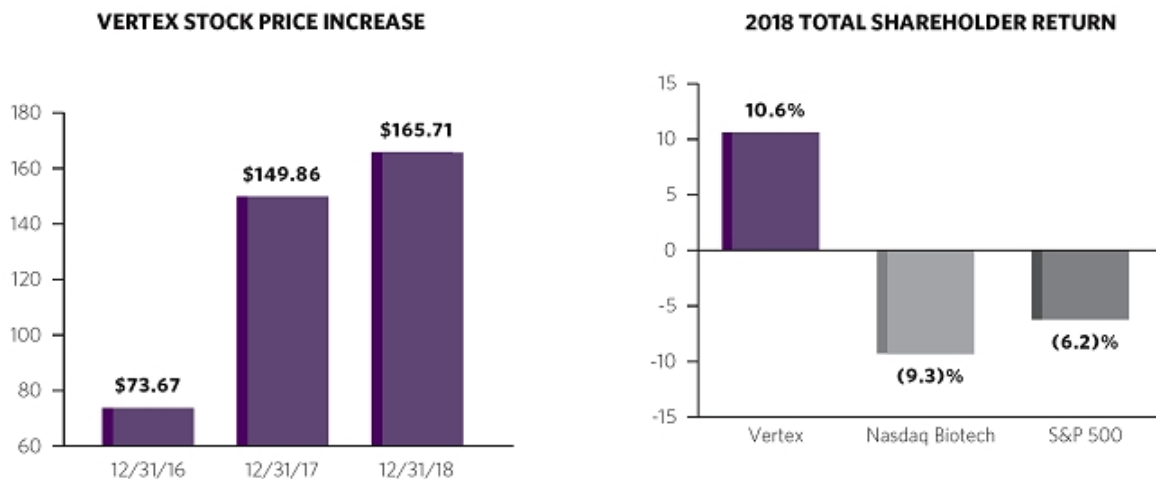


* We are co-developing CTX001 with CRISPR Therapeutics

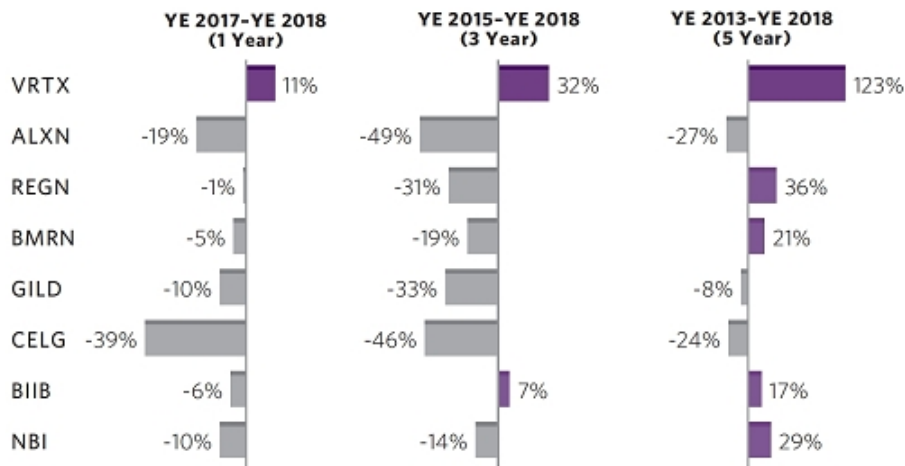
** We have outlicensed pimodivir to Janssen Pharmaceuticals and M6620 to Merck KGaA

Increased Shareholder Value

Driven by our exceptional performance and our pipeline success, our stock price increased by 11% from \$149.86 per share to \$165.71 per share in 2018. In 2018, our total shareholder return was positive 10.6% as compared to negative total shareholder returns for the Nasdaq Biotechnology Index, or NBI, and the S&P 500 index.



Although we were pleased with our performance in 2018, biotechnology companies are best measured over the long term and in comparison with their peers, as opposed to in one-year increments and in isolation. The following chart shows our total shareholder return during the 1-year, 3-year and 5-year periods ending December 31, 2018 compared to the NBI and the following members of our peer group: Alexion, Regeneron, BioMarin, Gilead, Celgene and Biogen. These peers are the companies we consider most similar to our company based on their business models (see pages 51 and 52).



2018 Compensation Decisions and Pay-for Performance

In 2018, we received support from 96% of our shareholders on our say-on-pay proposal. We believe this support is consistent with our shareholders' understanding of our business model and the long-term value we are creating. In 2018, our board of directors and management development and compensation committee, or MDCC, reviewed our compensation programs and made the following key decisions:

- We maintained the same compensation program design that we implemented in 2016, which closely ties pay with performance and has contributed to our short- and long-term successes
- The company's exceptional performance in 2018 resulted in a leading rating (a company rating of 148.5 out of a potential 150) for 2018 and annual cash bonuses near the high end of the range for 2018, commensurate with the performance described above
- Our CEO's salary has been unchanged at \$1.3 million since 2014 and is aligned with the median CEO base salary of our peer companies. We increased the base salaries of certain of our other named executive officers by approximately 7% based on a comparative analysis with our peer group
- We increased our target equity grants by \$1.0 million for our CEO and \$500,000 for our executive vice presidents based on a market analysis of our peer group
- We continued our utilization of a mix of equity that consists of performance stock units that vest solely upon achievement of rigorous performance goals, stock options that only have value if our stock price appreciates and time-vesting restricted stock units that reward stock price appreciation but also serve as a long-term retention tool

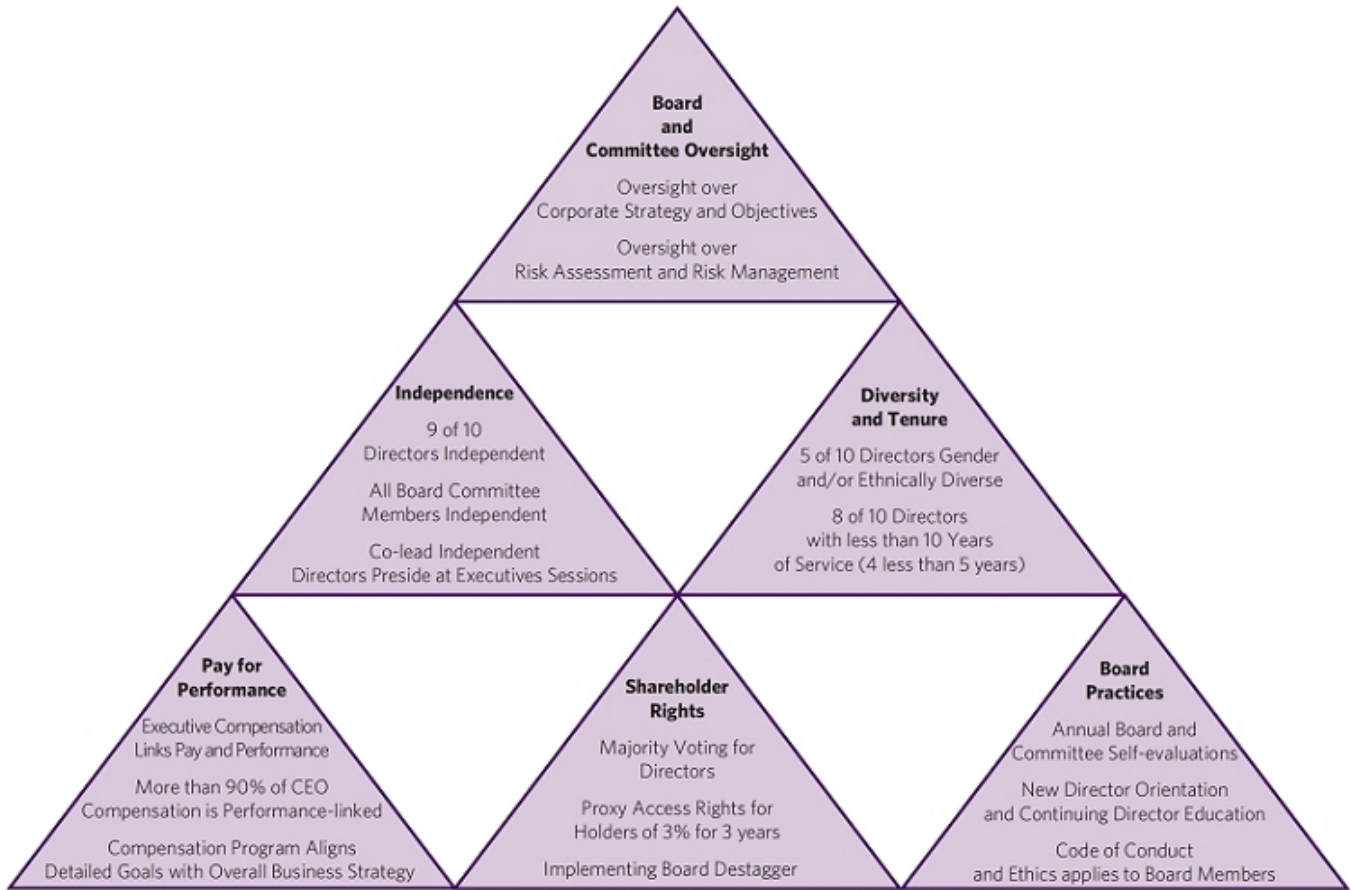
Corporate Social Responsibility

Vertex has grown into a leading global biotechnology company that serially innovates to bring transformative medicines to people with serious diseases around the world. As we've grown, so too has our commitment to corporate social responsibility. As a reflection of that commitment, Barron's included Vertex on Barron's 100 Most Sustainable Companies list.

- **Community.** In 2018, Vertex and its employees supported more than 1,100 nonprofit organizations in 13 countries through Vertex Volunteers and The Vertex Foundation's Matching Gift Program. The Vertex Foundation, a long-term source of charitable giving that was established in 2017, seeks to improve the lives of people with serious diseases and in its communities through education, innovation, and health. These efforts are part of our 10-year, \$500 million corporate giving commitment.
- **Workplace.** Our commitment to diversity and inclusion on our board and in our workforce is ingrained in our culture. Five of our ten directors are diverse on a gender and/or ethnic basis. 51% of our global workforce and 38% of our leadership are women. We have been recognized for these efforts, ranking fifth among 1,000 companies in Forbes' 2019 Best Employers for Diversity list.
- **Environment.** We are committed to sustainability, with strong local efforts reducing our environmental impact. Vertex's facilities in Boston and San Diego are LEED Gold certified, and we are on track to reduce emissions by 35% by 2020 at our Boston site (over a 2015 baseline). We are building on these efforts and working to establish long-term environmental targets.

Corporate Governance

We are committed to maintaining strong corporate governance practices that promote the long-term interests of our shareholders and strengthen board and management accountability.



Voting Matters

Item 1:

Election of Directors for One Year Term Expiring in 2020

FOR

all Nominees

Item 2:

Approval of Amendment and Restatement of 2013 Stock and Option Plan

FOR

Item 3:

Approval of Amendment to Employee Stock Purchase Plan

FOR

Item 4:

Ratify Selection of Independent Auditor for 2019

FOR

Item 5:

Approve, on an Advisory Basis, Our Named Executive Officer Compensation

FOR

Item 6:

Shareholder Proposal Regarding Report Relating to Drug Pricing and Executive Compensation

AGAINST

Item 7:

Shareholder Proposal Regarding Lobbying Report

AGAINST

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PROXY STATEMENT

This proxy statement, with the enclosed proxy card, is being furnished to shareholders of Vertex Pharmaceuticals Incorporated in connection with the solicitation by our board of directors of proxies to be voted at our 2019 annual meeting of shareholders and at any postponements or adjournments thereof. The annual meeting will be held on Wednesday, June 5, 2019, at 9:30 a.m. at our headquarters, which are located at 50 Northern Avenue, Boston, Massachusetts.

This proxy statement and the enclosed proxy card are first being mailed or otherwise furnished to our shareholders on or about April 29, 2019. Our 2018 Annual Report on Form 10-K and other materials regarding our company are being mailed to the shareholders with this proxy statement, but are not part of this proxy statement.

Item 1 Election of Directors

Our board of directors has nominated Sangeeta Bhatia, Lloyd Carney, Terrence Kearney, Yuchun Lee, Jeffrey Leiden, and Bruce Sachs for election at our 2019 annual meeting of shareholders to hold office until our 2020 annual meeting of shareholders.

Our board of directors is our company's ultimate decision-making body, except with respect to those matters reserved to the shareholders. Our board selects our senior management team, which in turn is responsible for the day-to-day operations of our company. Our board acts as an advisor and counselor to senior management and oversees its performance.

In 2017, we amended our charter and by-laws to phase out our staggered board. Six members of our board of directors will be up for election at our 2019 annual meeting of shareholders and all of our board members will be up for election at our 2020 annual meeting of shareholders. Sangeeta Bhatia, Lloyd Carney, Terrence Kearney, Yuchun Lee, Jeffrey Leiden, and Bruce Sachs have been nominated by our board for election at the 2019 annual meeting of shareholders for one-year terms that will expire at the 2020 annual meeting of shareholders. Elaine Ullian, a current director, is not standing for re-election at the 2019 annual meeting of shareholders. Each of the nominees has agreed to be named in this proxy statement and to serve if elected. We believe that all of the nominees will be able and willing to serve if elected. However, if any nominee should become unable or unwilling to serve for any reason, proxies may be voted for another person nominated as a substitute by our board, or our board may reduce the number of directors.

Board Structure and Composition

The corporate governance and nominating committee of our board of directors is responsible for recommending the composition and structure of our board and for developing criteria for board membership. This committee regularly reviews director competencies, qualities and experiences, with the goal of ensuring that our board is comprised of a team of directors who function collegially and effectively and who are able to apply their experience toward meaningful contributions to general corporate strategy and oversight of corporate performance, risk management, organizational development and succession planning.

Our by-laws provide that the size of our board may range between three and eleven members. We currently have ten members on our board and expect to have nine members of our board following the 2019 annual meeting of shareholders. Our corporate governance and nominating committee may seek additional director candidates who meet the criteria below in order to complement the qualifications and experience of our existing board members. Our corporate governance and nominating committee may engage a search firm to recommend candidates who satisfy the criteria.

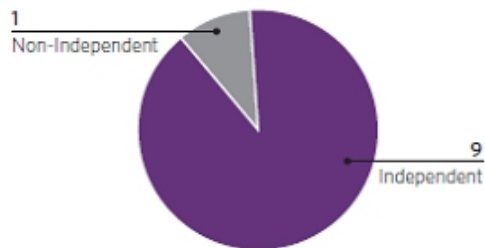
Director Criteria, Qualifications and Experience; Diversity

The corporate governance and nominating committee seeks to recommend for nomination directors of stature who have a substantive knowledge of our business and industry or who can bring to the board specific and valuable strategic or management capabilities acquired in other industries. The committee expects each of our directors to have proven leadership, sound judgment, integrity and a commitment to the success of our company. It also seeks personal qualities that foster a respectful environment in which our directors listen to one another and hold engaged and constructive discussions. These goals for our board composition presuppose a diverse range of viewpoints, experiences and specific expertise. The corporate governance and nominating committee considers a nominee's personal characteristics and business experience relative to those of our existing board members, including the type of prior management experience, levels of expertise relevant to our business and its growth stage, prior board service, reputation in the business community, personal characteristics such as gender and race, and other factors that the committee believes to be important. When considering whether or not to re-nominate a director for board service, the corporate governance and nominating committee also considers whether the potential nominee has served as a member of the board for more than 20 years and whether the potential nominee is over 72 years of age. Our commitment to diversity is demonstrated by the composition of our board, which includes three women and three ethnically diverse individuals.

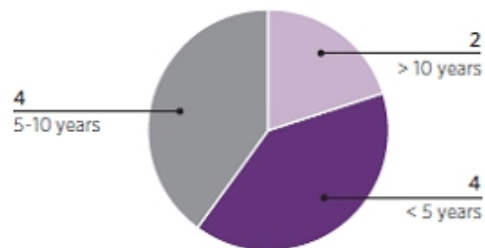
The follow table and charts provide information regarding our director nominees, each of whom is a continuing director, and Elaine Ullian, who is not seeking reelection at our 2019 annual meeting of shareholders.

	Bhatia	Carney	Garber	Kearney	Lee	Leiden	McGlynn	Sachs	Ullian	Young
Leadership Experience. We believe that directors who have held significant leadership positions over extended periods of time provide our company with special insights.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Industry Knowledge. We seek directors with substantive knowledge of the healthcare and biotechnology industries to successfully advise and oversee the strategic development and direction of our company.	✓		✓	✓		✓	✓		✓	✓
Financial Expertise. We believe that an understanding of finance is important for members of our board, and our budgeting processes and financial and strategic transactions require our directors to be financially knowledgeable.		✓	✓	✓	✓	✓	✓	✓	✓	✓
International Perspective. We have significant operations outside the United States and value directors with experience in the operation of complex multinational organizations.		✓	✓	✓	✓	✓	✓	✓		✓
Public Policy and Regulation. We operate in a highly-regulated industry and seek directors who have experience in public policy and the regulation of medicines.			✓			✓	✓		✓	
Academic Experience or Technological Background. As a biotechnology company that seeks to develop transformative medicines for patients with serious diseases, we look for directors with backgrounds in academia, science and technology and, in particular, the research and development of pharmaceutical products.	✓	✓	✓		✓	✓		✓		✓
Commitment to Company Values and Goals. We seek directors who are committed to our company and its values and goals and who value the contributions that can be provided by individuals who believe in our company and its prospects for success.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Independence	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
Age	50	57	63	64	53	63	59	59	71	74
Tenure on Board	3	0	1	7	6	9	7	20	21	4
Gender	F	M	M	M	M	M	F	M	F	M
Ethnic Diversity	✓	✓			✓					

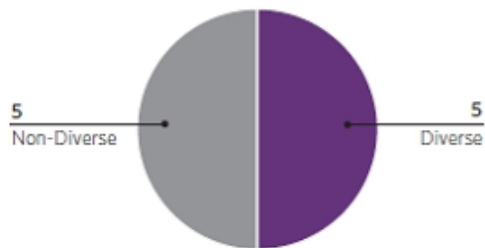
DIRECTOR INDEPENDENCE



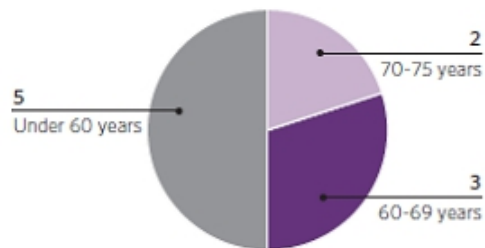
DIRECTOR TENURE



OVERALL BOARD DIVERSITY



DIRECTOR AGE



Shareholder-Recommended Director Candidates

The corporate governance and nominating committee will consider director candidates recommended by shareholders using the same criteria for director selection described above under *Director Criteria, Qualifications and Experience; Diversity*. Shareholders recommending candidates for consideration should submit any pertinent information regarding the candidate, including biographical information and a statement by the proposed candidate that he or she is willing to serve if nominated and elected, by mail to our corporate secretary at our offices at 50 Northern Avenue, Boston, Massachusetts 02210. If a shareholder wishes to nominate a candidate to be considered for election as a director at the 2020 annual meeting of shareholders using the procedures set forth in our by-laws, the shareholder must follow the procedures described in *Other Information—Shareholder Proposals for the 2020 Annual Meeting and Nominations for Director* on page 80 of this proxy statement.

Our by-laws provide for proxy access, a process that allows qualifying shareholders to nominate a director candidate for consideration at an annual meeting of shareholders and have such candidate be included in our proxy materials for the applicable shareholder meeting. The key elements of our proxy access by-law are as follows:

Provision	Requirement
Ownership Threshold and Holding Period	Available to shareholders owning 3% or more of our shares continuously for at least 3 years.
Number of Board Seats	Total number of proxy access nominees is capped at 20% of the existing board seats (or the closest whole number below 20%), with a minimum of two.
Aggregation Limits	20-shareholder limit on the number of shareholders who can aggregate their shares to satisfy the 3% ownership requirement.
Proxy Fights	Proxy access nominees will not be included in the proxy materials if we receive notice that a shareholder intends to nominate a candidate who is not to be included in our proxy materials.
Future Ineligibility	Proxy access nominees who fail to receive at least 10% of the votes cast “for” such nominee may not be re-nominated as a proxy access nominee for the next two annual meetings.

The above table is only a summary of our proxy access by-law and is qualified in its entirety by our by-laws, which are set forth in Exhibit 3.1 of a Quarterly Report on Form 10-Q that we filed with the SEC on July 28, 2017. A shareholder who wishes to nominate a proxy access nominee to be considered for election as a director at the 2020 annual meeting of shareholders must follow the procedures set forth in our by-laws as well as those described in *Other Information—Shareholder Proposals for the 2020 Annual Meeting and Nominations for Director* on page 80 of this proxy statement.

Majority Vote Standard

Our by-laws provide for a majority vote standard for uncontested elections of our directors. Under our by-laws, director nominees in an uncontested election who receive more votes cast “for” such director nominee than “against” such director nominee are elected. Our board’s policy is that any nominee for director in an uncontested election who receives a greater number of votes “against” than votes “for” the nominee’s election shall promptly tender his or her resignation to the chair of our board following certification of the shareholder vote. Our corporate governance and nominating committee will promptly consider the tendered resignation. Based on all factors it deems in its discretion to be relevant, the committee will recommend that our board either accept or reject the resignation and may recommend that the board adopt measures designed to address any issues perceived to underlie the election results. Our board will then act on the corporate governance and nominating committee’s recommendation. We will promptly disclose our board’s decision, including, if applicable, the reasons for rejecting the tendered resignation. Any director whose resignation is being considered under this policy will not participate in the corporate governance and nominating committee or board considerations, recommendations or actions with respect to the tendered resignation.

Director Nominees

Present Terms Expiring in 2019 and Proposed Terms to Expire in 2020

Sangeeta Bhatia, M.D., Ph.D.

Age: 50
Director Since: 2015

Committee Assignments:

- Chair – Science and Technology Committee
- Member – Corporate Governance and Nominating Committee

Dr. Bhatia is a professor at the Massachusetts Institute of Technology, or MIT, where she currently serves as the John J. and Dorothy Wilson Professor of Health Sciences & Technology/Electrical Engineering & Computer Science. For the 2018 year, Dr. Bhatia was on sabbatical from MIT while she served as a co-founder of Glympse Bio, a private company focused on developing in vivo sensing technology dedicated to disease monitoring. Prior to joining MIT in 2005, Dr. Bhatia was a professor of bioengineering and medicine at the University of California at San Diego from 1998 through 2005. Dr. Bhatia also is an investigator for the Howard Hughes Medical Institute, a member of the Department of Medicine at Brigham and Women's Hospital, a member of the Broad Institute and a member of the Koch Institute for Integrative Cancer Research. Dr. Bhatia holds a Sc.B. in biomedical engineering from Brown University, an S.M. and Ph.D. in Mechanical Engineering from MIT and an M.D. from Harvard Medical School.

Skills and Qualifications: Dr. Bhatia is a leading academic scientist and medical researcher. Her extensive experience in the field of biomedical engineering and in-depth understanding on the use of advanced technologies in medical research provides valuable insights to our board of directors, including with respect to our key research and development initiatives.

Lloyd Carney

Age: 57
Director Since: 2019

Committee Assignments:

- Expected to Join – Audit and Finance Committee

Mr. Carney is the Chairman and Chief Executive Officer of ChaSerg Technology Acquisition Corp., a technology acquisition company. He was the Chief Executive Officer of Brocade Communications Systems Inc., or Brocade, a global supplier of networking hardware and software, from January 2013 until 2017, when it was acquired by Broadcom. Prior to Brocade, he served as Chief Executive Officer of Xsigo Systems, a cloud-based infrastructure solutions provider, until its acquisition by Oracle. He has also served as the Chief Executive Officer and Chairman of Micromuse Inc., a software solutions provider for business and service assurance, until its acquisition by IBM. Earlier in his career he had held senior leadership roles at Juniper Networks, Inc., Nortel Networks Inc., and Bay Networks, Inc. He currently sits on the board of directors at Visa Inc. and Nuance Communications, Inc. He holds a Bachelor of Science degree in Electrical Engineering Technology from Wentworth Institute, a Master of Science degree in Applied Business Management from Lesley College, and an Honorary Doctorate degree in Engineering from Wentworth Institute.

Skills and Qualifications: Mr. Carney brings strong business judgment, honed through his time as a senior executive and board member of multiple global technology companies, to our board of directors. Mr. Carney has extensive corporate leadership experience, including service as the CEO of several technology companies, as well as financial expertise.

Terrence Kearney

Age: 64
Director Since: 2011

Committee Assignments:

- Chair – Audit and Finance Committee
- Member – Management Development and Compensation Committee

Mr. Kearney served as the Chief Operating Officer of Hospira, Inc., a specialty pharmaceutical and medication delivery company, from April 2006 to January 2011. From April 2004 to April 2006, he served as Hospira's Senior Vice President, Finance, and Chief Financial Officer, and he served as Acting Chief Financial Officer through August 2006. Mr. Kearney served as Vice President and Treasurer of Abbott Laboratories from 2001 to April 2004. From 1996 to 2001, Mr. Kearney was Divisional Vice President and Controller for Abbott's International Division. Mr. Kearney serves as a member of the Board of Directors at Acceleron Pharma Inc., a biopharmaceutical company. He served as a member of the Board of Directors of Innovia (formerly known as Theravance, Inc.), a royalty management company, from October 2014 through April 2016, and as member of the Board of Directors of AveXis, Inc., a gene therapy company, from January 2016 until its acquisition in May 2018. Mr. Kearney has been a member of the Board of Directors of Levo Therapeutics, Inc., a biotechnology company focused on developing treatments for Prader-Willi Syndrome, since 2018. He received his B.S. in biology from the University of Illinois and his M.B.A. from the University of Denver.

Skills and Qualifications: Mr. Kearney's corporate leadership experience, industry knowledge and financial expertise make him a valuable contributor to our board of directors. He has a practical perspective on the management of global pharmaceutical operations, including commercial, manufacturing and research and development activities, and financial management strategies. He is an "audit committee financial expert" with particular experience in matters faced by the audit committee of a company with pharmaceutical product revenues and related expenses.

Yuchun Lee

Age: 53
Director Since: 2012

Committee Assignments:

- Member – Audit and Finance Committee
- Member – Science and Technology Committee

Mr. Lee serves as an Executive in Residence and Partner of General Catalyst Partners, a venture capital firm, positions he has held since April of 2013. Mr. Lee also serves as the Chief Executive Officer of Allego, Inc. and is Executive Chairman of Clarabridge, Inc. Mr. Lee was the Vice President of IBM's Enterprise Marketing Management Group from November 2010 through January 2013. Mr. Lee co-founded Unica Corporation, a provider of software and services used to automate marketing processes, in 1992, and was Unica's President and/or Chief Executive Officer from 1992 through November 2010, when Unica was acquired by IBM. From 1989 to 1992, Mr. Lee was a senior consultant at Digital Equipment Corporation, a supplier of general computing technology and consulting services. Mr. Lee holds a B.S. and an M.S. in electrical engineering and computer science from the Massachusetts Institute of Technology and an M.B.A. from Babson College.

Skills and Qualifications: Mr. Lee's expertise in marketing processes and customer engagement and business and financial experience make him a valuable contributor to our board of directors. Mr. Lee is an innovator who founded and managed the growth of a successful technology company and gained further leadership experience while serving as an executive at IBM. Mr. Lee's experiences outside of the biopharmaceutical sector provide the board with an important perspective on the issues facing the company.

Jeffrey Leiden, M.D., Ph.D.

Age: 63
Director Since: 2009

Committee Assignments:

- Chairman, Chief Executive Officer and President

Dr. Leiden is our Chairman, Chief Executive Officer and President. He has held the positions of Chief Executive Officer and President since February 2012 after joining us as CEO Designee in December 2011. He has been a member of our Board of Directors since July 2009, the Chairman of our Board of Directors since May 2012, and served as our lead independent director from October 2010 through December 2011. Dr. Leiden was a Managing Director at Clarus Ventures, a life sciences venture capital firm, from 2006 through January 2012. Dr. Leiden was President and Chief Operating Officer of Abbott Laboratories, Pharmaceuticals Products Group, and a member of the Board of Directors of Abbott Laboratories from 2001 to 2006. From 1987 to 2000, Dr. Leiden held several academic appointments, including the Rawson Professor of Medicine and Pathology and Chief of Cardiology and Director of the Cardiovascular Research Institute at the University of Chicago, the Elkan R. Blout Professor of Biological Sciences at the Harvard School of Public Health, and Professor of Medicine at Harvard Medical School. He is an elected member of both the American Academy of Arts and Sciences and the Institute of Medicine of the National Academy of Sciences. Dr. Leiden serves as a director of Quest Diagnostics Inc., a medical diagnostics company, and Massachusetts Mutual Life Insurance Company, an insurance company. Dr. Leiden was a director and the non-executive Vice Chairman of the board of Shire plc, a specialty biopharmaceutical company, from 2006 to January 2012. Dr. Leiden received his M.D., Ph.D. and B.A. degrees from the University of Chicago.

Skills and Qualifications: Dr. Leiden possesses strong leadership qualities, demonstrated through his service as a senior executive in the pharmaceutical industry and as a life sciences venture capitalist, and has extensive knowledge of the science underlying drug discovery and development through his experiences as a distinguished physician, scientist and teacher. As our CEO and as a former senior executive at Abbott Laboratories he brings a global perspective to our business and public policy issues facing our company. He also provides our board of directors with in-depth knowledge of our company through the day-to-day leadership of our executives.

Bruce Sachs

Age: 59
Director Since: 1998
Co-lead Independent Director

Committee Assignments:

- Chair – Management Development and Compensation Committee
- Member – Audit and Finance Committee

Mr. Sachs is a General Partner at Charles River Ventures, a venture capital firm he joined in 1999. From 1998 to 1999, he served as Executive Vice President and General Manager of Ascend Communications, Inc. From 1997 until 1998, Mr. Sachs served as President and Chief Executive Officer of Stratus Computer, Inc. From 1995 to 1997, he served as Executive Vice President and General Manager of the Internet Telecom Business Group at Bay Networks, Inc. From 1993 to 1995, he served as President and Chief Executive Officer of Xylogics, Inc. Mr. Sachs holds a B.S.E.E. in electrical engineering from Bucknell University, an M.E.E. in electrical engineering from Cornell University, and an M.B.A. from Northeastern University.

Skills and Qualifications: Mr. Sachs brings strong business judgment, honed through his experience developing business strategy as a senior executive and in venture capital, to our board of directors. Mr. Sachs has a deep understanding of our business and the global business environment along with expertise in the technology that supports our infrastructure and operations. In addition, Mr. Sachs has extensive business leadership experience, including service as a CEO at a technology company, as well as financial expertise.

Board Recommendation

In each of the director nominee and continuing director biographies, we highlight the specific experience, qualifications, attributes, and skills that led the board of directors to conclude that the director nominee or continuing director should serve on our board at this time.

Our board of directors recommends that shareholders vote **FOR** each of the nominees.

Continuing Directors — Terms to Expire in 2020

Alan Garber, M.D., Ph.D.

Age: 63
Director Since: 2017

Committee Assignments:

- Member – Science and Technology Committee

Dr. Garber is Provost of Harvard University and the Mallinckrodt Professor of Health Care Policy at Harvard Medical School, a Professor of Economics in the Faculty of Arts and Sciences, Professor of Public Policy in the Harvard Kennedy School of Government, and Professor in the Department of Health Policy and Management in the Harvard T.H. Chan School of Public Health. From 1998 until he joined Harvard in 2011, he was the Henry J. Kaiser Jr. Professor, a Professor of Medicine, and a Professor (by courtesy) of Economics, Health Research and Policy, and of Economics in the Graduate School of Business at Stanford University. Dr. Garber is a member of the National Academy of Medicine, the American Society of Clinical Investigation, the Association of American Physicians, and the American Academy for Arts and Sciences. He is a Fellow of the American Association for the Advancement of Science, the American College of Physicians, and the Royal College of Physicians. Dr. Garber is also a Research Associate with the National Bureau of Economic Research and served as founding Director of its Health Care Program for nineteen years. He also has served as a member of the National Advisory Council on Aging at the National Institutes of Health, as a member of the Board of Health Advisers of the Congressional Budget Office and as Chair of the Medicare Evidence Development and Coverage Advisory Committee at the Centers for Medicare and Medicaid Services. Dr. Garber has been a member of the Board of Directors of Exelixis, Inc., a biopharmaceutical company, since 2005. Dr. Garber holds an A.B. summa cum laude, an A.M. and a Ph.D., all in Economics, from Harvard University, and an M.D. with research honors from Stanford University.

Skills and Qualifications: Dr. Garber brings extensive leadership experience and knowledge regarding science, medicine and the healthcare industry and in particular healthcare economics to our board of directors. The insights he has developed as an expert in health care policy and as an advisor to government agencies provides our board important perspectives on the issues facing our company.

Margaret McGlynn

Age: 59
Director Since: 2011

Committee Assignments:

- Member – Science and Technology Committee
- Member – Corporate Governance and Nominating Committee

Ms. McGlynn retired from Merck & Co. in 2009, where she served as President, Vaccines and Infectious Diseases and as President, Hospital and Specialty Products. During her 26 year career at Merck, she also held various leadership roles in the U.S. and globally in marketing, sales, managed care and business development. Following her retirement, Ms. McGlynn served as the President and Chief Executive Officer of the International AIDS Vaccine Initiative, a global not-for-profit organization whose mission is to ensure the development of safe, effective and accessible HIV vaccines for use throughout the world, from 2011 until 2015. Ms. McGlynn serves as a member of the Board of Directors for Air Products and Chemicals, Inc., a company specializing in gases and chemicals for industrial uses, and Amicus Therapeutics, Inc., a biopharmaceutical company. She is also a member of the National Industrial Advisory Committee at the University at Buffalo School of Pharmacy and Pharmaceutical Sciences. Ms. McGlynn holds a B.S. in Pharmacy and an M.B.A. in Marketing from the State University of New York at Buffalo.

Skills and Qualifications: Ms. McGlynn's leadership experience and industry knowledge make her a valuable contributor to our board of directors. Her service as an executive at Merck and her service on the board of Amicus Therapeutics and the board and audit committee of Air Products and Chemicals, Inc. give her a practical understanding of organizational practices valuable to a company at our stage of growth. Her experience in the development and commercialization of products across several therapeutic areas, and in her board roles and advocacy in rare diseases, provides her with a valuable understanding of the scientific, public policy, regulatory and marketplace issues we face in the drug development and commercialization process.

William Young

Age: 74
Director Since: 2014

Committee Assignments:

- Member – Corporate Governance and Nominating Committee
- Member – Management Development and Compensation Committee

Mr. Young is a Senior Advisor with Blackstone Life Sciences (which acquired Clarus Ventures in 2018). Mr. Young joined Clarus Ventures, a life sciences venture capital firm, in 2010. Prior to Clarus Ventures, Mr. Young served from 1999 until June 2009 as the Chairman and Chief Executive Officer of Monogram Biosciences, Inc., a biotechnology company acquired by Laboratory Corporation of America in June 2009. From 1980 to 1999, Mr. Young was employed at Genentech, Inc. in positions of increasing responsibility, including as Chief Operating Officer from 1997 to 1999, where he was responsible for all product development, manufacturing and commercial functions. Prior to joining Genentech, Mr. Young was with Eli Lilly & Co. for 14 years. Mr. Young currently serves as the Chairman of the Board of Directors of NanoString Technologies, Inc., and as a member of the Board of Directors of Theravance BioPharma Inc. Mr. Young retired from BioMarin Pharmaceutical Inc.'s Board of Directors in November 2015 and as Biogen's Chairman of the Board in June 2014. Mr. Young holds a B.S. in Chemical Engineering from Purdue University, an M.B.A. from Indiana University and an Honorary Doctorate in Engineering from Purdue University. Mr. Young was elected to the National Academy of Engineering in 1993 for his contributions to biotechnology.

Skills and Qualifications: Mr. Young is a valuable contributor to our board of directors due to the in-depth knowledge of the biotechnology industry that he acquired through his extensive experience as both a CEO and board member at numerous pharmaceutical and biotechnology organizations and as a venture capitalist focused on the life sciences industry. Mr. Young's strong leadership qualities, global industry knowledge and financial expertise provide him with the background to work collaboratively with both management and fellow board members in order to address issues facing our company.

CORPORATE GOVERNANCE AND RISK MANAGEMENT

We are committed to good corporate governance and integrity in our business dealings. Our governance practices are documented in our Statement of Corporate Governance Principles, which addresses the role and composition of our board of directors and the functioning of the board and its committees. You can find our governance documents, including our Statement of Corporate Governance Principles, charters for each committee of the board and our Code of Conduct, on our website www.vrtx.com under “Investors—Corporate Governance—Governance Documents.”

Independence, Chair and Co-lead Independent Directors

Our board of directors has determined that nine of our ten directors qualify as “independent” under the definition of that term adopted by The Nasdaq Stock Market LLC, or Nasdaq. Our independent directors are Dr. Bhatia, Mr. Carney, Dr. Garber, Mr. Kearney, Mr. Lee, Ms. McGlynn, Mr. Sachs and Mr. Young and Ms. Ullian, who is not seeking re-election at our 2019 annual meeting of shareholders. Our independent directors meet in executive session without management at each regularly scheduled board meeting.

Dr. Leiden, our president and chief executive officer, serves as the chairman of our board. Our employment agreement with Dr. Leiden provides that he will serve as the chairman of our board through March 31, 2020. In addition, we have two co-lead independent directors who are elected by the independent directors. Each of the board committees is chaired by one of our independent directors.

Our board believes that strong, independent board leadership is a critical aspect of effective corporate governance, and our corporate governance principles require that if the chair is not an independent director, then the independent directors elect a lead independent director. Since December 2011, Mr. Sachs and Ms. Ullian have served as our co-lead independent directors. We believe this structure provides our board independent leadership, while providing the benefit of having our chief executive officer, the individual with primary responsibility for managing our day-to-day operations, chair regular board meetings as we discuss key business and strategic issues. Combined with the co-lead independent directors and experienced and independent committee chairs, this structure provides strong independent oversight of management.

Our co-lead independent directors’ responsibilities include:

- calling and leading regular and special meetings of the independent directors;
- serving as a liaison between our executive officers and the independent directors;
- reviewing the planned dates for regularly scheduled board meetings and the primary agenda items for each meeting; and
- reviewing with the chair of each board committee agenda items that fall within the scope of the responsibilities of that committee.

Board Committees

Our board of directors has established various committees, each of which has a written charter, to assist in discharging its duties: the audit and finance committee, or audit committee, the corporate governance and nominating committee, or CGNC, the MDCC and the science and technology committee, or S&T committee. Each member of the audit committee, CGNC and MDCC is an independent director as that term is defined by the SEC and Nasdaq. The primary responsibilities of each of the committees are set forth below, and the committee memberships are provided in the table appearing on page 21 of this proxy statement.

Each of the committees has the authority, as its members deem appropriate, to engage legal counsel or other experts or consultants in order to assist the committee in carrying out its responsibilities.

Risk Management

Our board of directors discharges its overall responsibility to oversee risk management with a focus on our most significant risks. We face considerable risk related to the commercialization of our approved products, including regulatory risk with respect to our promotional activities and competition from approved drugs and investigational drug candidates that may have product profiles superior to our approved products. We continue to invest significant resources in research programs and clinical development programs as part of our strategy to develop transformative medicines for patients with serious diseases. With respect to each of our drug development and commercialization programs, we face considerable risk that the program will not ultimately result in a commercially successful pharmaceutical product. Our board and its committees monitor and manage the strategic, compliance and operational risks related to our medicines and our research and development programs through regular board and committee discussions that include presentations to the board and its committees by our executive officers as well as during in-depth short- and long-term strategic reviews held at least annually.

For certain specific risk types, our board has delegated oversight responsibility to board committees as follows:

- Our audit committee oversees our policies and programs related to our financial and accounting systems, accounting policies and investment strategies, internal audit function and cybersecurity. The audit and finance committee also is responsible for addressing risks arising from related party transactions.
- Our MDCC oversees risks associated with our compensation policies, management resources and structure, and management development and selection processes.
- Our CGNC oversees risks related to the company's governance structure.
- Our S&T committee oversees risks related to our research and development investments.
- Our MDCC and corporate governance and nominating committee work together to oversee CEO succession planning.

Code of Conduct

We have adopted a Code of Conduct that applies to all of our directors and employees, including our chief executive officer and chief financial and accounting officers. Our Code of Conduct is available on our website www.vrtx.com under "Investors—Corporate Governance—Governance Documents." Disclosure regarding any amendments to, or waivers from, provisions of the Code of Conduct that apply to our directors or principal executive, financial or accounting officers will be posted on our website or included in a Current Report on Form 8-K within four business days following the date of the amendment or waiver.

Board Attendance, Committee Meetings and Committee Membership

The following table sets information regarding the members of our board of directors. We expect that in June 2019, (i) Lloyd Carney, who joined our board in February 2019, will join the audit and finance committee, and (ii) we will make additional changes to our committee memberships resulting from Elaine Ullian's retirement from our board of directors.

Director ⁽¹⁾	Independence	Board	Audit Committee	CGNC	MDCC	S&T Committee	2018 Attendance at Meetings ⁽²⁾
Sangeeta N. Bhatia	✓	■		■		■	93%
Lloyd Carney	✓	■					n/a
Alan Garber	✓	■				■	100%
Terrence C. Kearney	✓	■	■		■		100%
Yuchun Lee	✓	■	■			■	95%
Jeffrey M. Leiden		■					100%
Margaret G. McGlynn	✓	■		■		■	100%
Bruce I. Sachs	✓	★	■		■		100%
Elaine S. Ullian	✓	★		■	■		100%
William D. Young	✓	■		■	■		89%
2018 Meetings		7	9	5	7	3	

■ = Member

■ = Chair

★ = Co-lead

(1) We invite each of our directors to attend shareholder meetings, and our chairman and two co-lead independent directors attended our 2018 annual shareholders meeting.

(2) Includes meetings of the board of directors and meetings of each committee of the board while the director served on such committee. Mr. Carney joined our board in February 2019.

Audit and Finance Committee

The primary purposes of the audit committee are to:

- appoint, oversee and, if necessary, replace, our independent registered public accounting firm;
- assist our board of directors in fulfilling its responsibility for oversight of our accounting and financial reporting processes;
- review and make recommendations to our board concerning our financial structure and financing strategy;
- oversee our policies and programs related to our financial and accounting systems and cybersecurity programs; and
- oversee our internal audit function.

Our independent registered public accounting firm reports directly to, and is held accountable by, our audit committee in connection with the audit of our annual financial statements and related services.

Mr. Kearney, the chair of our audit committee, is our “audit committee financial expert” as that term is defined in applicable regulations of the SEC. In addition, each of the other members of the audit committee is qualified to serve as an audit committee financial expert under the SEC’s rules.

The report of the audit committee appears on page 39 of this proxy statement.

Our audit committee reviews and, if appropriate, recommends for approval or ratification by our board, all transactions with related persons that are required to be disclosed by us pursuant to Item 404(a) of Regulation S-K promulgated by the SEC, except for transactions, if any, related to the employment of executive officers, which would be recommended for approval by the MDCC. Our policies and procedures with respect to transactions with related persons are governed by our written Related Party Transaction Policy. Pursuant to this policy, related party transactions include transactions, arrangements or relationships in which our company is a participant, the amount involved exceeds \$120,000, and one of our executive officers, directors, director nominees or 5% shareholders or their immediate family members, whom we refer to as related persons, has a direct or indirect material interest, except where disclosure of such transaction would not be required pursuant to Item 404(a) of Regulation S-K. As appropriate for the circumstances, our audit committee will review and consider the related person’s interest in the related party transaction and such other factors as it deems appropriate. In 2018, we had one transaction disclosable pursuant to Item 404(a) of Regulation S-K, pursuant to which we obtained software services from Allego Inc., where Yuchun Lee, a member of our board of directors, serves as CEO. The transaction involved no payments directly to Mr. Lee and payments of approximately \$123,000 to Allego, Inc. The audit committee approved the transaction as the transactions were entered into at arm’s length and comparable to those that would be provided to other unrelated entities in the marketplace.

Corporate Governance and Nominating Committee

The CGNC:

- assists our board of directors in developing and implementing our corporate governance principles;
- recommends the size and composition of our board and its committees;
- develops and recommends to our board an annual self-evaluation process to assess the effectiveness of our board and oversees this process;
- reviews and recommends, with the advice of the MDCC, non-employee director compensation on an annual basis;
- identifies qualified individuals to become members of our board;
- recommends director nominations to the full board; and
- assists the board in external recruiting and evaluating potential candidates for the CEO position.

Management Development and Compensation Committee

The primary purposes of the MDCC are to oversee the discharge of our board of directors’ responsibilities relating to:

- compensating and developing our executives (and assisting the corporate governance and nominating committee with respect to director compensation);
- recommending to our board (i) ratings for the company performance against company goals for the prior year and (ii) goals and weighting of goals for the next year;
- assisting the board in evaluating potential internal candidates for the CEO position; and
- reviewing and approving our benefit and equity compensation plans.

The MDCC has the authority to delegate any of its responsibilities to individual members to the extent deemed appropriate by the MDCC in its sole discretion, but subject always to the general oversight of the board.

See *Compensation Discussion and Analysis—Detailed Discussion* below for a discussion of the MDCC’s role in overseeing executive compensation.

The report of the MDCC appears on page 64 of this proxy statement.

Science and Technology Committee

Our S&T committee discharges our board of directors’ responsibilities relating to the oversight of our investment in pharmaceutical research and development. In furtherance of that oversight function, the S&T committee:

- reviews and assesses our current and planned research and development programs and technology initiatives from a scientific perspective;
- assesses the capabilities of our key scientific personnel and the depth and breadth of our scientific resources; and
- provides strategic advice to our board regarding emerging science and technology issues and trends.

Compensation Committee Interlocks and Insider Participation

Mr. Kearney, Mr. Sachs, Ms. Ullian and Mr. Young served on the MDCC during 2018. Each member of the MDCC was an independent director while serving on the MDCC. No member of our board of directors who was a member of our MDCC at any time during 2018 has ever been one of our employees or officers. No member of our board who was a member of our MDCC at any time during 2018 has ever been a party to a transaction required to be disclosed pursuant to Item 404(a) of Regulation S-K prior to becoming a member of our MDCC. During 2018, none of our executive officers served as a member of the board of directors or compensation committee of the board of directors, or performed the equivalent functions, of any entity that has one or more executive officers serving as a member of our board or the MDCC.

Public Policy and Engagement

The biotechnology industry is a highly-regulated industry, and it is important to our business, our patients and our shareholders that we engage compliantly on public policy issues. This includes providing advocacy for healthcare innovation and patient access to care. We engage with various policy makers to help promote an environment in which we can continue to innovate and develop transformative medicines for the benefit of patients with serious diseases.

We meet all federal, state and local laws and reporting requirements governing corporate political contributions. We file quarterly reports on our federal lobbying activity in compliance with the Honest Leadership and Open Government Act of 2007. These reports are available to the public at <https://soprweb.senate.gov/index.cfm?event=selectfields>.

Vertex is a member of a number of industry and trade groups, including the Biotechnology Industry Association. These organizations represent the biotechnology industry and/or businesses more broadly in engaging with policy makers on issues that affect our business. Our governmental affairs executives evaluate our participation in these organizations regularly to ensure that they are broadly aligned with our business objectives, but we do not always agree with positions taken by these organizations and/or its members.

DIRECTOR COMPENSATION

Non-Employee Director Compensation Program

We have designed and implemented our compensation program for our non-employee directors to attract, motivate and retain individuals who are committed to our values and goals and who have the expertise and experience that we need to achieve those goals.

The compensation program for our non-employee directors is:

Compensation Elements

Cash

Annual Cash Retainer		\$	100,000
Annual Committee Chair Retainer	Audit and Finance Committee	\$	30,000
	Management Development and Compensation Committee	\$	25,000
	Corporate Governance and Nominating Committee	\$	20,000
	Science and Technology Committee	\$	20,000
Committee Membership Retainer	Audit and Finance Committee	\$	15,000
	Management Development and Compensation Committee	\$	12,500
	Corporate Governance and Nominating Committee	\$	10,000
	Science and Technology Committee	\$	10,000
Annual Co-Lead Independent Director Retainer		\$	40,000

Equity

Initial Equity Grant	A \$400,000 value-based award in restricted stock units vesting after 12 months		
Annual Equity Retainer	On June 1 of each year, a \$400,000 value-based award, which the directors can elect to receive in the form of:		
	<ul style="list-style-type: none"> ● options that are fully-vested upon grant; ● restricted stock units that vests on the first anniversary of the date of grant; or ● a mix of options and restricted stock units 		

Each of our non-employee directors is eligible to defer 50% or 100% of the cash and restricted stock portion of his/her compensation set forth above and elect to receive deferred stock units that are paid out in common stock upon the earliest to occur of (i) termination of the non-employee director's service on our board of directors, (ii) a change of control and (iii) the non-employee directors disability or death.

Our non-employee directors also are reimbursed for their business-related expenses incurred in connection with attendance at board and committee meetings and related activities. Our only employee director, Dr. Leiden, receives no separate compensation for his service in such capacity.

We annually review the compensation program for our non-employee directors. In the second half of 2018, based on a market assessment of the board compensation at our peer companies, we modified the non-employee director compensation program to (i) reduce the value of the equity compensation to our directors from \$475,000 to \$400,000 and (ii) allow the directors to choose whether to receive their equity grants in the form of restricted stock units or stock options.

2018 Summary Compensation

Director	Fees Earned or Paid in Cash	Stock Awards ⁽¹⁾	Option Awards ⁽¹⁾	Total
Sangeeta N. Bhatia	\$ 130,000	\$ 275,085	\$ 200,230	\$ 605,315
Alan Garber	\$ 110,000	\$ 275,085	\$ 200,230	\$ 585,315
Terrence C. Kearney	\$ 142,500	\$ 275,085	\$ 200,230	\$ 617,815
Yuchun Lee	\$ 125,000	\$ 275,085	\$ 200,230	\$ 600,315
Margaret G. McGlynn	\$ 120,000	\$ 275,085	\$ 200,230	\$ 595,315
Bruce I. Sachs ⁽²⁾	\$ 180,000	\$ 275,085	\$ 200,230	\$ 655,315
Elaine S. Ullian	\$ 172,500	\$ 275,085	\$ 200,230	\$ 647,815
William D. Young	\$ 122,500	\$ 275,085	\$ 200,230	\$ 597,815

(1) The amounts set forth under the captions "Stock Awards" and "Option Awards" in the table above represent the grant-date fair value for financial statement reporting purposes of the equity awards granted during 2018. Our methodology, including underlying estimates and assumptions, for calculating these values is set forth in Note N to our consolidated financial statements included in our 2018 Annual Report on Form 10-K, filed with the SEC on February 13, 2019.

(2) Mr. Sachs elected to defer his quarterly cash retainers, which were paid in deferred stock units, on each of the quarterly payment dates occurring on the 15th of the month following the quarter end in an amount equal to the dollar value of the cash amount that would have been paid on such date divided by the fair market value of a share of common stock on each such date. The per share fair market values of our common stock on each of those dates was \$160.89, \$180.97, \$179.29 and \$184.90.

2018 Equity Grants

Grant	Date	Shares	Exercise Price	Grant-Date Fair Value
Annual Non-Employee Director Option Grants	June 1, 2018	3,229	\$ 152.74	\$ 200,230
Annual Non-Employee Director Restricted Stock Unit Grants	June 1, 2018	1,801	N/A	\$ 275,085

Outstanding Equity

As of December 31, 2018, our non-employee directors had outstanding restricted stock units, deferred stock units and stock options to purchase our common stock as follows:

Director	Outstanding Restricted Stock Units	Outstanding Deferred Stock Units	Exercisable Options	Total Outstanding Options
Sangeeta N. Bhatia	1,801	—	17,203	20,953
Alan Garber	3,451	—	5,224	8,549
Terrence C. Kearney	1,801	—	75,972	75,972
Yuchun Lee	1,801	—	98,931	98,931
Margaret G. McGlynn	1,801	2,188	65,597	65,597
Bruce I. Sachs	1,801	9,087	125,597	125,597
Elaine S. Ullian	1,801	—	83,097	83,097
William D. Young	1,801	—	85,597	85,597

Non-Employee Director Stock Ownership Guidelines

We have stock ownership guidelines for our non-employee directors pursuant to which our non-employee directors should, within five years of becoming subject to the guidelines, achieve ownership of shares of our common stock with a value equal to at least five times the annual cash retainer.

CORPORATE SOCIAL RESPONSIBILITY

Vertex has grown into a leading global biotechnology company that repeatedly innovates to bring transformative medicines to people with serious diseases around the world. As we have grown, so too has our commitment to corporate social responsibility. We are pleased by the recognition we have received, such as our inclusion on Barron's 100 Most Sustainable Companies list.



Community

At Vertex, giving back is in our DNA. In 2018, Vertex and its employees supported more than 1,100 nonprofit organizations in 13 countries through Vertex Volunteers and The Vertex Foundation Matching Gift Program. These efforts are part of our 10-year, \$500 million corporate giving commitment announced in 2017.

The Vertex Foundation, a nonprofit 501(c)(3) foundation established in 2017, is a long-term source of charitable giving. It seeks to improve the lives of people with serious diseases and in our communities through education, innovation, and health.

Our corporate giving extends and expands our long-term commitment to patients with serious diseases and our communities, including a focus on science, technology, engineering, arts and math (STEAM) education. Our collaboration with the Boston Public Schools provides access to our 3,000 square foot Learning Lab to 1,500 students annually. In 2018, we expanded this commitment and opened a Learning Lab in our research site in San Diego, reaching 450 students in its first months. In addition, students may participate in mentoring and internship opportunities with Vertex scientists. We also annually grant full four-year scholarships to the University of Massachusetts and provide 85 scholarships to people with cystic fibrosis or their family members who are pursuing two-year, four-year or graduate degrees.

We encourage our employees to participate in community service activities through Vertex Volunteers program. In 2018, we celebrated our 10th annual Day of Service with more than 1,000 employees in 13 countries collectively volunteering over 3,500 hours in their local communities in a single day. Throughout the year, Vertex Volunteers enables employees to volunteer in their local communities, such as *pro bono* activities conducted by members of our legal and compliance group and activities arranged through our Employee Resource Networks.



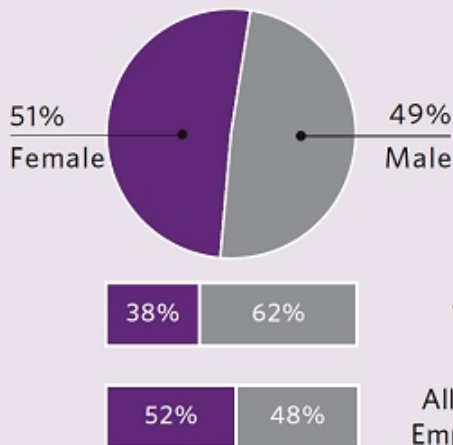
Workplace

We believe that in an inclusive workforce, each employee brings diverse perspectives and strengths, and that embracing those strengths and celebrating those differences is essential to our success and to driving innovation. We are pleased to rank #5 among 1,000 companies in Forbes 2019 Best Employers for Diversity List. In 2018, for the ninth consecutive year, Vertex ranked in the top 10 of Science Magazine's Top Employer List, in addition to other local workplace recognitions.

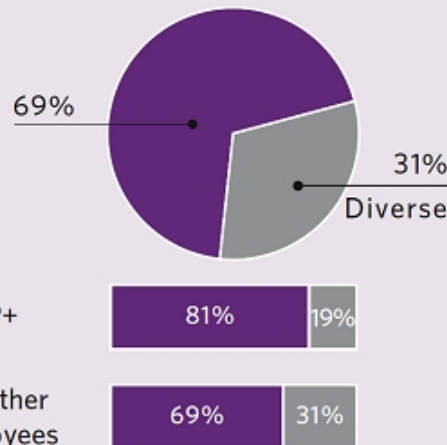
Five of our ten board members are diverse based on gender and/or ethnicity. This includes three female board members, and we are pleased to have been recognized by 2020 Women on Boards, a non-profit organization that is focused on educating corporate stakeholders on the importance of board diversity.

On a global basis, our employees are nearly evenly split between men and women. In the United States, approximately 30% of our workforce and 39% of new hires are racially/ethnically diverse. As of the end of 2018, 38% of our global leadership (VP and above) were women and 19% of U.S. leadership were racially/ethnically diverse.

VERTEX GLOBAL GENDER DIVERSITY



VERTEX US RACIAL/ETHNIC DIVERSITY





Environment

We are committed to limiting our environmental impacts and to operating our business in a sustainable manner.

Strong local efforts are reducing our environmental impacts. Vertex is on track to reduce greenhouse gas emissions by 35% by 2020 at our Boston office (over a 2015 baseline). Vertex's research facility in Oxford, UK uses 100% renewable energy sources for its electricity and gas. At our research site in San Diego, we divert 15,000 pounds of cardboard and glass annually through a unique solvent distribution system. In addition, our facilities in Boston and in San Diego are LEED Gold certified and our office in London achieved a BREEAM rating of excellent.

We promote energy efficiency outside of our buildings, too. Employees are encouraged to use public transportation to commute to work and we offer a subsidy for them to do so. Approximately 50% of employees in Boston and 86% of employees in London commute using public transportation. In San Diego, our efforts to encourage more sustainable commuting methods achieved the highest recognition from the San Diego Association of Government's iCommute program, one of only 17 companies to achieve the platinum level.

Building on these local sustainability efforts, we plan to establish global, long-term environmental goals by the end of 2019, including an absolute reduction in greenhouse gas emissions. We plan to report progress against the goals annually and participate in CDP Climate Change survey beginning in 2020.

Item 2 Amendment and Restatement of 2013 Stock and Option Plan

Our broad-based equity compensation program is essential to attract, retain and motivate people with the necessary talent and experience and to provide additional incentive to achieve our short- and long-term business objectives. Accordingly, we are requesting that our shareholders approve an amendment and restatement of our 2013 Stock and Option Plan, or 2013 Plan, which would increase the number of shares available for issuance under the 2013 Plan by 5.0 million shares.

On April 9, 2019, our board of directors amended and restated our 2013 Plan, subject to shareholder approval, to, among other things, increase the number of shares of common stock authorized for issuance under the 2013 Plan by 5.0 million shares.

Our 2013 Plan utilizes “fungible” shares, with stock options counting as one share against the total authorized shares and full value awards, such as restricted stock or restricted stock units, counting as 1.66 shares against the total authorized shares. We adopted this fungible share plan to provide flexibility in the types of awards we grant under our equity compensation program, while appropriately accounting for the difference between stock options and full value awards. Over the last several years, we have implemented changes in our equity compensation program for our employees, executives and our board that have significantly reduced dilution from our employee equity awards while maintaining a broad-based equity program. We believe that our equity compensation program has been fundamental to our success over the last several years and that the amendment and restatement of the 2013 Plan, which authorizes the issuance of additional shares subject to the 2013 Plan, is necessary in order to support our equity compensation program going forward.

Maintenance of Broad-Based Equity Program While Reducing Dilution

Since our inception, we have compensated all eligible employees using a mix of cash and equity. The broad-based nature of our equity compensation program is an important element of our overall employee compensation program and reflects our philosophy that it is important for all of our employees to approach their jobs with a long-term commitment and perspective. Over the last several years, we have modified our equity compensation programs. These modifications are consistent with modifications other biotechnology companies have made as they matured from development-stage companies to commercial-stage companies with a strong financial profile. As a result of these changes, we granted, on an absolute basis, equity awards representing 42% fewer shares of common stock in 2018 as compared to 2012 and reduced our “burn rate” from 3.6% in 2012 to 1.7% in 2018.

	2012 Equity Awards	2013 Equity Awards	2014 Equity Awards	2015 Equity Awards	2016 Equity Awards	2017 Equity Awards	2018 Equity Awards	% Change 2012 v 2018
Total Shares Granted Subject to Equity Awards	7,525,000	6,276,000	5,629,000	5,035,000	4,887,000	4,470,000	4,391,000	(42)%
Gross Burn Rate ⁽¹⁾	3.6%	2.8%	2.4%	2.1%	2.0%	1.8%	1.7%	
Awards Canceled, Forfeited or Expired	1,644,000	2,622,000	1,628,000	1,573,000	928,000	1,107,000	826,000	
Net Dilution	5,881,000	3,654,000	4,001,000	3,462,000	3,959,000	3,363,000	3,565,000	
Net Burn Rate	2.8%	1.6%	1.7%	1.4%	1.6%	1.3%	1.4%	

(1) “Burn rate” is defined as the number of equity awards granted in a specific year divided by the basic weighted average number of shares outstanding during that year.

Key Provisions of our 2013 Plan

The 2013 Plan includes a number of provisions designed to serve shareholders’ interests and facilitate effective corporate governance, including the following:

- **Fungible Shares:** Options granted at fair market value on the grant date, and any other awards that we may in the future grant at a purchase price of 100% of the fair market value of a share of our common stock on the date of grant such as stock appreciation rights, count against the number of shares authorized under our 2013 Plan at a rate of one share for each share granted. Any restricted stock units, restricted stock or other “full value” awards granted under the 2013 Plan count against the number of shares authorized for issuance under our 2013 Plan at a rate of 1.66 shares for each share granted.
- **No Stock Option Re-pricing/Exchange:** Except in connection with specific corporate transactions (including stock dividends, stock splits, consolidations, mergers, recapitalizations and reorganizations), the 2013 Plan does not permit (i) the amendment of stock options or stock appreciation rights granted under the 2013 Plan to provide an exercise price that is lower than the then-current price per share of such outstanding option or stock appreciation right, (ii) the cancellation of any outstanding option or stock appreciation right (whether or not granted under the 2013 Plan) and the grant in substitution therefor of any award under the 2013 Plan covering the same or a different number of shares of common stock and having an exercise price per share lower than the then-current exercise price per share of the

cancelled option or stock appreciation right or (iii) the cancellation in exchange for a cash payment of any outstanding option or stock appreciation right with an exercise price per share above the then-current fair market value of our common stock without shareholder approval.

- *No Discounted Stock Options or SARs:* Stock options and stock appreciation rights cannot be granted with an exercise price less than the fair market value on the date of grant.
- *No “Evergreen” Provision:* The 2013 Plan does not contain an “evergreen” or similar provision. The 2013 Plan fixes the number of shares available for future grants and does not provide for any increase based on increases in the number of outstanding shares of common stock.
- *No Reload Rights:* Stock options granted under the 2013 Plan do not contain provisions entitling participants to automatic grants of additional stock options in connection with the exercise of the original option.
- *Limitation on Re-use of Shares:* Shares that are delivered to, or withheld by, the company under an award may not be reissued under the 2013 Plan. Shares may be delivered or withheld in connection with the exercise of stock options or the payment of required withholding taxes.
- *Limitations on Dividend Payments:* No dividends or dividend equivalents will be paid with respect to shares subject to stock options or stock appreciation rights unless and until such awards have vested and been exercised in accordance with their terms. Any dividends or dividend equivalents paid with respect to shares underlying stock rights other than stock options or stock appreciation rights will be subject to the same vesting terms otherwise applicable to the award.
- *Independent Committee:* As it relates to our employees, the 2013 Plan is administered by the MDCC, which consists of “outside directors” within the meaning of Section 162(m) of the Internal Revenue Code of 1986, as amended, or the Code, “non-employee directors” within the meaning of Rule 16b-3 of the Exchange Act and “independent directors” as defined by Nasdaq.

Existing Plans

As of March 31, 2019, options to purchase (i) an aggregate of 7,331,667 shares having a weighted-average exercise price of \$134.89 per share and a weighted-average term before expiration of 7.93 years were outstanding under our 2013 Plan, and (ii) an aggregate of 1,370,072 shares having a weighted-average exercise price of \$66.40 per share and a weighted-average term before expiration of 3.84 years were outstanding under our Amended and Restated 2006 Stock and Option Plan, or 2006 Plan. Also on March 31, 2019, there were outstanding an aggregate of 3,995,866 unvested shares of restricted stock and restricted stock units granted under our 2013 Plan and zero unvested shares of restricted stock and restricted stock units granted under our 2006 Plan.

We may grant additional awards under our 2013 Plan. We are not able to grant additional awards under our 2006 Plan. As of March 31, 2019, there were 11,670,561 shares remaining available for award under our 2013 Plan. In addition, any shares of common stock subject to awards outstanding under the 2006 Plan which expire, terminate or are otherwise surrendered, canceled, forfeited or repurchased by us at their original issuance price pursuant to a contractual repurchase right, will become available for issuance under the 2013 Plan.

Submission of 2013 Plan

We are submitting the amendment to our 2013 Plan to our shareholders as required under applicable rules of Nasdaq and to ensure (i) favorable federal income tax treatment under Section 422 of the Code, for any grants of incentive stock options that we may make under our 2013 Plan and (ii) continued eligibility under Rule 162(m) of the Code, to the extent applicable, for a federal income tax deduction with respect to compensation earned in respect of certain awards granted under our 2013 Plan prior to December 22, 2017.

Summary of the Amended and Restated 2013 Stock and Option Plan

A summary of the principal features of our 2013 Plan is set forth below. A copy of our 2013 Plan, as amended and restated and in the form that would become effective upon shareholder approval of this proposal, is attached to this proxy statement as Appendix A.

Administration and Eligibility for Participation

The 2013 Plan is administered by our board of directors or any committee to which it delegates all or a part of its administrative responsibilities under the 2013 Plan. Our board has delegated the administration of the 2013 Plan to the MDCC. Subject to the provisions of the 2013 Plan, our board, or an authorized committee of our board, determines the persons to whom awards under the 2013 Plan will be granted, the number of shares to be covered by each award, the exercise price per share and the manner of exercise, the terms and conditions upon which awards are granted, whether to accelerate the vesting or extend the date of exercise of

any installment of any award and how to interpret the provisions of the 2013 Plan. Awards may be granted under the 2013 Plan to our employees, including officers and directors who are employees, and to our consultants, advisors and non-employee directors. As of March 31, 2019, we and our subsidiaries had approximately 2,600 employees and nine non-employee directors eligible to participate in the 2013 Plan. The number of consultants and advisors eligible for awards under our 2013 Plan varies from time to time. No participant may be granted awards in any calendar year for more than 1,000,000 shares, subject to adjustment for stock splits and similar recapitalizations.

Description of Awards

The 2013 Plan provides for the award of stock options, stock grants, and other stock-based awards. Any restricted stock grants, restricted stock units or other “full value” awards granted under the 2013 Plan will count against the number of shares authorized for issuance under the 2013 Plan at a rate of 1.66 shares for each share granted. Shares of common stock reserved for such awards granted under the 2013 Plan that lapse or are canceled or forfeited are added back to the share reserve at a rate of 1.66 shares for each share that lapses or is canceled or forfeited. Shares of common stock issued pursuant to restricted stock agreements and restricted stock unit awards may be purchased by employees for nominal value. If we were to permit shares of common stock to be delivered to us to pay the exercise price of a stock option or to be withheld to fund the payment of taxes, those shares would not be added back to the share reserve available for future awards. No option or stock appreciation right may be granted with a term exceeding ten years from the date of grant.

Stock Options

Stock options provide award recipients with the right, subject to the terms and conditions that are specified in connection with the option grant, to purchase a specified number of shares of our common stock at a specified exercise price. Stock options granted under the 2013 Plan may be awarded as either non-qualified stock options or as incentive stock options within the meaning of Section 422 of the Code, referred to as ISOs, however only employees may receive ISOs. The maximum value of shares of common stock—determined at the time of grant—that may be subject to ISOs that become exercisable by an employee in any one year is limited to \$100,000. Since 2003, we have only granted non-qualified stock options under our equity plans.

Stock options granted under the 2013 Plan may not be granted with an exercise price that is less than the fair market value of our common stock on the date of grant, which is defined under the 2013 Plan as the average of the highest and lowest quoted selling prices on such date. ISOs may not be granted with an exercise price that is less than 110% of fair market value in the case of employees or officers holding 10% or more of our voting stock. ISOs granted to an employee or officer holding 10% or more of our voting stock must expire not more than five years from the date of grant.

Stock options granted under the 2013 Plan can only be exercised by the option holder and are not transferable except by the laws of descent and distribution or pursuant to domestic relations orders or Title I of the Employee Retirement Income Security Act or as otherwise determined by the MDCC, provided such transfer is not for value.

The 2013 Plan provides for stock option grants to non-employee directors under our director compensation program. In addition to any other stock rights as may be determined by our board of directors each non-employee director serving in office on June 1 of any year is granted, pursuant to our equity plans, a fully vested non-qualified option to purchase a specified number of shares determined from time to time by our board.

The 2013 Plan permits the MDCC to determine the manner of payment of the exercise price of options. Such methods include payment by cash or check, or, at the discretion of the MDCC, by means of a broker assisted “cashless exercise,” delivery to us of shares of our common stock, any combination of such methods or any other lawful means approved by the MDCC, other than delivery of a promissory note.

Stock Grants

A stock grant is an award of shares of common stock. Stock grants may be issued subject to restrictions on transfer and vesting requirements, as determined by the board or an authorized committee of the board. Vesting requirements may take the form of our lapsing right to repurchase the stock from the award recipient, based on either continued employment for specified time periods or on the attainment of specified business performance goals set by our board or the committee of our board. Subject to the transfer restrictions and our repurchase rights, if any, the grantee will have all rights with respect to unvested shares of common stock issued under a stock grant as are possessed by our other shareholders, including all voting and dividend rights, provided that dividends, if any, with respect to unvested shares shall accrue and be payable only upon the vesting of such shares.

Stock-Based Awards

The 2013 Plan provides that the MDCC may grant other stock-based awards, including restricted stock units, share grants based upon specified conditions, the grant of securities convertible into shares, or the grant of stock appreciation rights, or phantom stock awards, in each case upon terms and conditions established by the MDCC.

Performance Awards

Under the 2013 Plan, we have the discretionary authority to structure one or more awards so that the shares of common stock subject to those particular awards will not vest unless certain pre-established objective performance goals are achieved, in order to, with respect to awards made before December 22, 2017, qualify such awards as performance-based compensation that will not be subject to the \$1,000,000 limitation imposed by Section 162(m) of the Code, to the extent applicable, on the income tax deductibility of the compensation paid to specified executive officers. Such objective goals may be based on one or more of the following criteria: (i) revenue targets or revenue growth; (ii) achievement of specified

milestones in the discovery, development or regulatory approval of one or more of our drug candidates; (iii) achievement of specified milestones in the commercialization of one or more of our products; (iv) achievement of specified milestones in the manufacturing of one or more of our products; (v) cost reduction or other expense control targets; (vi) personal management objectives; (vii) stock price (including, but not limited to, growth measures); (viii) total shareholder return; (ix) income per share; (x) operating efficiency measures; (xi) operating margin; (xii) gross margin; (xiii) return measures (including, but not limited to, return on assets, capital, equity or sales); (xiv) net or total revenue levels; (xv) productivity ratios; (xvi) operating income; (xvii) net operating profit; (xviii) net earnings or net income (before or after taxes); (xix) cash flow (including, but not limited to, operating cash flow, free cash flow and cash flow return on capital); (xx) earnings or operating income before interest, taxes, depreciation, amortization and/or stock-based compensation expense; (xxi) mergers, acquisitions or divestitures objectives; (xxii) market share; (xxiii) customer satisfaction; (xxiv) working capital targets; (xxv) budget objectives and (xxvi) achievement of other balance sheet or statements of operations objectives.

Each objective performance measure that is a financial measure may be determined pursuant to generally accepted accounting principles (GAAP) or on a non-GAAP basis. Such objective performance measures may reflect absolute entity or business unit performance or a relative comparison to the performance of a peer group of entities, an index or indices or other external measure of the selected performance criteria, and may be absolute in their terms or measured against or in relationship to other companies comparably, similarly or otherwise situated. The objective performance measures and any targets with respect thereto need not be based on an increase, a positive or improved result or the avoidance of loss. Such performance measures: (1) may vary by participant and may be different for different awards; (2) may be particular to a participant or the department, branch, line of business, subsidiary or other unit in which the participant works and may cover such performance period as may be specified by us; and (3) shall be set within the time period prescribed by, and shall otherwise comply with the requirements of, Section 162(m) of the Code, to the extent applicable.

We may specify that such performance measures shall be adjusted to exclude or provide for appropriate adjustment for one or more of the following items: (A) asset impairments or write-downs; (B) litigation and governmental investigation expenses and judgments, verdicts or claim settlements; (C) the effect of changes in tax law, accounting principles or other laws, regulations or provisions affecting reported results; (D) the effect of exchange rates for non-US dollar denominated net sales or goals based on operating profit, earnings or income; (E) accruals for reorganization and restructuring programs; (F) any non-GAAP adjustments as described in our earnings releases or in the management's discussion and analysis of financial condition and results of operations appearing in our periodic reports; (G) items of income, gain, loss or expense attributable to the operations of any business acquired by us, any parent or subsidiary or of any joint venture established by us or any parent or subsidiary; (H) costs and expenses incurred in connection with mergers and acquisitions; (I) items of income, gain, loss or expense attributable to one or more business operations divested by us, or any parent or subsidiary or the gain or loss realized upon the sale of any such divested business or the assets thereof; or (J) the effect of any change in the outstanding shares of common stock effected by reason of a stock split, stock dividend, stock repurchase, reorganization, recapitalization, merger, consolidation, spin-off, combination or exchange of shares or other similar corporate change or any distributions to our shareholders other than regular cash dividends.

Notwithstanding any provision of the 2013 Plan, with respect to any award that is intended to qualify as performance-based compensation, we may adjust downwards, but not upwards, the number of shares payable pursuant to such award, and we may not waive the achievement of the applicable performance measures except in the case of the death or disability of the participant or a change in control of our company or as otherwise provided by the MDCC.

We shall have the power to impose such other restrictions on performance awards as we may deem necessary or appropriate to ensure that such awards satisfy all requirements for performance-based compensation.

The foregoing references in this "Performance Awards" section to Section 162(m) of the Code refer to such Code section as in effect prior to December 22, 2017, including the regulations thereunder and other applicable Internal Revenue Service guidance, whether promulgated or issued before or after December 22, 2017.

It is the intent of the Company that the amendment and restatement of the 2013 Plan not constitute a "material modification" of the Plan or awards granted under it prior to June 5, 2019 (the effective date of the amendment and restatement of the 2013 Plan), in each case within the meaning of Section 162(m) of the Code. However, there can be no guarantee that awards made before December 22, 2017 under the 2013 Plan will be deductible as qualified performance-based compensation under Section 162(m) of the Code. In addition, the MDCC has and will continue to have authority to pay or provide compensation (including under the 2013 Plan) that is not deductible under Section 162(m) of the Code in order to maintain a competitive compensation program and provide compensation that will attract and retain highly qualified executives.

Adjustments in the Event of Stock Dividends, Stock Splits, Recapitalizations or Reorganizations

The number of shares subject to stock rights and other terms applicable to such rights will be equitably adjusted if we issue a stock dividend, or in the event of a stock split, recapitalization or reorganization. In addition, in the event of certain consolidations or acquisitions or a sale of substantially all of our assets, either (i) the MDCC or the entity assuming our obligations under the 2013 Plan shall make appropriate provision for the continuation of all outstanding stock rights under the 2013 Plan or grant replacement stock rights on an equitable basis as determined by the MDCC or the relevant entity, or (ii) if there is no assumption or replacement, the vesting of all outstanding and unvested stock rights under the 2013 Plan will be accelerated and such stock rights will become fully exercisable immediately prior to such consolidation, acquisition or sale.

Effective Date, Amendment and Expiration

The 2013 Plan became effective on May 8, 2013 and was previously amended and restated effective as of June 4, 2015, June 8, 2017, May 17, 2018 and October 16, 2018. The amendment and restatement of our 2013 Plan will be effective, subject to shareholder approval, on June 5, 2019. The 2013 Plan will terminate on April 12, 2027. Our board of directors may terminate or amend the 2013 Plan at any time, subject to shareholder approval under certain circumstances as provided in the 2013 Plan. No amendment or termination of the 2013 Plan will adversely and materially affect the rights provided in any award made under the 2013 Plan prior to the plan amendment or termination. Neither our board nor the administrator has the authority to reduce the exercise price of any stock option after the date of grant, except in the case of an equitable adjustment required under the 2013 Plan. No award may be made under the 2013 Plan after the plan expiration date. Awards made prior to expiration of the 2013 Plan may extend beyond the plan expiration date.

U.S. Federal Income Tax Consequences

The discussion of federal income tax consequences that follows is based on an analysis of the Code as currently in effect, existing law, judicial decisions and administrative regulations and rulings, all of which are subject to change, and is applicable to optionees who are U.S. taxpayers.

Non-Qualified Options

Options that are designated as non-qualified options are not intended to qualify for treatment under Section 422 of the Code. Options otherwise qualifying as ISOs, to the extent the aggregate fair market value of shares with respect to which such options are first exercisable by an individual in any calendar year exceeds \$100,000, also will be treated as options that are not ISOs.

A non-qualified option ordinarily will not result in income to the optionee or a deduction for us for tax purposes at the time of grant. Instead, the optionee will recognize compensation income at the time of exercise of a non-qualified option in an amount equal to the excess of the fair market value of the shares at the time of exercise over the option exercise price. Any compensation income may be subject to withholding taxes, and a deduction may then be allowable to us in an amount equal to the optionee's compensation income.

An optionee's initial basis in shares so acquired will be the amount paid on exercise of the non-qualified option plus the amount of any corresponding compensation income. Any gain or loss as a result of a subsequent disposition of the shares so acquired will be capital gain or loss.

Incentive Stock Options

ISOs are intended to qualify for treatment under Section 422 of the Code. An ISO does not result in taxable income to the optionee or a deduction for us at the time it is granted or exercised, provided that the optionee does not dispose of the shares acquired pursuant to the option either within two years after the date of grant of the option or within one year after the shares are issued, referred to as the ISO holding period. However, the difference between the fair market value of the shares on the date of exercise and the option exercise price will be an item of tax preference that is included in alternative minimum taxable income. Upon disposition of the shares after the expiration of the ISO holding period, the optionee generally will recognize long-term capital gain or loss based on the difference between the disposition proceeds and the option exercise price paid for the shares. If the shares are disposed of prior to the expiration of the ISO holding period, the optionee generally will recognize taxable compensation, and we will have a corresponding deduction, in the year of the disposition, equal to the excess of the fair market value of the shares on the date of exercise of the option over the option exercise price. Any additional gain realized on the disposition normally will constitute capital gain. If the amount realized upon such a disqualifying disposition is less than fair market value of the shares on the date of exercise, the amount of compensation income will be limited to the excess of the amount realized over the optionee's adjusted basis in the shares.

Stock Grants

With respect to stock grants that result in the issuance of shares that are either not restricted as to transferability or not subject to a substantial risk of forfeiture, the grantee must generally recognize ordinary income equal to the fair market value of shares received. Thus, deferral of the time of issuance generally will result in the deferral of the time the grantee will be liable for income taxes with respect to such issuance. We generally will be entitled to a deduction in an amount equal to the ordinary income recognized by the grantee.

With respect to stock grants involving the issuance of shares that are restricted as to transferability and subject to a substantial risk of forfeiture, the grantee generally must recognize ordinary income equal to the fair market value of the shares received at the time the shares become transferable or are not subject to a substantial risk of forfeiture, whichever occurs earlier. A grantee may elect to be taxed at the time of receipt of shares rather than upon lapse of restrictions on transferability or substantial risk of forfeiture, but if the grantee subsequently forfeits such shares, the grantee would not be entitled to any tax deduction, including as a capital loss, for the value of the shares on which the grantee previously paid tax. The grantee must file any such election with the Internal Revenue Service within 30 days of the receipt of the shares. We generally will be entitled to a deduction in an amount equal to the ordinary income recognized by the grantee.

The granting of awards under the 2013 Plan is discretionary and we cannot now determine the number or type of awards to be granted in the future to any particular person or group. For further information on awards to non-employee directors, see the section "Non-Employee Director Compensation Program" beginning on page 24 of this proxy statement.

The following table sets forth, as to our named executive officers and the other individuals and groups indicated, the number of shares of our common stock subject to option grants made under the 2013 Plan from May 8, 2013 through March 31, 2019.

Name	Position	Number of Shares Underlying Options Granted
Named Executive Officers		
Jeffrey M. Leiden	Chairman, President & Chief Executive Officer	889,019
Stuart A. Arbuckle	EVP & Chief Commercial Officer	273,926
Michael Parini	EVP & Chief Legal and Administrative Officer	179,699
Amit Sachdev	EVP & Chief Regulatory Officer	260,552
Jeff Chodakewitz	Former EVP & Chief Medical Officer	216,921
Thomas Graney	Former SVP & Chief Financial Officer	10,436
Ian F. Smith	Former EVP & Chief Operating Officer	255,113
All executive officers as a group (10 persons)		2,405,705
Director Nominees		
Sangeeta N. Bhatia		45,597
Lloyd Carney		—
Terrence C. Kearney		55,597
Yuchun Lee		55,597
Jeffrey M. Leiden		889,019
Bruce I. Sachs		60,597
All non-employee board members, including nominees, as a group (9 persons)		427,728
All employees, including current officers who are not executive officers, as a group		11,513,878

On March 29, 2019, the last reported sale price of our common stock on Nasdaq was \$183.95 per share.

Our board of directors recommends a vote **FOR** the approval of the amendment and restatement of our 2013 stock and option plan, that, among other things, increases the number of shares authorized for issuance under this plan by 5.0 million shares. The affirmative vote by the holders of a majority of the votes cast in person or by proxy on this matter is required for the approval of this proposal.

Equity Compensation Plan Information

As of March 31, 2019, there were 11,670,561 shares remaining available for award under our 2013 Plan. Under our 2013 Plan, all awards may be granted as full value awards but count as 1.66 shares for each full value share awarded.

As of March 31, 2019, under our equity plans:

- Stock options covering 8,701,739 shares of our common stock, with a weighted average exercise price of \$124.11 and a weighted average remaining term of 7.28 years, were outstanding; and
- unvested restricted stock awards or units covering 3,995,866 shares of our common stock were outstanding.

The following table provides aggregate information with respect to all of our equity compensation plans in effect as of December 31, 2018. We are required under applicable SEC rules to disclose in this table the number of shares remaining available for issuance under our equity plans as of December 31, 2018. Accordingly, the figures in the table below do not reflect the equity grants made to our employees under our 2013 Stock and Option Plan, or 2013 Plan, since December 31, 2018.

Plan Category	Number of Securities to be Issued Upon Exercise of Outstanding Options, Restricted Stock Units and Rights	Weighted-Average Exercise Price of Outstanding Options and Rights	Number of Securities Remaining Available for Future Issuance Under Equity Compensation Plans (excluding securities reflected in first column)
Equity Compensation Plans Approved by Shareholders ⁽¹⁾	12,026,549 ⁽²⁾	111.46 ⁽³⁾	15,139,962 ⁽⁴⁾
Equity Compensation Plans Not Approved by Shareholders	—	—	—
TOTAL	12,026,549		15,139,962

(1) These plans consist of our 2013 Plan, our 2006 Stock and Option Plan ("2006 Plan") and our Employee Stock Purchase Plan. No further shares of common stock will be issued or distributed under the 2006 Stock and Option Plan.

(2) Represents the number of underlying shares of common stock associated with outstanding options, restricted stock units, performance stock units, and deferred stock units granted under stockholder approved plans, as of December 31, 2018, and includes 6,799,082 options granted under the 2013 Plan, 2,698,193 restricted stock units granted under the 2013 Plan, 758,866 PSUs (assuming the maximum number of PSUs will be earned) granted under the 2013 Plan, 16,678 deferred stock units attributable to compensation deferred by non-employee directors participating in the Director Plan and distributable in the form of shares of common stock under the 2013 Plan (and which are treated as outstanding "stock rights" under the 2013 Plan), 1,751,821 options granted under the 2006 Plan, and 1,909 restricted stock units granted under the 2006 Plan. Does not include 479,552 shares of restricted stock outstanding as of December 31, 2018.

(3) Represents the weighted-average exercise price of options outstanding under the 2013 Plan and 2006 Plan. See note (2) above with respect to restricted stock units, PSUs and deferred stock units (credited under the Director Plan) outstanding under the 2013 Plan. The weighted-average exercise price does not take these awards into account.

(4) Represents the number of shares available for future issuance under stockholder approved equity compensation plans and is comprised of 14,737,360 shares available for future issuance under the 2013 Plan and 402,602 shares available for future issuance under the Employee Stock Purchase Plan, including shares to be purchased at the end of the current offering period ending May 15, 2019.

Item 3 Amendment and Restatement of ESPP

Our board of directors believes that our employee stock purchase plan provides an important employee benefit that helps us attract and retain employees and encourage their participation in and commitment to our business and financial success. We are requesting that our shareholders approve an increase in the number of authorized shares under our Employee Stock Purchase Plan of 2.0 million shares.

The Vertex Pharmaceuticals Incorporated Employee Stock Purchase Plan, or ESPP, was adopted by our board of directors in 1992, and has been approved by the shareholders. Under the ESPP, eligible employees have the right to purchase our common stock through payroll deductions, on a tax-favored basis in compliance with Section 423 of the Code. As of March 31, 2019, approximately 2,600 employees were eligible to participate in the ESPP and there were 402,602 shares available for future issuances under the ESPP.

The ESPP does not contain an “evergreen” provision or similar provision that increases the number of shares available for future grants.

In April 2019, our board of directors amended our ESPP, subject to shareholder approval, by increasing the number of shares of common stock authorized for issuance under the ESPP by 2.0 million shares.

Summary of Employee Stock Purchase Plan

The ESPP is administered by the MDCC, which has the power to construe and interpret the ESPP and to determine all questions that arise under the ESPP. A copy of the ESPP, as proposed to be amended, is attached to this proxy statement as Appendix B.

Because participation in the ESPP is voluntary and employees may withdraw from the ESPP at any time during a purchase period without penalty, the benefits to be received by any particular person or group are not determinable by us at this time.

Individuals are eligible to participate in the ESPP if they are employed on an offering date, they are regularly employed by us for more than 20 hours a week and for more than five months in a calendar year and they do not own five percent or more of our outstanding common stock. If we receive requests from employees to purchase more than the number of shares available during any offering, the available shares will be allocated on a pro rata basis to subscribing employees.

An eligible employee authorizes payroll deductions in an amount not less than 1% nor greater than 15% of his or her “eligible earnings” (i.e., regular base pay, not including overtime pay, bonuses, employee benefit plans or other additional payments) for each full payroll period in the offering period.

We make two offerings to purchase common stock under the ESPP each year, one on May 15 and one on November 15. The ESPP provides that each offering period extends either for twelve months, or, if an employee so elects within the 30-day period prior to the six-month anniversary of the offering date, for six months. Each twelve-month offering period consists of two six-month purchase periods.

The price at which an employee may purchase common stock under the ESPP is 85% of the lower of (i) the average of the highest and lowest quoted selling prices of the common stock on the day an offering period commences, and (ii) the average of the highest and lowest quoted selling prices on the day the purchase period ends.

If a participating employee voluntarily resigns or is terminated by us prior to the last day of an offering period, the employee receives a refund of contributions made through their last date of employment.

Our board of directors may at any time terminate or amend the ESPP. However, our board may not amend the ESPP if any such amendment would increase the number of shares of common stock reserved under the ESPP without approval of our shareholders or take such other action that would cause the ESPP to not comply with Section 423 of the Code.

Summary of U.S. Federal Income Tax Consequences

The following is a summary of some of the material federal income tax consequences associated with the grant and exercise of awards under the ESPP under current federal tax laws and certain other tax considerations associated with awards under the ESPP. The summary does not address tax rates or non-U.S., state or local tax consequences, nor does it address employment tax or other federal tax consequences except as noted.

The ESPP is intended to qualify as an “employee stock purchase plan” under Section 423 of the Code. Assuming that the ESPP is and remains so qualified, no taxable income will be recognized by a participant until the sale or other disposition of the shares purchased under the ESPP.

If shares acquired under the ESPP are disposed of more than two years after the first day of the applicable offering period and more than one year after the purchase date, or if the participant dies while holding such shares, the participant (or his or her estate) will recognize ordinary income for the gain amount up to 15% of the value of the shares at the start of the applicable offering period. Any additional gain, or any loss, recognized on the disposition will be treated as a long-term capital gain or loss.

If shares acquired under the ESPP are disposed of within the two years following the start of the applicable offering period or within one year after the purchase date, the participant will recognize ordinary income in an amount equal to the excess of the fair market value of the shares on the purchase date over the purchase price. Any additional gain, or any loss, recognized will be treated as a short-term or long-term capital gain or loss depending on how long the participant had held the shares.

The Company is not entitled to a deduction for amounts taxed as ordinary income or capital gain to a participant except to the extent of ordinary income recognized upon a sale or disposition of shares prior to the expiration of the holding periods described above.

Our board of directors recommends a vote **FOR** the approval of the amendment of our employee stock purchase plan, that, among other things, increases the number of shares authorized for issuance under this plan by 2.0 million shares. The affirmative vote by the holders of a majority of the votes cast in person or by proxy on this matter is required for the approval of this proposal.

Item 4 Ratification of the Appointment of Independent Registered Public Accounting Firm

Engagement of Ernst & Young LLP

Our audit and finance committee is responsible for the appointment, compensation and oversight of our independent registered public accounting firm. Ernst & Young LLP has been our independent registered public accounting firm since 2005, and we believe that the selection of Ernst & Young LLP as our independent registered accounting firm for the year ending December 31, 2019 is in the best interest of our company and our shareholders.

In determining whether to reappoint our independent registered public accounting firm, our audit and finance committee undertakes an annual formal evaluation of the independent registered public accounting firm, during which it considers the quality of its discussions with and the performance of the lead audit partner, the audit team assigned to our account, the potential impact of changing our independent registered public accounting firm, the overall strength and reputation of the firm and issues pertaining to auditor independence, including fees that our independent registered public accounting firm receives for non-audit services.

Each year, our audit and finance committee, together with management, review the selection of our lead audit partner from Ernst & Young LLP. The review considers several factors, including sound judgment, industry knowledge and experience managing audits of complex companies with substantial international operations. After undertaking such review, we decided to retain the same lead audit partner from Ernst & Young LLP for the 2019 audit. In accordance with applicable requirements, we are required to change our lead audit partner every five years.

Representatives of Ernst & Young LLP are expected to attend the annual meeting, will have the opportunity to make a statement if they desire to do so and will be available to respond to appropriate questions from shareholders.

Effect of Vote

We are not required to have shareholders ratify the selection of Ernst & Young LLP. If our shareholders do not ratify the selection, our audit and finance committee will reconsider the selection of Ernst & Young LLP for the ensuing year, but may determine that continued retention of Ernst & Young LLP is in our company's and our shareholders' best interests. Even if the appointment is ratified, the audit and finance committee, in its discretion, may direct the appointment of a different independent registered public accounting firm at any time during the year if it determines that such a change would be in our company's and our shareholders' best interests.

Independent Registered Public Accounting Firm Fees

The audit and finance committee works with our management in order to negotiate appropriate fees with Ernst & Young LLP and is ultimately responsible for approving those fees. The following is a summary and description of fees for services provided by Ernst & Young LLP in 2018 and 2017.

Service	2018	2017
Audit fees	\$ 3,433,000	\$ 2,818,000
Audit-related fees	0	24,000
Tax fees	2,790,000	2,587,000
All other fees	3,000	3,000
TOTAL	\$ 6,226,000	\$ 5,432,000

“**Audit fees**” represented the aggregate fees for professional services rendered for the audit of our annual consolidated financial statements, and our internal controls over financial reporting, for the reviews of the consolidated financial statements included in our Form 10-Q filings for each fiscal quarter, for statutory audits of our international operations and providing consents with respect to registration statements.

“**Audit-related fees**” consisted principally of fees for accounting consultations.

“**Tax fees**” consisted of fees related to tax compliance, worldwide tax planning and tax advice. The tax fees for 2018 and 2017 consisted of:

- tax compliance and preparation fees, including the preparation of original and amended tax returns and refund claims, and tax payment planning of \$1,785,000 and \$1,857,000, respectively; and
- tax advice and planning fees of \$1,005,000 and \$730,000, respectively.

“**All other fees**” consisted of licensing fees paid to Ernst & Young LLP for access to its proprietary accounting research database.

Audit and Finance Committee Pre-Approval Policies and Procedures

Our audit and finance committee has established a policy to pre-approve all audit and permissible non-audit services provided by our independent registered public accounting firm. Prior to the engagement of the firm for each year's audit, management submits to our audit and finance committee for approval a description of services expected to be rendered during that year for each of the following four categories of services and a budget for those services in the aggregate.

- **Audit services** include audit work performed in the preparation of financial statements, as well as work that generally only our independent registered public accounting firm can reasonably be expected to provide, including comfort letters, statutory audits, consents and attestation services.
- **Audit-related services** are for assurance and related services that traditionally are performed by the independent registered public accounting firm, including due diligence related to mergers and acquisitions, employee benefit plan audits, special procedures required to meet certain regulatory requirements and consultation regarding financial accounting and/or reporting standards.
- **Tax services** include all services performed by the independent registered public accounting firm's tax personnel except those services specifically related to the audit of our financial statements, and include fees in the areas of tax compliance, tax planning and tax advice.
- **All other fees** are those associated with services not captured in the three preceding categories.

Prior to the engagement of our independent registered public accounting firm, our audit and finance committee pre-approves these services by category of service. The fees are budgeted and our audit and finance committee requires the independent registered public accounting firm and management to report actual fees versus the budget periodically throughout the year by category of service. During the year, circumstances may arise when it may become necessary to engage the independent registered public accounting firm for additional services not contemplated in the original pre-approval. In those instances, our audit and finance committee requires that we obtain its specific pre-approval for these services.

The audit and finance committee may delegate pre-approval authority to one or more of its members. The member to whom such authority is delegated must report any pre-approval decisions to our audit and finance committee at its next scheduled meeting.

All of the services set forth above in the categories “audit-related fees,” “tax fees” and “all other fees” were pre-approved and none were approved by our audit and finance committee pursuant to Rule 2-01(c)(7)(i)(C) of Regulation S-X, which relates to the approval of a *de minimis* amount of non-audit services after the fact but before completion of the audit.

Our board of directors recommends that you vote **FOR** ratification of the appointment of Ernst & Young LLP as our independent registered public accounting firm for the year ending December 31, 2019. The affirmative vote by the holders of a majority of the votes cast in person or by proxy on this matter is required for the approval of this proposal.

AUDIT AND FINANCE COMMITTEE REPORT

The Audit and Finance Committee of the Board of Directors (the “Audit Committee”) of Vertex Pharmaceuticals Incorporated (the “Company”), which consists entirely of directors who meet the independence and experience requirements of the Securities and Exchange Commission and The Nasdaq Stock Market LLC, has furnished the following report:

The Audit Committee assists the Company’s Board of Directors in overseeing and monitoring the integrity of the Company’s financial reporting process, compliance with legal and regulatory requirements related to financial reporting and the quality of internal controls and external audit processes. The Audit Committee’s roles and responsibilities are set forth in a written charter, which is available on the Company’s website www.vrtx.com under “Investors—Corporate Governance—Governance Documents.” Among its duties, the Audit Committee is responsible for recommending to the Company’s Board of Directors that the Company’s financial statements be included in the Company’s Annual Report on Form 10-K. As a basis for that recommendation, the Audit Committee engaged in the following activities. First, the Audit Committee discussed with Ernst & Young LLP (“Ernst & Young”), the Company’s independent registered public accounting firm for 2018, those matters that Ernst & Young is required to communicate to and discuss with the Audit Committee by the Public Company Accounting Oversight Board (United States) Auditing Standard No. 16, *Communications with Audit Committees*, which included information regarding the scope and results of the audit. These communications and discussions are intended to assist the Audit Committee in overseeing the financial reporting and disclosure process. Second, the Audit Committee discussed with Ernst & Young the firm’s independence, and received from Ernst & Young the written disclosures and the letter concerning independence as required by Public Company Accounting Oversight Board Ethics and Independence Rule 3526 (Communication with Audit Committees Concerning Independence). This discussion and disclosure informed the Audit Committee of Ernst & Young’s relationships with the Company and was designed to assist the Audit Committee in considering Ernst & Young’s independence. Finally, the Audit Committee reviewed and discussed, with Ernst & Young and with the Company’s management, the Company’s audited consolidated balance sheet as of December 31, 2018, and the Company’s consolidated statements of operations, comprehensive income (loss), shareholders’ equity and noncontrolling interest, and cash flows for the year ended December 31, 2018, including the notes thereto.

Management of the Company is responsible for the consolidated financial statements and reporting process, including establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rule 13a-15(e)); establishing and maintaining internal control over financial reporting (as defined in Exchange Act Rule 13a-15(f)); evaluating the effectiveness of disclosure controls and procedures; evaluating the effectiveness of internal control over financial reporting; and evaluating any change in internal control over financial reporting that has materially affected, or is reasonably likely to materially affect, internal control over financial reporting. The independent registered public accounting firm is responsible for expressing an opinion on the conformity of these consolidated financial statements with accounting principles generally accepted in the United States, as well as expressing an opinion on the effectiveness of internal control over financial reporting.

During 2018, management tested and evaluated the Company’s system of internal control over financial reporting in response to the requirements set forth in Section 404 of the Sarbanes-Oxley Act of 2002 and related regulations. At the conclusion of the process, management provided the Audit Committee with a report on the effectiveness of the Company’s internal control over financial reporting, which the Audit Committee reviewed. The Audit Committee also reviewed the report of management contained in the Company’s Annual Report on Form 10-K for the year ended December 31, 2018 filed with the Securities and Exchange Commission, as well as Ernst & Young’s Reports of Independent Registered Public Accounting Firm included in the Company’s Annual Report on Form 10-K. The latter reports relate to Ernst & Young’s audit of (i) the consolidated financial statements and (ii) the effectiveness of internal control over financial reporting.

Based on (i) discussions with Ernst & Young concerning the audit and the consolidated financial statements, (ii) the independence discussions, (iii) discussions with the Company’s management concerning the consolidated financial statements, and (iv) such other matters deemed relevant and appropriate by the Audit Committee, the Audit Committee recommended to the Company’s Board of Directors that the consolidated financial statements be included in the Company’s Annual Report on Form 10-K for the year ended December 31, 2018. This report is provided by the following independent directors, who comprise the Audit Committee:

Terrence C. Kearney (Chair)

Yuchun Lee

Bruce I. Sachs

Item 5 Advisory Vote to Approve Named Executive Officer Compensation

Our compensation program is designed to attract, retain and motivate talented and experienced individuals across all areas of our business and to align the interests of our executive officers with the interests of our shareholders as we seek to create value through the discovery, development and commercialization of transformative medicines.

In 2018, we received support from 96% of our shareholders on our say-on-pay proposal. We believe this support is consistent with our shareholders' understanding of our business model and the long-term value we are creating. We plan on continuing a high level of engagement with our shareholders regarding executive compensation.

Our focus is and continues to be maintaining the strong link between our compensation programs and our ability to continue to develop transformative medicines while delivering sustained company performance, with approximately 90% of our named executive officer compensation linked to performance. Our board of directors and MDCC reviewed our compensation programs and made the following key decisions with respect to 2018 compensation:

- We maintained the same compensation program design that we implemented in 2016, which closely ties pay with performance and has contributed to our short- and long-term successes
- The company's exceptional performance in 2018, as described in more detail in our *Compensation Discussion and Analysis* beginning on page 44 of this proxy statement, resulted in a leading rating (a company rating of 148.5 out of a potential 150) for 2018 and annual cash bonuses near the high end of the range for 2018
- Our CEO's base salary has been unchanged at \$1.3 million since 2014 and is aligned with the median CEO base salary of our peer companies. We increased the base salaries of certain of our other named executive officers by approximately 7% based on a comparative analysis with our industry peer group
- We increased our target equity grants by \$1.0 million for our CEO and \$500,000 for our executive vice presidents based on a market analysis of our peer group
- We continued our utilization of a mix of equity that consists of performance stock units that vest solely upon achievement of rigorous performance goals, stock options that only have value if our stock price appreciates and time-vesting restricted stock units that reward stock price appreciation but also serve as a long-term retention tool

Our executive compensation program, including our performance and the compensation earned by our named executive officers, is discussed in greater detail in the *Compensation Discussion and Analysis* section beginning on page 44 of this proxy statement. Our focus remains on maintaining the strong link between our compensation programs and our ability to continue to develop transformative medicines while delivering sustained revenues and earnings growth.

Based upon a vote of shareholders at a previous annual meeting of shareholders, following our board's recommendation for an annual advisory vote to approve executive compensation, we are presenting the following proposal, which gives you as a shareholder the opportunity to endorse or not endorse our 2018 executive compensation program by voting for or against the following resolution:

RESOLVED, that the shareholders approve, on an advisory basis, the compensation of our named executive officers, as disclosed in the Compensation Discussion and Analysis section, the Compensation and Equity Tables and the related narrative executive compensation disclosures contained in this proxy statement.

While the vote on this resolution is advisory in nature, and therefore will not bind us to take any particular action, our MDCC and board intend to consider carefully the shareholder vote resulting from the proposal in making future decisions regarding our executive compensation program.

Our board of directors recommends that you vote **FOR** the approval of the resolution set forth above. The affirmative vote by the holders of a majority of the votes cast in person or by proxy on this matter is required for the approval of this proposal.

Item 6 Shareholder Proposal Regarding Drug Pricing

We expect the following shareholder proposal will be presented for consideration at the 2019 annual meeting of shareholders. Our board of directors recommends a vote AGAINST the shareholder proposal for the reasons set forth following the proposal.

THE SHAREHOLDER PROPOSAL

Trinity Health, 766 Brady Avenue, Apartment 635, Bronx, NY 10462, the owner of at least \$2,000 worth of shares of our common stock as of December 11, 2018, has given notice that they intend to present for action at the 2019 annual meeting of shareholders the following resolution:

RESOLVED that shareholders of Vertex Pharmaceuticals Incorporated (“Vertex”) urge the Management Development and Compensation Committee (the “Committee”) to report annually to shareholders on the extent to which risks related to public concern over drug pricing strategies are integrated into Vertex’s incentive compensation policies, plans and programs (together “arrangements”) for senior executives. The report should include, but need not be limited to, discussion of whether (i) incentive compensation arrangements reward, or not penalize, senior executives for adopting pricing strategies, or making and honoring commitments about pricing, that incorporate public concern regarding prescription drug prices; and (ii) such concern is taken into account when setting financial targets for incentive compensation arrangements.

SUPPORTING STATEMENT

As long-term investors, we believe that senior executive compensation arrangements should reward the creation of sustainable long-term value. To that end, it is important that those arrangements align with company strategy and encourage responsible risk management.

A key risk facing drug companies is the increased criticism from the public and actions that legislators and regulators are taking regarding pharmaceutical prices. A March 2018 Kaiser Family Foundation poll found that 52% of respondents ranked lower drug prices as a “top priority” for the President and Congress. The White House released a “Blueprint” for lowering drug prices in May 2018. The NY Times reported that as of August 2018, twenty-four states have passed 37 bills this year to curb rising prescription drug costs. (<https://www.nytimes.com/2018/08/18/us/politics/states-drug-costs.html>).

Recent news articles identify pricing pressures that Vertex is facing. Officials from New York State’s Medicaid program have said that the cystic fibrosis drug Orkambi is not worth its price, a case “that is being closely watched around the country.” (<https://www.nytimes.com/2018/06/24/health/drug-prices-orkambi-new-york-.html>) As part of a two-year dispute between Vertex and the UK’s National Health Service over Orkambi cost-effectiveness, a committee of the House of Commons has requested to see documents the Company supplied to the government related to price and evidence supporting the drug’s benefit. (<https://pharmaphorum.com/news/vertex-told-to-reveal-cf-drug-price-as-mps-begin>).

We are concerned that the incentive compensation arrangements applicable to Vertex’s senior executives may not encourage them to take actions that result in lower short-term financial performance even when those actions may be in Vertex’s best long-term financial interests. Vesting for half of the performance share units Vertex’s named executive officers earn depends on one-year net product revenue goals, and for 2017, revenue growth for two of Vertex’s cystic fibrosis drugs was the most heavily weighted factor in the quantitative portion of the annual bonus formula. “Increase revenues and manage operating expenses” was another 2017 annual bonus quantitative factor. (2018 Proxy Statement, at 56-57).

The disclosure we request would allow shareholders to better assess the extent to which compensation arrangements encourage senior executives to responsibly manage risks relating to drug pricing and contribute to long-term value creation. We urge shareholders to vote for this Proposal.

YOUR COMPANY’S RESPONSE

Our board of directors recommends a vote AGAINST the shareholder proposal requesting an annual report on the extent to which risks related to public concern over drug pricing strategies are integrated into compensation arrangements for senior executives.

We are committed to creating transformative drugs for patients with serious diseases, and we believe that each of our approved products is an excellent example of the benefit that we can deliver to patients, providers and families of those affected by CF. Our goal is to ensure access to our medicines, return value to our shareholders and fuel the development of additional transformative medicines for the future.

KALYDECO, ORKAMBI and SYMDEKO/SYMKEVI are the only medicines that address the underlying cause of CF and KALYDECO and ORKAMBI have shown broad and sustained systemic benefits to patients with CF. The price of our products reflects many factors, including the relative benefit it provides to patients, the substantial time and cost it took to develop, the small number of patients eligible for treatment with each product and our ongoing commitment to invest in additional medicines for patients with CF and other diseases. The price balances the need for patient access, while garnering a fair return for our shareholders and ensuring sufficient investment in the discovery and development of future transformative medicines.

As part of our commitment to providing patients with access to our medicines, we have a comprehensive product support program that includes financial assistance for eligible patients. We provide one-on-one support to help patients with health insurance understand and navigate their health plans and the majority of our patients incur low out of pockets costs. Additionally, we provide co-pay assistance for eligible commercially insured patients that enroll in our product support program. For patients without health insurance who meet certain income and other eligibility criteria, we provide products for no charge.

We are in a high risk/high return industry. A very small percentage of the potential medicines investigated by biotechnology companies make it through the arduous research, development and regulatory process to be approved for patient use by the FDA, and only a small percentage of these approved medicines bring in enough revenue to recoup the average cost of development. As a result, the very few drug candidates that receive FDA approval and become commercially successful must support the entire research and development enterprise. Since our incorporation in 1989, the vast majority of our expenses have been related to our research and development efforts, with a small portion of our expenses allocated to sales and marketing. We have spent approximately \$12 billion for research and development for drug candidates for the treatment of CF, as well as several other disease areas, including HCV infection and HIV infection.

With respect to specific disclosure of the risks intended to be captured in the report requested by the proponent, we believe we have made adequate reference in our periodic reports under the Securities Exchange Act of 1934, as amended. For example, our annual report on Form 10-K, filed with the SEC on February 13, 2019, includes prominent risk factors referencing these risks, including a risk factor entitled “Government and other third-party payors seek to contain costs of health care through legislative and other means. If they fail to provide coverage and adequate reimbursement rates for our products, our revenues will be harmed.”

As such, we believe the proponent's requested report will not benefit our shareholders and will divert the time and attention of management and the board from our strategic initiatives and operations.

For all of the above reasons our board of directors recommends that you vote **AGAINST** the shareholder proposal regarding annual reporting on the extent to which risks related to public concern over drug pricing strategies are integrated into compensation arrangements for senior executives. The affirmative vote by the holders of a majority of the votes cast in person or by proxy on this matter is required for the approval of this proposal.

Item 7 Shareholder Proposal Regarding Lobbying

We expect the following shareholder proposal will be presented for consideration at the 2019 annual meeting of shareholders. Our board of directors recommends a vote AGAINST the shareholder proposal for the reasons set forth following the proposal.

THE SHAREHOLDER PROPOSAL

Friends Fiduciary Corporation, 1650 Arch Street, Suite 1904, Philadelphia, Pennsylvania 19103, an owner of at least \$2,000 worth of shares of our common stock as of December 18, 2018 has given notice that it intends to present for action at the 2019 annual meeting of shareholders the following resolution:

WHEREAS, we believe in full disclosure of our company's direct and indirect lobbying activities and expenditures to assess whether Vertex's lobbying is consistent with its expressed goals and in the best interests of shareholders.

RESOLVED, the shareholders of Vertex Pharmaceuticals Incorporated ("Vertex") request the preparation of a report, updated annually, disclosing:

1. Company policy and procedures governing lobbying, both direct and indirect, and grassroots lobbying communications.
2. Payments by Vertex used for (a) direct or indirect lobbying or (b) grassroots lobbying communications, in each case including the amount of the payment and the recipient.
3. Vertex's membership in and payments to any tax-exempt organization that writes and endorses model legislation.
4. Description of the decision making process and oversight by management and the Board for making payments described in section 2 and 3 above.

For purposes of this proposal, a "grassroots lobbying communication" is a communication directed to the general public that (a) refers to specific legislation or regulation, (b) reflects a view on the legislation or regulation and (c) encourages the recipient of the communication to take action with respect to the legislation or regulation. "Indirect lobbying" is lobbying engaged in by a trade association or other organization of which Vertex is a member.

Both "direct and indirect lobbying" and "grassroots lobbying communications" include efforts at the local, state and federal levels.

The report shall be presented to the Audit Committee or other relevant oversight committees and posted on Vertex's website.

SUPPORTING STATEMENT

We encourage transparency in the use of corporate funds to influence legislation and regulation, both directly and indirectly. Vertex spent over \$3 million in 2016 and 2017 on federal lobbying (opensecrets.org). This figure does not include lobbying expenditures to influence legislation in states, where Vertex also lobbies but disclosure is uneven or absent. For example, Vertex had 120 lobbyists in 35 states in 2017 (<http://www.followthemoney.org/>), and has spent over \$310,000 on lobbying in California in 2016-2017. Vertex's lobbying has drawn media attention ("Is Big Pharma Getting 'Patient Advocates' to Do Its Lobbying Work?" *The Daily Beast*, April 6, 2018), ("Drugmakers Dramatically Boosted Lobbying Spending in Trump's First Quarter," *Salon*, April 22, 2017).

Vertex is listed as a member of the Biotechnology Innovation Organization, which spent \$18.62 million on lobbying in 2016 and 2017. Vertex does not disclose its trade association memberships, nor payments and the portions used for lobbying.

Transparent reporting would reveal whether company assets are being used for objectives contrary to Vertex's long-term interests. We are concerned that Vertex's lack of lobbying disclosures, including lobbying done indirectly by trade associations and other organizations, and any potential negative publicity for opposing drug price initiatives, may present reputational risks for Vertex.

YOUR COMPANY'S RESPONSE

Our board of directors recommends a vote AGAINST the shareholder proposal to prepare a report on our policies and activities with respect to lobbying.

We engage with public policymakers, where legal and appropriate, when we believe it will serve the best interests of our company, our shareholders, employees, patients and other stakeholders. The associations and coalitions to which we belong perform many valuable functions. Lobbying is not the primary focus of these entities, but it is an element of their role, and a portion of the dues that we and other members pay to such organizations may be partially used, in their sole discretion, to engage in certain lobbying activities. We do not direct how these funds are used. Accordingly, our board believes that additional disclosures regarding payments to these trade associations would not necessarily present an accurate reflection of our positions on certain public policy issues.

Our board acknowledges the interests of shareholders in information about our participation in the political process. We routinely provide comprehensive information regarding our lobbying activities to comply with applicable federal and state disclosure regulations, including filing quarterly reports on our federal lobbying activity in compliance with the Honest Leadership and Open Government Act of 2007. However, our board believes that the proposal's additional detailed reporting obligation would be duplicative of existing disclosures and that it would impose an unnecessary administrative burden and expense on the company when sufficient disclosure already exists.

For all of the above reasons our board of directors recommends that you vote **AGAINST** the shareholder proposal regarding a report on lobbying activities. The affirmative vote by the holders of a majority of the votes cast in person or by proxy on this matter is required for the approval of this proposal.

COMPENSATION DISCUSSION AND ANALYSIS

Letter from Management Development and Compensation Committee to Our Shareholders

Dear Fellow Shareholder,

The Management Development and Compensation Committee's stewardship of Vertex's compensation programs is guided by Vertex's mission of developing transformative medicines for people with serious diseases and by so doing, creating superior value for our shareholders. Toward that end, we have designed the company's compensation programs to closely align management's incentives with Vertex's strategic long- and short-term goals and with the interests of Vertex's shareholders. We believe that this alignment has contributed to Vertex's accomplishments over the last several years as it has increased its revenues significantly each year, built its financial strength, advanced its pipeline and continued to execute its business strategy. These accomplishments have been recognized by the company's shareholders and have been reflected in the increasing value that the company's shareholders have attributed to the company. Vertex's market capitalization has increased by more than 500% from approximately \$7 billion in early 2012 to more than \$45 billion in early 2019.

We take seriously our role in the governance of compensation programs and the importance of attracting and retaining critical executive talent as the company continues to expand and operate in an increasingly complex industry. The success of the company and the execution of Vertex's business strategy over the last several years has depended upon the stability and operational excellence of our senior executive team.

In 2018, Vertex had a remarkable year as it accelerated the development of our triple-combination regimens for CF, advanced numerous other research and development programs positioning itself for continued growth and increased revenues, operating income and cash flows. This success in 2018 reflects both the company's exceptional execution in 2018 and the overall corporate strategy that the company's core management team has championed since 2012.

As a result, our executives received above-target cash bonuses and payouts on performance stock unit awards based both on one-year business and financial goals and three-year research and development goals. We believe these outcomes are aligned with our commitment to linking pay to performance. Looking ahead, we will continue to focus on maintaining the strong link between Vertex's compensation programs and its long- and short-term strategic objectives. Central to these objectives and continuing to develop transformative medicines to treat serious diseases while delivering sustained revenues and earnings growth is our ability to attract and retain a highly-functioning executive team.

Sincerely,

Bruce I. Sachs (*Chair*)

Terrence C. Kearney

Elaine S. Ullian

William D. Young

Overview

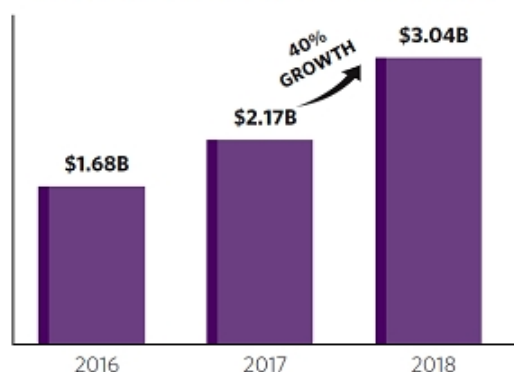
By all measures, 2018 was an extraordinary year for Vertex as we continued to execute on our strategy of investing in scientific innovation to create transformative medicines for people with serious diseases. In 2018, we obtained approval for and launched SYMDEKO/SYMKEVI, our third medicine for CF, and accelerated the development of our triple combination regimens, which we believe will allow us to treat the vast majority of patients with CF and will provide an improved treatment option to many patients currently taking our medicines. Outside of CF, we advanced our Phase 2 clinical program in pain, initiated our first clinical trial of a potential medicine for alpha-1 anti-trypsin deficiency and the first clinical trial for CTX001, which we are co-developing with CRISPR Therapeutics, as a potential treatment for beta thalassemia and sickle cell disease. Our exceptional performance in 2018 included 40% growth in total product revenues and increasing cash flows. As we enter 2019, we are on track to deliver more new transformative medicines for patients thereby increasing revenues, expanding operating income and creating long-term shareholder value.

Financial Performance

Our CF medicines, KALYDECO, ORKAMBI and SYMDEKO/SYMKEVI, are now transforming the lives of eligible patients around the globe and driving our financial performance.

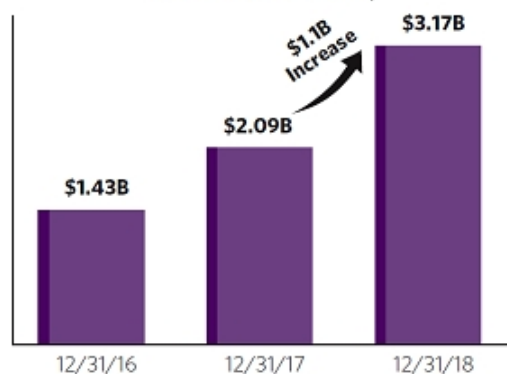
- Our CF net product revenues increased to \$3.04 billion in 2018, up 40% as compared to 2017
- We exceeded our initial CF net product revenue guidance in 2018 by \$313 million (\$3.04 billion as compared to the mid-point of our initial guidance of \$2.73 billion)
- Our GAAP net income increased to \$2.1 billion in 2018 from GAAP net income of \$263 million in 2017
- Our non-GAAP net income increased to \$1.1 billion in 2018, up \$564 million, or 114%, from 2017, driven by our increased net product revenues (a reconciliation of non-GAAP net income is provided in Appendix C)
- We increased our net cash position by approximately \$1.1 billion in 2018, to approximately \$3.2 billion
- In 2019, we expect to further increase CF product revenues by approximately 15% and to continue generating substantial cash flows
- Beyond 2019, our CF net product revenues and operating income are positioned for substantial further growth if we are successful in obtaining approval for a triple combination regimen

INCREASING CF NET PRODUCT REVENUES

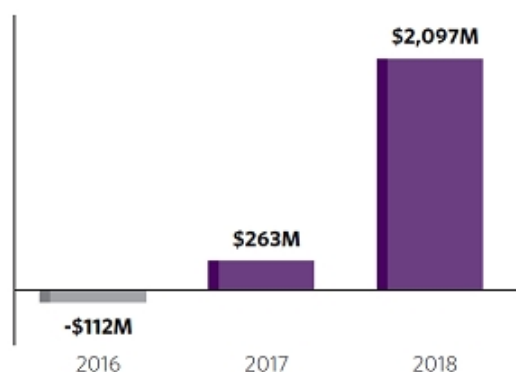


INCREASING FINANCIAL STRENGTH

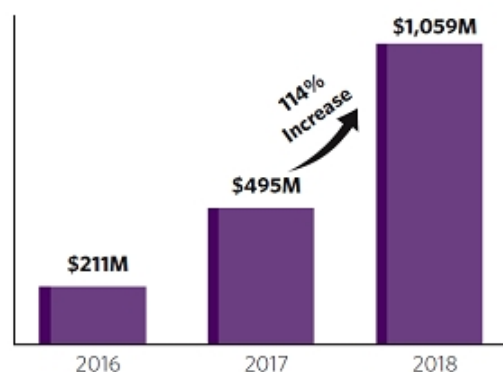
(Cash, Cash Equivalents and Marketable Securities)



GAAP NET INCOME (LOSS)

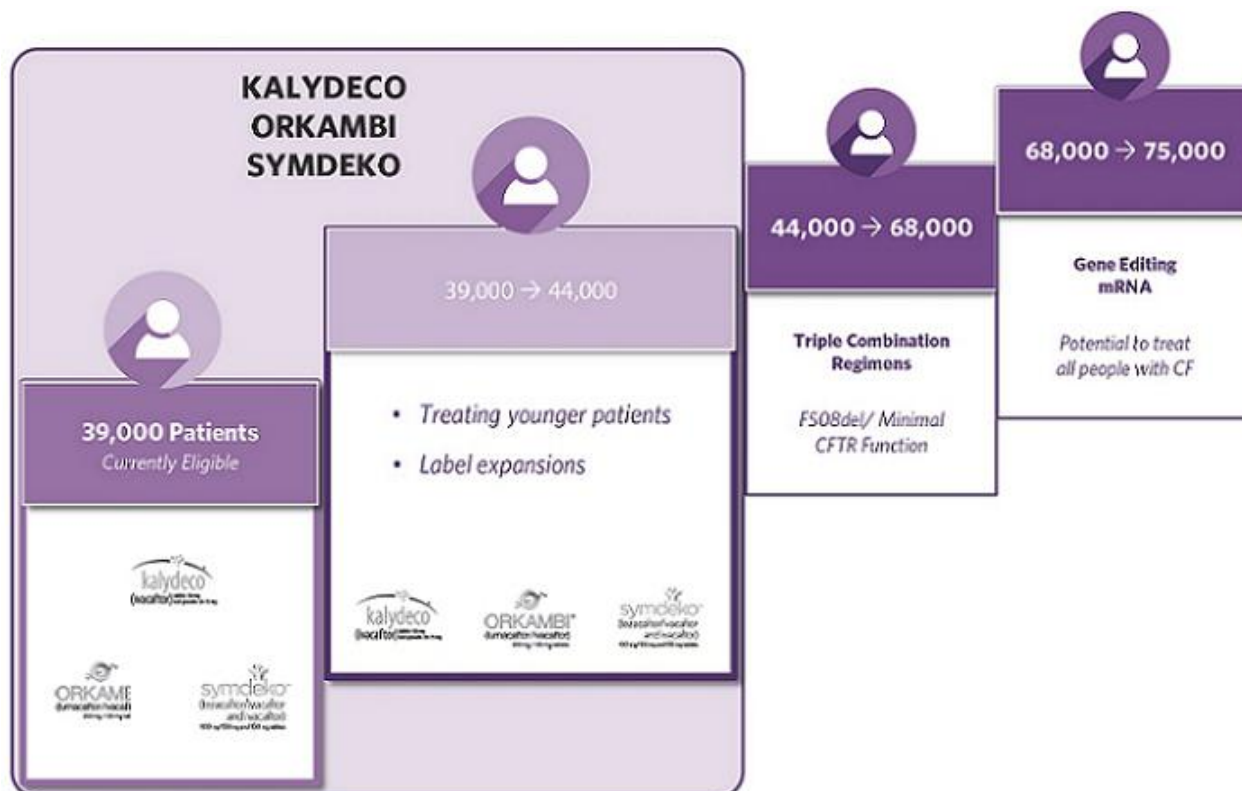


Non-GAAP NET INCOME



CF Pipeline

Advances in our pipeline and our strategic execution have moved us closer to our goal of delivering highly effective treatments to all patients with CF. In January 2012, KALYDECO was first approved to treat approximately 1,000 patients with the G551D mutation in the United States. Since then, we have followed a focused strategy of developing new medicines for CF: expanding the number of patients eligible for our medicines and seeking improved treatment options for all patients. We believe our triple combination regimens will provide the first treatment for the underlying cause of CF for patients with the F508del mutation and a mutation that provides minimal function (referred to as F508del/Min patients) as well as an improved treatment option (greater efficacy) for the vast majority of CF patients currently using our medicines.



CF Medicines

Since the beginning of 2018, we have:

- Obtained approval for SYMDEKO/SYMKEVI (tezacaftor in combination with ivacaftor) in the United States in early 2018 and in the European Union in late 2018
- Successfully launched SYMDEKO in the United States
- Obtained regulatory approvals and advanced clinical trials designed to provide younger children access to our CF medicines
- Entered into innovative long-term access agreements in ex-U.S markets, including Australia, Denmark, Israel, Luxembourg and Sweden

Triple Combinations Regimens

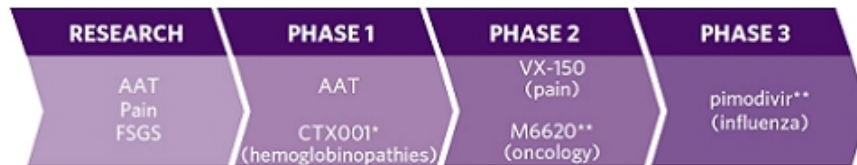
Since the beginning of 2018, we have:

- Accelerated our Phase 3 development program for triple combination regimens
- Announced positive data from two Phase 3 clinical trials evaluating the triple combination of VX-659, tezacaftor and ivacaftor in F508del/Min patients and F508del homozygous patients 12 years of age or older
- Announced positive data from two Phase 3 clinical trials evaluating the triple combination of VX-445, tezacaftor and ivacaftor in F508del/Min patients and F508del homozygous patients 12 years of age or older
- Positioned ourselves to file for one triple combination regimen — an NDA in the United States in the third quarter of 2019 and an MAA in the European Union in the fourth quarter of 2019
- Initiated a Phase 1 clinical trial to evaluate VX-121, an additional next-generation CFTR corrector

Non-CF Pipeline

Over the last decade, we have demonstrated an ability to serially discover and develop multiple transformative medicines for serious diseases. In 2018, we and our collaborators continued our serial innovation, advancing promising non-CF programs for important diseases. Specifically, since the beginning of 2018, we have:

- Initiated a Phase 1 clinical trial for a novel drug candidate for alpha-1 antitrypsin deficiency
- Initiated Phase 1/2 clinical trials of CTX001, an investigational gene-editing treatment that we are evaluating as a potential treatment for beta-thalassemia and sickle cell disease
- Obtained clinical proof-of-concept from Phase 2 clinical trials evaluating VX-150, a selective non-opioid Nav1.8 inhibitor, as a potential treatment for pain
- Advanced our research program for focal segmental glomerulosclerosis into late-stage preclinical development
- Janssen Pharmaceuticals, our collaborator, is conducting Phase 3 development of pimodivir as a potential treatment for influenza

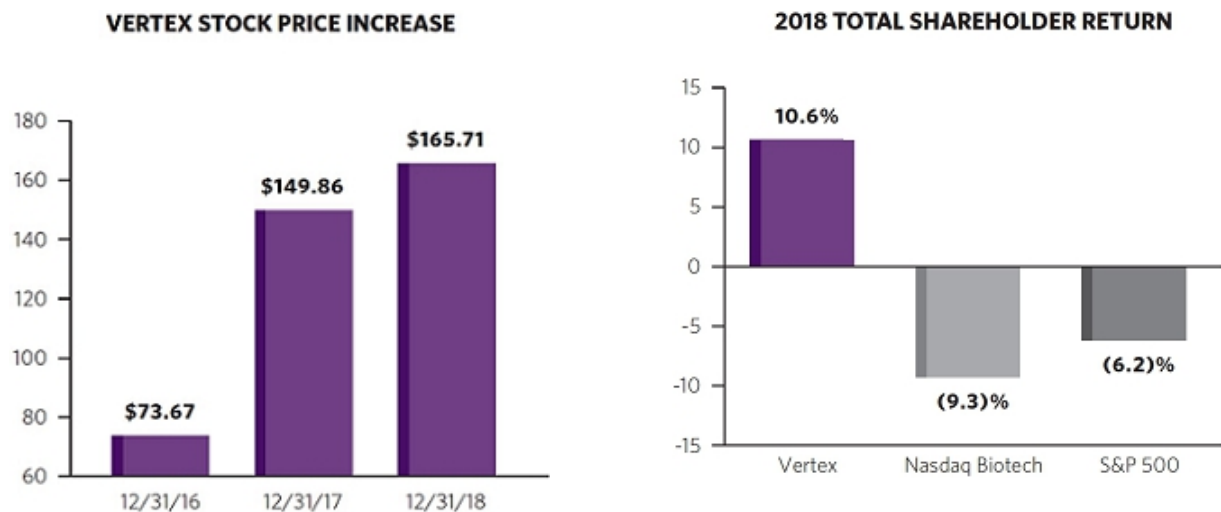


* We are co-developing CTX001 with CRISPR Therapeutics

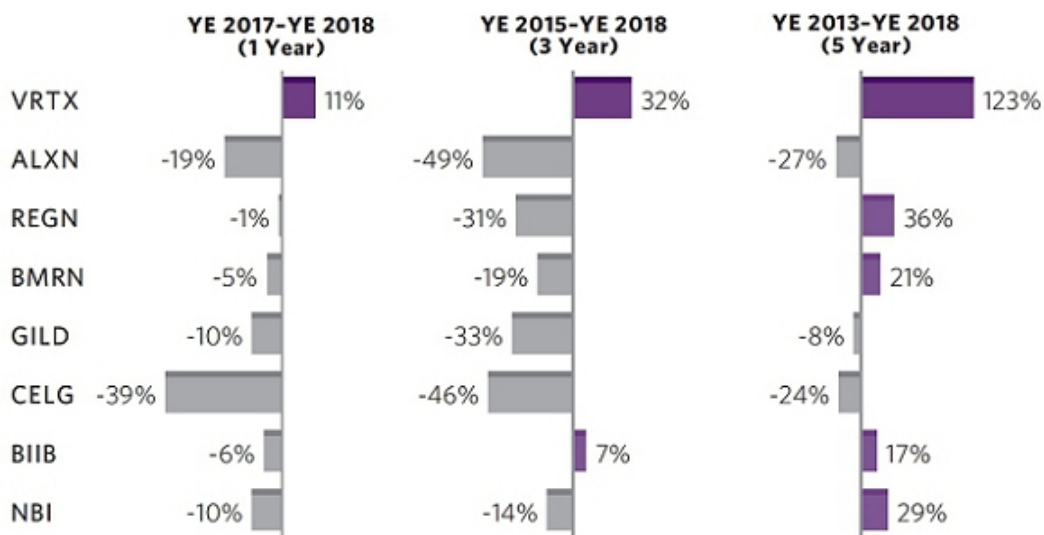
** We have outlicensed pimodivir to Janssen Pharmaceuticals and M6620 to Merck KGaA

Increased Shareholder Value

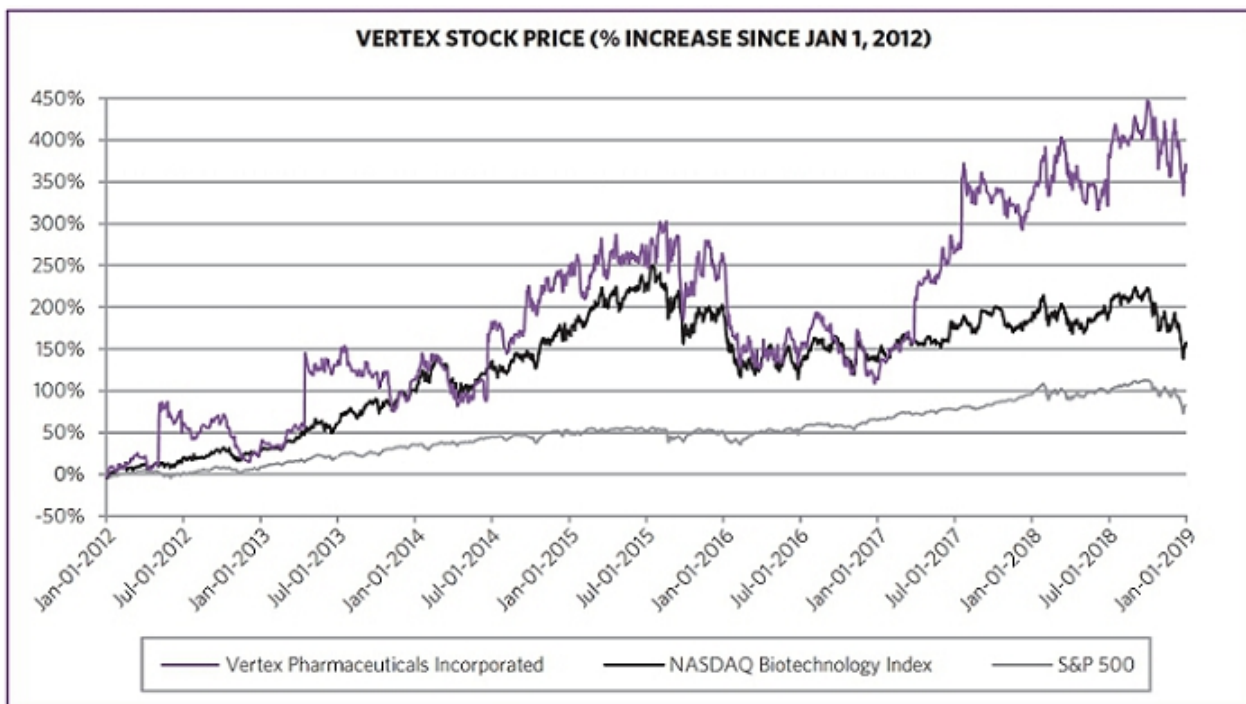
Driven by our financial performance and our pipeline success, our stock price increased by 11% from \$149.86 per share to \$165.71 per share in from December 31, 2017 to December 31, 2018. In 2018, our total shareholder return was positive 10.6% as compared to negative total shareholder returns for the Nasdaq Biotechnology Index, or NBI, and the S&P 500 index.



We were pleased with our performance in 2018; however, the performance of biotechnology companies like ours is best measured over the long term and in comparison with their peers, rather than in one-year increments and in isolation. The following chart shows our total shareholder return during the 1-year, 3-year and 5-year periods ending December 31, 2018 compared to the NBI and the following members of our peer group: Alexion, Regeneron, BioMarin, Gilead, Celgene and Biogen. These peers are the companies we consider most similar to our company based on their business models (see pages 51 and 52).



The following chart shows our total shareholder return from the beginning of 2012, when KALYDECO was first approved, through February 2019 relative to the S&P 500 and the NBI.



2018 Compensation Decisions and Pay-for Performance

In 2018, we received support from 96% of our shareholders on our say-on-pay proposal. We believe this support is consistent with our long-term shareholders' understanding of our business model and the long-term value we are creating. Our focus has been and continues to be on maintaining the strong link between our compensation programs and our ability to continue to develop transformative medicines while delivering sustained company performance. **Our compensation program is highly performance-based, with approximately 90% of our NEO compensation tied to performance.** Retention of our talented executives is critical, as their outstanding performance over the last seven years has led to the advancement of the company and the significant shareholder value that has been created.

In 2018, our board of directors and management development and compensation committee, or MDCC, reviewed our compensation programs and made the following key decisions:

- **Program Design:** We maintained the same compensation program design that we implemented in 2016, which we believe closely ties pay with performance and has contributed to our short- and long-term successes.
- **Base Salary:** Our CEO's salary has been unchanged at \$1.3 million since 2014 and is aligned with the median CEO base salary of our peer companies. We increased the base salaries of certain of our other named executive officers by approximately 7% based on a comparative analysis with companies in our peer group.
- **Annual Cash Bonus:** The company's exceptional performance in 2018, as described above, resulted in a leading rating (a company rating of 148.5 out of a potential 150) for 2018 and annual cash bonuses near the high end of the range for 2018, commensurate with this performance.
- **Long-Term Equity Program:**
 - We continued utilization of a mix of equity that consists of performance stock units that vest solely upon achievement of rigorous performance goals, stock options that only have value if our stock price appreciates and time-vesting restricted stock units that reward stock price appreciation but also serve as a retention tool.
 - We increased our target equity grants by \$1.0 million for our CEO and \$500,000 for our executive vice presidents based on a market analysis with companies in our peer group.
 - In early 2018, the MDCC established financial and non-financial metrics for the PSUs, with payouts earned based on achievement of these metrics. 50% of the PSUs were tied to CF net product revenues in 2018, while the remaining 50% are tied to specific clinical and research milestones over a three-year period.

Compensation Governance Practices

We continue to implement and maintain leading practices in our compensation program, shareholder outreach and related areas.

What We Do	What We Don't Do
Caps on awards	No executive perquisites
Multiple performance factors	No supplemental pension benefits for executives
Range of awards; not all or nothing	No single-trigger vesting in connection with a change-in-control for equity awards
Compensation recoupment (clawback) policy	No hedging or pledging or speculative transactions in our securities by directors and executive officers
Balance of Short- and Long-term Incentives (through annual cash bonuses and equity awards)	No re-pricing of equity awards without shareholder approval
Executive and Non-Employee Director Stock Ownership Guidelines	No payment of dividends on unvested performance shares or units
No gross-ups	
Independent compensation consultant	
Robust shareholder outreach	

Detailed Discussion and Analysis

This section discusses the principles underlying our policies and decisions with respect to the compensation of our “named executive officers” and all material factors we believe are relevant to an analysis of these policies and decisions. Our named executive officers (or “NEOs”) for 2018 are listed below. Our NEOs for 2018 include certain former executive officers as required by SEC rules, and the following discussion includes information relating to the compensation of these former executive officers for the prior fiscal year. However, general references below to “our NEOs” relate solely to our continuing NEOs and should be interpreted accordingly.

Name	Position
Jeffrey M. Leiden	Chairman, Chief Executive Officer and President
Stuart A. Arbuckle	Executive Vice President, Chief Commercial Officer
Michael Parini	Executive Vice President and Chief Legal and Administrative Officer
Amit Sachdev	Executive Vice President and Chief Regulatory Officer
Jeff Chodakewitz	Former Executive Vice President, Global Medicines Development and Medical Affairs and Chief Medical Officer
Thomas Graney	Former Senior Vice President and Chief Financial Officer
Ian F. Smith	Former Executive Vice President and Chief Operating Officer and Interim Chief Financial Officer

Compensation Philosophy

Our MDCC regularly reviews the elements of the individual compensation packages for our CEO and executive officers to achieve the following primary objectives:

- attract, retain and motivate talented and experienced individuals across all areas of our business;
- to align the interests of our executive officers with the interests of our shareholders as we seek to create value through the discovery, development and commercialization of transformative medicines; and
- ensure that the vast majority of compensation is performance-based.

Our executive officers have had long and varied careers and possess experiences and skills that make them extremely valuable members of our executive team and to our company as a whole. They have been instrumental in building Vertex into the company it is today, with a leadership position in the treatment of CF, a CF pipeline and non-CF pipeline that have advanced significantly over the last several years, increased revenues, and an established strong financial profile. All of these factors position Vertex to achieve its strategic objectives in future years.

Our MDCC and our board of directors seek to connect the achievement of our strategic objectives with our compensation program in a number of ways, including through detailed and measurable company goals that underlie our annual cash bonuses and the performance goals that are included in our equity awards. Our company goals involve a mix of goals relating to revenues from our current products, achievement of research and development objectives, our organizational capability and maintenance of our financial strength. These objectives are selected specifically because they are considered by our board to be measurable milestones that our company must achieve if it is to maintain its significant revenue growth and increase profitability. Our MDCC and board expects to continue to seek to balance the use of financial metrics and research and development goals in order to motivate our executive team to increase revenues and manage operating expenses, while providing appropriate incentives for our management to continue to make appropriate investments in our business.

In determining compensation, we consider compensation paid to similar companies as reference points, but do not strictly benchmark or target compensation at any particular level. Rather, the MDCC retains flexibility to structure compensation based on good governance practices and our objectives of building our company and creating shareholder value.

Compensation Decision-Making Process

Role of MDCC and Chief Executive Officer in Setting Executive Compensation

The MDCC has responsibility for overseeing the design, development and implementation of the compensation program for our chief executive officer and other executive officers. The MDCC evaluates the performance of our chief executive officer and other executive officers. Our chief executive officer and our human resources group assist the MDCC in evaluating the performance of our other executive officers, including the named executive officers other than the chief executive officer. Our chief executive officer does not make any recommendations to the MDCC regarding his own compensation and does not participate in the portions of MDCC meetings or meetings of the board of directors when his compensation is discussed and determined.

The members of the MDCC, each of whom is an independent director, together with the other independent directors, make final compensation decisions for the CEO’s and other executive officers’ compensation levels based on these assessments.

Role of Compensation Consultant

The MDCC (i) is directly responsible for the appointment and oversight of its compensation consultants, (ii) has the authority to determine the fees that we pay for services provided by such compensation consultants and (iii) prior to engaging any compensation consultant, considers applicable factors potentially affecting the independence of the compensation consultant, including the factors set forth in Nasdaq Marketplace Rule 5605(d)(3).

Annually, the MDCC has engaged a compensation consultant to conduct an analysis of all elements of compensation paid to our executive officers, including our NEOs, compared to similar elements paid to similarly situated executives at companies in our peer group and to provide a written report and presentation of findings at the meeting of the MDCC that occurs in July each year. In 2018, the MDCC selected Pearl Meyer as its compensation consultant to conduct and present this analysis to the MDCC.

Pearl Meyer only provides, and is compensated for, advice provided to us at the direction of the MDCC. The MDCC considered the following information provided to it by Pearl Meyer:

- Pearl Meyer's policies and procedures designed to prevent conflicts of interest;
- that fees paid by us to Pearl Meyer represent less than 1% of Pearl Meyer's total annual revenues;
- the absence of business and personal relationships between the compensation consultant and the MDCC or any of our executive officers; and
- that Pearl Meyer's partners, consultants and employees who provide services to the MDCC, and their immediate family members, do not own shares of our common stock.

Based on these, and other factors considered by the MDCC, the MDCC determined that Pearl Meyer's work did not raise a conflict of interest.

Use of Peer Group Companies

In order to make judgments about elements of executive compensation on a competitive basis, the MDCC and our board of directors considers information about the compensation practices of a representative group of companies with whom we compete for executive talent, or Peer Group. We conduct a detailed analysis to select companies for this Peer Group on the basis of similarity and complexity of business model. Selecting a peer group for our company is difficult because of the limited number of companies that are at a similar stage of development and our level of revenues. As a result, we use a mix of quantitative and qualitative factors in order to establish our peers, including the following:

Factor Considered	What We Look For
Similar industry	Biotechnology or pharmaceutical industry
Importance of medicines to patients and society	Transformative medicines for serious diseases; therapeutics for unmet needs
Recognized focus on innovation	Breakthrough Therapy designations, priority review and/or other markers indicating unmet need
Global operations	Significant operations outside the U.S.
Commercial operations	Marketing and selling approved medicines
Significant R&D investment	Greater than \$1B or 25% of revenue
Number of employees	Greater than 750 employees
Market capitalization and significance to broader economy	Market cap at least ¼ our size and/or inclusion on S&P 500 or NASDAQ 100
Labor market competitor	Companies we compete with for executive talent
Companies that use Vertex as a peer	Inclusion of Vertex in proxy reported peer group

Although we consider revenue as a factor, we do not emphasize it, as we do not believe it is an adequate reflection of whether companies have a similar business model or complexity particularly at our stage of maturity. A company with similar revenues may not have global or commercial operations like we have, or it may focus on generic medicines rather than innovative therapies; either of these factors would result in a different business model that required a relatively smaller investment in research and development. Moreover, companies with similar revenues may not focus on innovative therapies such as those designated as Breakthrough Therapies by the FDA, a designation which can expedite the development and review of medicines that are intended to treat serious conditions where preliminary clinical evidence indicates that the medicine may demonstrate substantial improvement over available therapy. As a result, we believe the factors listed above provide a better way to assess similarity versus a reliance on the combination of revenue and industry. We also note that it is unlikely for companies to align on all the factors listed above, so we look for companies meeting a majority of the criteria although we place greater weight on companies focused on innovation and importance of medicines to patients and society as we believe these are the key drivers of our business model. We also focus on market capitalization over revenue because we believe it is a better indicator of the complexity of a company's business model in our industry. On a regular basis, we review and revise the list of companies with the goal of maintaining a group of comparators comprised of at least twelve companies.

As a result of this analysis, and on the basis of the criteria listed above, the MDCC selected the following comparator companies for 2018, which were the same comparator companies that were used in 2017.

The Core Peers are the peers we consider most similar to us in terms of business model.

2018 Peer Companies	
Core Peers	Alexion Pharmaceuticals, Inc. Biogen Inc. BioMarin Pharmaceutical Inc. Celgene Corporation Gilead Sciences, Inc. Regeneron Pharmaceuticals, Inc.
Other Peers	Abbvie Inc. Alkermes plc Amgen Inc. Jazz Pharmaceuticals plc Incyte Corporation Shire plc United Therapeutics Corporation

We believe, based on our discussions with major shareholders, that the Peer Group identified by our MDCC is consistent with our shareholders' views of our relevant peers in the biotechnology industry. In addition, the Peer Group companies have many of the business model characteristics that we seek in comparator companies as set forth in the following table.

Company Information		R&D Expense ⁽¹⁾		Operational Focus		Innovative and Importance of Medicines			Uses Vertex as Peer	Market Position	
		\$	% of Revenue			Orphan/Unmet Clinical Need	Breakthrough Therapy Designations ⁽²⁾	Innovative Drugs in Last 8 Years ⁽³⁾		Nasdaq 100	S&P 500
Company	Industry	(millions)		Global	Commercial						
AbbVie	Biotech	\$ 10,753	33%	✓	✓	✓	6	5			✓
Alexion	Biotech	\$ 1,913	46%	✓	✓	✓	1	3	✓	✓	✓
Alkermes	Biotech	\$ 425	39%	✓	✓	✓	0	1	✓		
Amgen	Biotech	\$ 3,737	16%	✓	✓	✓	1	6		✓	✓
Biogen	Biotech	\$ 2,710	20%	✓	✓	✓	0	4	✓	✓	✓
BioMarin	Biotech	\$ 696	47%	✓	✓	✓	1	3	✓	✓	
Celgene	Biotech	\$ 5,673	37%	✓	✓	✓	0	4		✓	✓
Gilead	Biotech	\$ 5,018	23%	✓	✓	✓	4	7		✓	✓
Incyte	Biotech	\$ 1,208	64%	✓	✓	✓	0	2	✓	✓	✓
Jazz	Pharma	\$ 428	23%	✓	✓	✓	0	2	✓		
Regeneron	Biotech	\$ 2,186	33%	✓	✓	✓	3	5	✓	✓	✓
Shire	Biotech	\$ 1,695	11%	✓	✓	✓	0	5			
United Therapeutics	Biotech	\$ 358	22%	✓	✓	✓	0	3	✓		
Vertex	Biotech	\$ 1,445	47%	✓	✓	✓	7	4		✓	✓

(1) R&D Expense (including certain expenses related to intangible assets) and R&D Expense as a % of Revenue reflect the trailing data for the most recent four quarters as of December 31, 2018 per the S&P Capital IQ database.

(2) Per Center for Drug Evaluation and Research (CDER) Breakthrough Therapy Approvals report, which lists approvals for breakthrough therapy designated drugs.

(3) Innovative drugs in the last eight years include: VIEKIRA PAK, IMBRUVICA, VENCLEXTA, ORILISSA and MAVYRET (AbbVie), STRENSIQ, ULTOMIRIS and KANUMA (Alexion), ARISTADA (Alkermes), AIMOVIG, BLINCYTO, XGEVA, PROLIA, KYPROLIS and PARSABIV (Amgen), TECFIDERA, ALPROLIX, SPINRAZA and ELOCTATE (Biogen), BRINEURA, PALYNZIQ and VIMIZIM (BioMarin), IDHIFA, POMALYST, ABRAXANE and OTEZLA (Celgene), YESCARTA, SOVALDI, HARVONI, VEMLIDY, CAYSTON, ZYDELIG and BIKTARVY (Gilead), JAKAFI and OLUMIANT (Incyte), VYXEOS and DEFITELIO (Jazz), DUPIXENT, LIBTAYO, PRALUENT, EYLEA and ZALTRAP (Regeneron), MYDAYIS, TAKHZYRO, FIRAZYR, NATPARA and GATTEX (Shire) and REMODULIN, ORENITRAM and UNITUXIN (United Therapeutics).

We do not strictly benchmark to a particular level of compensation relative to compensation levels at the Peer Group companies, but rather make a judgment about where each executive should fall in comparison with executives with similar responsibilities at the Peer Group companies. We believe this should mitigate concerns regarding our Peer Group including companies that have significantly higher revenues than our current revenues. The MDCC looks at Peer Group information to confirm that our compensation levels are competitive with those of the Peer Group companies and consistent with our compensation philosophy. In addition, the MDCC reviews broader industry specific executive compensation surveys published by Radford, Mercer SIRS and Willis Towers Watson, but does not make any material compensation decisions based on any particular company participants in such surveys.

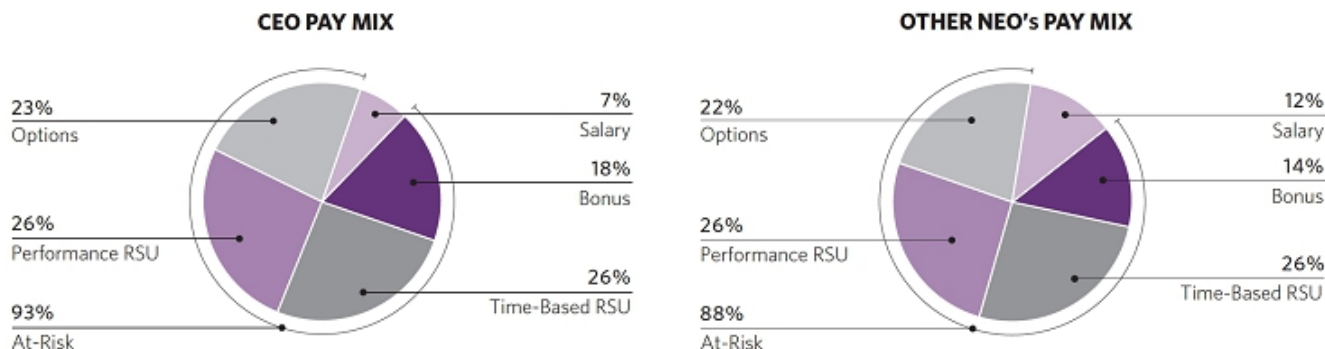
Elements of Annual Compensation

Our practice is to target total direct compensation including base salary, annual cash incentives targets, and long-term incentive targets at market competitive levels depending upon the NEO's responsibilities, expertise and experience. Our executive compensation program uses a mix of long-term equity compensation awards in the form of stock options and performance restricted stock unit awards and time-based restricted stock units to incent and reward those individuals who make the greatest contribution to our company performance over time. For the NEOs, this means compensation is primarily in the form of equity and directly tied to changes in shareholder value over time.

Each year we review the balance of elements of our executive compensation program to ensure that they are appropriately designed in light of our goals to align the program with our shareholders' interests, the competitive environment and our business strategy.

Compensation Program

As shown in the following charts, our compensation program places an emphasis on performance-linked compensation, with approximately 90% of our NEO compensation tied to performance.



The charts above represent the actual values, and exclude the compensation of former executive officers.

Performance-Linked Value-Based Program

We have a performance-linked program that is consistent with programs implemented by our peers and allows us to attract, retain and motivate talented and experienced individuals across all areas of our business. We focus on performance-linked elements as follows:

Compensation Element	Performance Link
Annual Cash Bonus	Annual bonus dependent on company performance factors and individual performance
Equity Awards	Grant date value of equity awards based on individual performance
Performance Stock Unit Awards	<ul style="list-style-type: none"> 50% of PSUs with range of shares issued 0% to 200% of target based on one year financial metric (vesting in installments) 50% of PSUs with range of shares issued 0% to 200% of target based on three-year non-financial metrics (cliff-vesting)
Stock Options	<ul style="list-style-type: none"> Value of awards increases or decreases based on increases or decreases in stock price Value of awards tied to potential increases in share price with no value to executive unless share price increases
Time-Based Restricted Stock Units	<ul style="list-style-type: none"> Value of shares granted based on individual performance from 0% to 150% Value of awards increases or decreases based on increases or decreases in stock price

More specifically:

- Performance Stock Units.** Our NEOs receive 35% of their annual target equity compensation in the form of PSUs. The PSUs vest, if at all, based half on financial goals (to date, CF net product revenue goals over a one-year period) and half on non-financial goals (to date, multiple clinical milestones over a three year period). The potential shares issuable pursuant to the performance stock unit awards range from 0% to 200% of the target shares with the number of shares actually issued based on financial and non-financial measures. The MDCC selected revenue and clinical development milestones because shareholders and analysts rely heavily on these metrics to understand the underlying condition and the performance of our business. In addition, achievement of these metrics would indicate successful execution toward our long-term strategic objectives of expanding our CF franchise and diversifying our product portfolio.
- Stock Options.** Our NEOs receive 30% of their annual target equity value in the form of stock options. We use stock option awards because we believe stock options are performance-based and provide alignment with shareholders as executives are rewarded for corporate performance only if the stock price appreciates.
- Time-based Stock Units.** Our NEOs receive 35% of their annual target equity compensation in the form of time-based restricted stock units. We believe that with a majority of the annual long-term incentive award at risk based on our successful execution of our strategic objectives and on stock price appreciation, it is important to have a smaller portion of the annual award focused on retaining our key executive talent. As a result, we believe time-based restricted stock units encourage retention while also providing immediate alignment with our shareholders.

Base Salary

The MDCC recommends base salaries for each of our executive officers based on multiple factors, including a competitive market analysis on a position-by-position basis. Annually, the MDCC reviews tables showing a comparison of each executive's prior year base salary and cash bonus opportunity, measured at the target level, to salaries and cash bonuses reported for executives with similar responsibilities at comparable companies. We do not strictly benchmark to a particular level of compensation relative to compensation levels at the Peer Group companies, but rather make a judgment about where each executive should fall in comparison with executives with similar responsibilities at the Peer Group companies, taking into account the executive's general level of experience and capability, the significance of his or her job responsibilities to the achievement of our business strategy and company goals, and general performance over time, including demonstration of the values and desirable behaviors under our values into practice program. On the basis of that information, including compensation at Peer Group companies, and taking into consideration the executive's base salary for the previous year, the MDCC recommends an appropriate salary for each executive officer, subject to final approval by our independent directors. Our current base salaries for our named executive officers approximate the median base salaries for peer counterparts at companies in our Peer Group.

Dr. Leiden's base salary has been \$1,300,000 since 2014. In 2018, we increased Mr. Arbuckle's base salary from \$700,000 to \$750,000 and Mr. Parini's base salary from \$725,000 to \$775,000 after a review of the base salaries of peers and in recognition of their role and contributions to the company. Dr. Chodakewitz, Mr. Graney and Mr. Smith's, our former executive officers, base salaries were \$618,000, \$550,000 and \$850,000 respectively.

Name	2019 Base Salary	Approximate Peer Ranking (Percentile) ⁽¹⁾
Jeffrey M. Leiden	\$ 1,300,000	60th
Stuart A. Arbuckle	\$ 750,000	40th
Michael Parini	\$ 775,000	60th
Amit Sachdev	\$ 540,750	>75th

(1) Peer rankings based on salary information from 2017.

Company and Individual Ratings

The amounts for two of the principal elements of our executive compensation program - annual cash bonus and annual equity awards - are determined on the basis of annual company and individual performance ratings.

Overview of Company Performance Rating & Achievement in 2018

At the beginning of each year, our board of directors, in consultation with our CEO, establishes company-wide goals for that year. While our performance against these goals is the most important factor considered by our board in assessing our corporate performance, our board considers additional accomplishments and shortcomings and may increase or decrease the performance scores (although the company score may not exceed 150). Although the directors discuss and analyze our performance as a group, each director makes his or her own judgment about specific performance factors and accomplishment of the goals in reaching a conclusion.

For 2018, the board set company goals and assigned relative weights that reflected our operational, strategic and financial objectives for the year and the importance of these goals to our long-term goals of revenue growth and increasing profitability. Our revenue goals for marketed and approval stage products were designed to incentivize increasing access to our medicines through approvals of new transformative medicines, label-expansions for our existing medicines and negotiating reimbursement agreements in ex-U.S. markets and were not set, achieved through or dependent upon, price increases. Our pipeline goals and our budgets were established with the expectation that we would reinvest the majority of our revenues into research and development for additional transformative medicines. As a result, our research and development expenses have represented over 70% of our operating expenses over the last five years. Our 2018 weighted goals and the year-end score achieved by the company and assigned by the board are set forth in the following table:

Goal(s)	Maximum Score	Actual 2018 Performance Score
Marketed and Approval-Stage Products	60	60
<ul style="list-style-type: none"> ● Achieve CF net product revenue goals through compliant marketing practices, including U.S. and ex-U.S. revenue goals ● Successfully launch SYMDEKO through compliant marketing practices 		
Pipeline Growth	55	50.5
<ul style="list-style-type: none"> ● Accelerate pivotal development of triple-combination programs ● Obtain approval for SYMDEKO in the U.S. and SYMKEVI in the E.U ● Obtain label-expansions in U.S. and E.U. for CF medicines ● Advance non-CF development programs, including Phase 2 clinical trials of VX-150 and Phase 1 clinical trials in multiple diseases ● Advance multiple research programs, including CF and non-CF programs 		
Organizational Development and Capability	15	14
<ul style="list-style-type: none"> ● Fill critical positions with superior and diverse talent to support business growth ● Improve infrastructure to support expanding business ● Continue to ensure a strong compliance mindset and enterprise-wide risk management program 		
Financial Strength	20	20
<ul style="list-style-type: none"> ● Increase cash flows and manage operating expenses 		
Additional Accomplishments and Shortcomings, Net (see page 56 of this proxy statement)		4
<ul style="list-style-type: none"> ● Additional Accomplishments ● Additional Shortcomings 		+7 -3
TOTAL	150	148.5

Our 2018 company performance score was 148.5 out of a potential of 150. Our 2019 company performance will be evaluated against the broad categories set forth above, with slightly more emphasis on Pipeline Growth (60 points in 2019 compared to 55 points in 2018) and slightly less on Marketed and Approval-Stage Products (55 points in 2019 compared to 60 points in 2018). These changes were made to align our annual incentive plan with our business goals for 2019.

Detailed Discussion of Company Performance Rating Factors and Achievements

Goals - Marketed and Approval-Stage Products

In 2018, CF net product revenues increased to \$3.04 billion, up 40% as compared to 2017. Our CF net product revenues exceeded the mid-point of our initial CF net product revenue guidance by \$313 million (\$3.04 billion actual as compared to the mid-point of our initial guidance of \$2.73 billion). We expect additional increases in CF net product revenues in 2019.

SYMDEKO/SYMKEVI

We obtained approval and began marketing SYMDEKO in the first quarter of 2018 and obtained approval for SYMKEVI in late 2018. The successful launch of SYMDEKO in the United States, which resulted in \$769 million in SYMDEKO/SYMKEVI net product revenues, was critical to our exceeding our total CF net product revenue goals.

ORKAMBI

In 2018, we continued to have strong ORKAMBI net product revenues as the result of label expansions and increased access in ex-U.S. markets. As expected, our total ORKAMBI net product revenues were slightly lower in 2018 as compared to 2017 due to patients switching from ORKAMBI to SYMDEKO.

KALYDECO

In 2018, our KALYDECO net product revenue reached \$1.0 billion, an increase of 19%, as we continued to expand the number of patients receiving KALYDECO.

For marketed and approval-stage products goals, our board assigned the company a score of 60 out of 60, due to our exceeding our goals with respect to total CF net product revenues, including achieving our goals with respect to each of our CF medicines.

Goals - Pipeline Growth (Late and Early-Stage)

In 2018, we made significant progress that moved us closer to achieving our goal of delivering highly effective medicines to all patients with CF. Specifically, we:

- Obtained approval for SYMDEKO in first quarter of 2018 and SYMKEVI in the fourth quarter of 2018
- Accelerated our Phase 3 development programs for triple combination regimens, which were initiated in the first half of 2018:
 - Obtained positive Phase 3 data from two Phase 3 clinical trials evaluating the triple combination of VX-659, tezacaftor and ivacaftor in the fourth quarter of 2018

- Positioned ourselves to obtain positive Phase 3 data from two clinical trials evaluating the triple combination of VX-445, tezacaftor and ivacaftor in early 2019
- Based on the data from these clinical trials, we are positioned to file an NDA in the United States in the third quarter of 2019 and an MAA in the European Union in the fourth quarter of 2019 for a triple combination regimen
- Obtained regulatory approvals and advanced clinical trials designed to provide younger children access to our CF medicines
- Advanced additional next-generation correctors into Phase 1 clinical trials

Additionally, in 2018, we made significant progress toward meeting our goal of diversifying our portfolio as we advanced promising programs in a variety of diseases. Specifically, we:

- Obtained proof-of-concept from Phase 2 clinical trials evaluating VX-150, a selective non-opioid NaV1.8 inhibitor, as a potential treatment for acute and neuropathic pain
- Initiated a Phase 1 clinical trial for a novel drug candidate for alpha-1 antitrypsin deficiency
- Initiated clinical trials of CTX001, an investigational gene-editing treatment that we are evaluating as a potential treatment for beta-thalassemia and sickle cell disease
- Advanced our research program for focal segmental glomerulosclerosis into late-stage preclinical development
- Established a collaboration with Arbor Biotechnologies to enhance our ongoing efforts to develop innovative gene-editing therapies for a range of serious diseases

While our overall performance with respect to pipeline goals was excellent, we experienced a delay compared to our goals in connection with incorporating VX-561 (deuterated ivacaftor) into our CF program and a slight delay in the timing of our approval for SYMKEVI in the European Union.

On the basis of the accomplishments in advancing our research and development programs and, in particular, the acceleration of our Phase 3 development of triple combination regimens and the advancement of multiple non-CF programs our board assigned the company a score of 50.5 out of 55 for our pipeline growth goal.

Goals - Organizational Development and Capability

Talent and expertise

Strengthened our organizational capabilities by attracting, developing and retaining the key talent necessary to operate our business, including filling 11 of 12 critical hires with superior and diverse talent.

Systems and Infrastructure

Continued improvement of infrastructure to support an increasingly complex organization, including enhancing policies, software platforms and business processes. Successfully completed transition to new research facility in San Diego.

Compliance

Continued to promote effective governance, communication and training to support our company-wide compliance and risk management programs.

To reflect the improvements to our organizational structure, processes and systems achieved in 2018, our board assigned the company a score of 14 out of 15 for our organizational development and capability goals.

Goals - Financial Strength

We exceeded all of our financial goals in 2018. Our combined R&D and SG&A expenses for 2018 were within the guidance we provided at the beginning of 2018. Our operating income increased by 415% as compared to 2017. Our increased cash flows were achieved while managing our operating expenses allowing us to strengthen our balance sheet and end 2018 with cash, cash equivalents and marketable securities of \$3.2 billion.

As a result of our success in increasing our financial strength by managing our operating expenses and increasing cash flows, our board assigned the company a score of 20 out of 20 for our financial strength goals.

Additional Factors (accomplishments and/or shortcomings)

In connection with determining our 2018 company rating, our board of directors made positive and negative adjustments based on factors not anticipated when the company's original goals for 2018 were established. The positive adjustments were primarily related to our success in commercializing our CF medicines, obtaining orphan drug designations for SYMKEVI and our triple combination regimens in the European Union and the exceptional performance of our research organization. These additional accomplishments were partially offset by delays we experienced in our CRISPR program as a result of a clinical hold that was placed on the program in early 2018 and released in the fourth quarter of 2018 and delays in obtaining reimbursement for ORKAMBI in ex-U.S. markets. Overall, the board of directors increased our company rating by seven points for positive additional accomplishments, which was offset by a three point downward adjustment related to additional negative factors, which resulted in an overall positive net four point adjustment.

2018 Individual Performance Ratings – Overview

The MDCC evaluates executives' individual performance on a "results-based, values-tempered" basis, which takes into account not only "what" was accomplished, but "how" it was accomplished. The results-based component evaluates the executive officer's performance in his or her individual role and as a leader of our company in achieving our objectives. The possible individual results-based performance ratings are "not building," "building," "strong" or "leading." The values-tempered component of the individual evaluations builds upon our company core values: "uncompromising commitment to patients;" "innovation is our lifeblood;" "fearless pursuit of excellence" and "we wins" and are based on whether the decisions made by the executives were consistent with these values and what is in the

best interests of the company in the long term. Under our values into practice program, we expect all employees to demonstrate our company core values in all aspects of job performance. We further expect that our executives will be stewards of our core values, and the performance ratings assigned to them incorporate our board’s assessment of the strength of their leadership with respect to, and demonstration of, values-based behavior. This evaluation results in ratings of “not demonstrating,” “living the values” or “exemplary demonstration.” The possible individual performance ratings under this program are as set forth in the following table:

		Results Evaluation			
		Not Building Consistency	Building Consistency	Strong	Leading
Values Evaluation	Exemplary Values Demonstration	N/A	Strong (80-120%)	Leading (120-150%)	Leading Exemplary (150%)
	Living the Values	Not Building (0%)	Building (50-80%)	Strong (80-120%)	Leading (120-150%)
	Inconsistent Demonstration	Not Building (0%)	Not Building (0%)	Building (50-80%)	N/A

The 2018 results-based rating recommendation for each NEO, other than our CEO, is the combined result of the MDCC members’ own observations and a review of the executive’s role in the accomplishment of the corporate goals and recommendations, the latter of which is provided to the MDCC by our chief executive officer and is made on the basis of his independent assessment of each executive officer’s performance. The MDCC and Dr. Leiden discussed each recommendation at length, on both an individual and comparative basis. Upon completion of these discussions, the MDCC finalized its recommendation for the results-based rating for each executive. The final recommendations took into account Dr. Leiden’s recommendations, the opinions of MDCC members (based on the executive’s contributions and the MDCC members’ interactions with the executive), as well as other factors. The MDCC gave Dr. Leiden’s recommendations greater weight when determining the values-based rating than when determining the results-based rating, as the values-based rating is pertinent to the executive’s daily interactions in carrying out his or her duties. Furthermore, the MDCC believes that, in his role as CEO, Dr. Leiden had greater visibility than the MDCC members into the quality of these interactions. Taking into account all of the factors raised in the discussion and the assigned individual performance rating, the MDCC assigns an individual performance factor for each NEO within the ranges set forth above. While the individual ratings are not 100% objective, we view them as critical factors indicative of management success and crucial to achieving the more objective goals discussed above. The results-based and values-based evaluations for our CEO are based on a similar assessment of individual performance by our MDCC and independent directors.

2018 Actual Individual Ratings For Named Executive Officers

Dr. Jeffrey Leiden Chairman, President and CEO	2018 Rating:	Leading Exemplary
	2019 Salary:	\$ 1,300,000
	2018 Bonus:	\$ 3,440,151
	LTI Equity Grants (Feb 2019):	\$ 15,240,000

On the basis of the MDCC's recommendation, our independent directors rated Dr. Leiden's overall performance for 2018 as "leading exemplary," with an individual performance factor of 148.5%. The performance rating for Dr. Leiden combined a "leading" results-based rating with an "exemplary demonstration" values-based rating. The rating derived principally from his leadership of our executive team as we executed our strategy for 2018, which included:

- Leadership in executing our corporate strategy, which for the last eight years has maintained its focus on developing transformative medicines for serious diseases, and achieving our business goals
- The advancement of our CF programs, in particular the acceleration of our triple combination programs to position us for the expected filing of an NDA in the third quarter of 2019 and an MAA in the fourth quarter of 2019
- The advancement of our non-CF clinical development pipeline, including advancing Phase 2 clinical development of VX-150 and initiating the first clinical trials for CTX001
- The excellent performance of our internal research organization in advancing multiple programs, including in cystic fibrosis, alpha-1 anti-trypsin deficiency and focal segmental glomerulosclerosis
- The over-achievement of our financial goals including significantly increasing CF net product revenues, significantly strengthening our balance sheet, expanding our operating margins, and increasing operating income
- Significantly expanding the company's expertise in various therapeutic modalities through internal research, recruiting and collaborations
- Recruiting, mentoring and developing our outstanding senior leadership team
- Enhancing Vertex's corporate reputation through, among other activities, patient engagement, corporate giving and diversity and inclusion initiatives
- Coordinating, as the chair of our board, clear, open and constructive communication between our board and management regarding key business and strategic issues
- Exhibiting outstanding personal and leadership qualities and embodying Vertex's core values in enabling the successful stewardship of our company over the last year

Stuart A. Arbuckle EVP, Chief Commercial Officer	2018 Rating:	Leading Exemplary
	2019 Salary:	\$ 750,000
	2018 Bonus:	\$ 824,175
	LTI Equity Grants (Feb 2019):	\$ 5,250,000

The MDCC recommended and the board adopted an overall rating of "leading exemplary" for Mr. Arbuckle based on a results-based rating of "leading" and a values-based rating of "exemplary demonstration" with an individual performance factor of 148%. Mr. Arbuckle's rating derived from his leadership of the commercial organization, including the following:

- The exceptional performance of our commercial organization, which delivered CF net product revenues of \$3.04 Billion in 2018, up 40% compared to 2017
- The successful U.S. launch of SYMDEKO for patients 12 years of age and older in 2018, which had a significant effect on our overall financial performance in 2018
- Successful launches of KALYDECO for patients 12 to 24 months of age and ORKAMBI for patients two to five years of age
- Leading successful reimbursement discussions that provided access to patients eligible for our approved medicines in a number of Ex-U.S. markets, including Australia, Denmark, Israel, Luxembourg and Sweden
- The successful launch of ORKAMBI in Australia
- Leading the successful transition of our international leadership team as we continued to expand our international operations

Michael Parini	2018 Rating:	Leading
EVP, Chief Legal and Administrative Officer	2019 Salary:	\$ 775,000
	2018 Bonus:	\$ 834,384
	LTI Equity Grants (Feb 2019):	\$ 4,375,000

The MDCC recommended and the board adopted an overall rating of “leading” for Mr. Parini based on a results-based rating of “strong” and a values-based rating of “exemplary demonstration” with an individual performance factor of 145%. Mr. Parini’s rating derived from his leadership of the legal, compliance, human resources, corporate communications and quality groups with respect to the following:

- Leading a highly successful year for the legal department, supporting key business development, regulatory and reimbursement initiatives
- Expanding and enhancing our human resources function
- Spearheading our recruiting efforts, which resulted in us filling 11 of 12 critical positions
- Leading the successful communication of numerous key clinical and regulatory milestones
- Leading several important corporate initiatives, including the establishment of The Vertex Foundation and the advancement of our diversity and inclusion efforts

Amit Sachdev	2018 Rating:	Leading Exemplary
EVP, Chief Regulatory Officer	2019 Salary:	\$ 540,750
	2018 Bonus:	\$ 602,261
	LTI Equity Grants (Feb 2019):	\$ 5,250,000

The MDCC recommended and the board adopted an overall rating of “leading exemplary” for Mr. Sachdev based on a results-based rating of “leading” and a values-based rating of “exemplary demonstration” with an individual performance factor of 150%. Mr. Sachdev’s rating derived principally from his leadership of the regulatory and governmental affairs organizations with respect to the following:

- Building and leading the global regulatory group as they efficiently and successfully obtained multiple approvals for our medicines in U.S. and ex-U.S. markets, including:
 - SYMDEKO for patients 12 years of age and older in the United States;
 - SYMKEVI for patients 12 years of age and older in the European Union
 - KALYDECO for patients 12 to 24 months of age
 - ORKAMBI for patients 2 years to 5 years of age
- Supporting the advancement of multiple development programs, including the triple combination regimens for CF and obtaining the release of the clinical hold on CTX001 allowing us to initiate the clinical trials in the United States
- Obtaining multiple regulatory designations, including Orphan Drug Designation in the European Union for multiple CF treatment regimens and Breakthrough Drug Designation in the United States for VX-150 in pain

Former Executive Officers

Dr. Chodakewitz served as our Chief Medical Officer and Executive Vice President, Global Medicines Development and Medical Affairs through March 31, 2018, and remained as a senior advisor to the company through his retirement in February 2019. He received a leading rating for his 2018 performance, which included leading the development organization during the first part of the year and enabling a smooth transition for Dr. Reshma Kewalramani, who became our Chief Medical Officer and Executive Vice President, Global Medicines Development and Medical Affairs in April 2018. He received a bonus of \$550,638 and an equity grant with a fair market value of \$4,375,000 in February 2019.

Mr. Graney served as our Senior Vice President and Chief Financial Officer until December 13, 2018 and remained as an employee through February 2019. He received a bonus of \$367,538 and did not receive an equity grant in February 2019.

Mr. Smith served as our Executive Vice President and Chief Operating Officer until January 23, 2019 and our interim Chief Financial Officer from December 13, 2018 through January 23, 2019. We terminated Mr. Smith’s employment as a result of personal behavior that violated our code of conduct and values. This termination was unrelated to our financial and business performance. Mr. Smith did not receive a bonus or an equity award for 2018 performance.

Annual Cash Bonus

The cash bonus for each executive (referred to in the *Summary Compensation Table* on page 65 of this proxy statement as “Non-Equity Incentive Plan Compensation”) is calculated by multiplying the executive officer’s target bonus by both the company performance factor and the individual performance factor, in accordance with the following formula in 2018:

Target Cash Bonus		X	Performance Factors		=	Cash Bonus		
Base Salary	X	Individual Incentive Target (expressed as a percentage of base salary)	X	Company Performance Factor (expressed as a percentage of the target bonus)	X	Individual Performance Factor (expressed as a percentage of the target bonus)	=	Annual Cash Bonus Award
		45%- 120% based on role		0%- 150%		0-150%		

The individual incentive targets were established, and are reviewed annually, by the MDCC based on available data about Peer Group company compensation. Dr. Leiden’s individual incentive target of 120% has remained unchanged since 2012. The individual incentive target for each other current NEO is 50% and was unchanged during 2018. The resulting target annual bonuses approximate the median target annual bonuses for comparable executives at peer companies.

Company performance factors are determined annually and range from 0% to 150%. The possible individual ratings and corresponding individual performance factor ranges for our executive officers in 2018 are set forth in the table below:

Individual Rating	Individual Performance Factor
Not Building	0%
Building	50%-80%
Strong	80%-120%
Leading	120%-150%
Leading/Exemplary	140%-150%

On the basis of the factors described above, our independent directors approved, upon the MDCC’s recommendation, individual performance factors and annual bonus awards for each of the NEOs on account of 2018 performance, as set forth in the table below.

Name	2018 Target Bonus	Company Performance Factor	Individual Performance Factor	2018 Performance Cash Bonus
Jeffrey M. Leiden	\$ 1,560,000	X 148.5%	X 148.5%	\$ 3,440,151
Stuart A. Arbuckle	\$ 375,000	X 148.5%	X 148%	\$ 824,175
Michael Parini	\$ 387,500	X 148.5%	X 145%	\$ 834,384
Amit Sachdev	\$ 270,375	X 148.5%	X 150%	\$ 602,261
Jeffrey Chodakewitz	\$ 309,000	X 148.5%	X 120%	\$ 550,638
Thomas Graney	\$ 247,500	X 148.5%	X 100%	\$ 367,538
Ian F. Smith	\$ 637,500	X 148.5%	X —%	\$ —

Annual Equity Awards

Value-Based Guidelines for Annual NEO Equity Grants

Under our program, our NEOs were eligible for awards with the following target values based on 2018 performance:

	Not Building	Building	Strong	Leading	Leading/Exemplary
CEO	\$ —	\$ 6,000,000	\$ 12,000,000	\$ 13,620,000	\$ 15,240,000
EVP	\$ —	\$ 1,750,000	\$ 3,500,000	\$ 4,375,000	\$ 5,250,000

During 2018, the MDCC increased our target value for annual equity grants by \$1.0 million for our CEO and \$500,000 for each of our executive vice presidents based on a market analysis. The number of shares subject to the time-vested restricted stock units and performance stock units is based on the fair value of our common stock on the date of grant. The number of shares subject to the stock options is based on an estimate of the fair value of the stock options pursuant to the Black-Scholes option pricing model based on information available as of the grant date.

February 2019 Grants Based on 2018 Performance

In February 2019, our independent directors approved, upon the MDCC's recommendation, individual performance factors and equity awards for 2018 performance for each of the NEOs, as set forth in the table below.

Name	Individual Performance Rating	Performance-Based RSU (35%)	Options (30%)	Time-based RSU (35%)	Total Equity Value
Jeffrey M. Leiden	Leading Exemplary	\$ 5,334,000	\$ 4,572,000	\$ 5,334,000	\$ 15,240,000
Stuart A. Arbuckle	Leading Exemplary	\$ 1,837,500	\$ 1,575,000	\$ 1,837,500	\$ 5,250,000
Michael Parini	Leading	\$ 1,531,250	\$ 1,312,500	\$ 1,531,250	\$ 4,375,000
Amit Sachdev	Leading Exemplary	\$ 1,837,500	\$ 1,575,000	\$ 1,837,500	\$ 5,250,000
Jeffrey Chodakewitz	Leading	\$ 1,531,250	\$ 1,312,500	\$ 1,531,250	\$ 4,375,000

(1) Estimates for value of equity-based awards granted in February 2019 for 2018 performance are based on our methodology for determining the grant-date fair value, including underlying assumptions for calculating these values as set forth in Note N to our consolidated financial statements included in our 2018 Annual Report on Form 10-K and are subject to adjustment. Mr. Smith and Mr. Graney did not receive equity awards in 2019.

Performance Units Company Target and Results Table

We have granted one-year financial-based performance restricted stock unit awards and three-year non-financial based restricted stock unit awards each year since 2016.

The final performance multipliers for our 2018 financial-based performance restricted stock unit awards were determined by the MDCC and applied to the target units granted to determine the actual units earned and eligible to vest with a payout of 200% in February 2019. The following chart shows the pre-established financial goals and the actual results for the financial-based performance restricted stock unit awards granted in 2018:

Award Year	Company Goal	Threshold	Target	Max	Results	Payout
2018	2018 CF Net Product Revenues	\$ 2.65 billion	\$ 2.73 to \$2.75 billion	\$ 2.85 billion	\$ 3.04 billion	200.0%

Consistent with our philosophy of aligning compensation with performance:

- In 2018, a year in which we substantially exceeded our CF net product revenue expectations and exceeded the high end of our CF net product revenues guidance by nearly \$200 million, the payout on our one-year financial PSU awards achieved the maximum level. The performance goals for the 2016 non-financial based performance restricted stock unit awards were established in February 2016 and our performance against these goals was determined in the first quarter of 2019. There were three non-financial goals and achievement of one goal would have resulted in a 50% payout, achievement of two goals would have resulted in a 100% payout and achievement of three goals resulted in a payout of 200%.

Award Year	Company Goal	Results
2016	CF Portfolio - Initiation of Phase 2B clinical trial for a next-generation corrector	Achieved
	Initiation of a non-CFTR modulator pivotal clinical trial including outlicensed compounds	Achieved
	Initiation of first-in-human clinical trials for at least 3 new drug candidates	Achieved

The performance multiples for the 2017 and 2018 non-financial based performance restricted stock awards will be determined in the first quarter of 2020 and 2021, respectively, based on performance over the relevant three-year performance period. The non-financial goals contained in our three-year performance restricted stock unit awards for 2017 and 2018 are not disclosed for competitive reasons and because the relevant performance periods are ongoing.

Other Compensation Arrangements

Benefits

Our executives are eligible to participate in all of our benefit plans and programs on the terms made generally available to our employees, including medical insurance, dental insurance, payment of life insurance premiums, disability coverage, equity programs, including a career employment/retirement provision and participation in our employee stock purchase plan and eligibility for matching contributions, subject to an annual \$25,000 limit, to qualified charitable organizations pursuant to the Vertex Foundation Matching Gift Program. We have a defined contribution—a 401(k)—plan, in which our NEOs are eligible to participate. We make matching contributions to the 401(k) plan. The formula for determining the amount of our matching contributions is the same for our NEOs as for our other employees (and are subject to the same statutory maximum), but the actual contributions made to the accounts of our NEOs generally are at the top end of the range, due to the executives' higher salaries and correspondingly higher cash contribution levels. Other than the retirement provision under our equity program available to all employees, we do not provide any retirement benefits to our executive officers.

Employment Agreements and Post-Termination Compensation and Benefits

The initial compensation terms for newly hired members of our executive team are the result of negotiations between us, in consultation with the MDCC and our board of directors, and the executive being hired. In general, each newly hired executive team member enters into an employment agreement and a change of control agreement and is awarded a stock option grant and/or a restricted stock unit award, and in some cases a cash sign-on bonus, reimbursement of moving expenses, and other benefits. We also enter into employment and change of control agreements with executives who are promoted to our executive team, on the basis of standard terms and conditions that have been recommended by our MDCC and approved by our board for such circumstances. We have entered into agreements providing for severance and change of control payments with each of the members of our executive team, including all of the NEOs, because we believe that they are a fair and effective way to allow our executives to maintain focus on our business in the face of market and other volatility in our industry.

In general, each employment arrangement provides for cash severance and continuation of certain employee benefits in the event that an executive's employment is terminated by us without cause or is terminated by the executive for good reason. We use a "double trigger" with respect to benefits that are to be provided in connection with a change of control. A change of control does not itself trigger benefits; rather, benefits are paid only if the employment of the executive is terminated by us other than for cause, death or disability, or by the executive for good reason, during a specified period before or after a change of control. We believe a "double trigger" benefit maximizes shareholder value because it prevents a windfall to executives in the event of a change of control in which the executive retains significant responsibility as defined in his or her individual agreement, while still providing our executives appropriate incentives to cooperate in negotiating any change of control that may put their jobs at risk.

We offer a company-wide program that provides for accelerated vesting of equity awards held by qualified retirement-eligible participants. All of the equity awards granted since 2014 to our employees, including our NEOs, contain a retirement vesting provision, under which a "qualified" participant who experiences a termination of service other than for cause will receive accelerated vesting of an additional number of shares underlying the award, equal to the sum of (x) 50% plus 10% for each year of service in excess of five full years of service multiplied by (y) the number of unvested shares subject to the award. A "qualified" participant is a participant who is at least age 55 and has completed at least five full years of service or whose age plus full years of service is 65 or greater and who, has completed a mandatory transitional period of employment with the company following notice of his or her planned termination of service.

In addition to the benefits that only accrue in connection with a change of control, our agreements with our executive officers provide benefits if we terminate their employment with us without cause or they terminate their employment with us for good reason, as such terms are defined in the applicable agreement with the executive officer. A further discussion of the terms and projected payments under each our agreements with our named executive officers is set forth below under the heading *Employment Contracts and Change of Control Arrangements*.

Tax Considerations

We would like our compensation program to be reasonably cost and tax effective. To the extent consistent with our other goals, we seek to preserve corporate tax deductions, while maintaining the flexibility to approve compensation arrangements that we believe are in the best interests of the company and our shareholders. The approach does not always result in full tax deductibility.

Compensation Practices

Equity Grant Practices

The exercise price for each stock option awarded to our executive officers under our equity compensation program is equal to the fair market value of our common stock on the date of grant, which under our equity plans is the average of the high and low price for our common stock on the date of grant. Our board of directors generally grants annual equity awards to named executive officers at a board meeting scheduled in advance for early February. Scheduling decisions are made without regard to anticipated earnings or other major announcements by the company.

Newly hired employees, including executive officers, are sometimes granted options and/or restricted stock units effective on the first day of employment, with the options having an exercise price set at the average of the high and low price for our common stock on the employment start date. The employees' start dates are scheduled without regard to anticipated earnings or other major announcements by the company.

In the past, the MDCC has recommended that our board make an additional, off-cycle equity award to an executive officer or group of officers in order to achieve one or more of the objectives of our executive compensation program. Supplemental grants have been made on an ad hoc basis, when warranted in the judgment of the MDCC and our board. We did not make any supplemental grants of equity compensation in 2018.

Compensation Recoupment (“Clawback”) Policy

We have adopted a recoupment or clawback policy providing that, if our board of directors determines that an executive officer engaged in fraud or intentional misconduct that resulted in an incorrect determination that an incentive compensation performance goal had been achieved, the board may take appropriate action to recover from such executive officer any compensation that resulted from such determination. The board may require repayment for any bonus, equity or incentive compensation awarded to an executive officer who engaged in the fraud or intentional misconduct to the extent it was based on such incorrect determination.

Stock Ownership Guidelines

We have stock ownership guidelines for our chief executive officer and NEOs and guidelines for our non-employee directors, as discussed in *Non-Employee Director Stock Ownership Guidelines* on page 25 of this proxy statement. The guidelines for our CEO and Executive Vice Presidents are set forth in the following table:

Employee	Minimum Shareholding Requirement
Chief Executive Officer	6X base salary or 150,000 shares of our common stock
Executive Vice Presidents	4X base salary

Individual holdings, and holdings of immediate family members, of (a) common stock, (b) unvested restricted stock units and (c) shares held through our 401(k) plan count toward meeting these guidelines. Our chief executive officer and our executive vice presidents currently satisfy the individual holding requirements.

Anti-Hedging and Pledging Policy

We prohibit all of our directors and employees, including our named executive officers, from (i) short selling or hedging our securities, (ii) purchasing or selling derivative securities based on our securities and (iii) pledging our securities.

Risk Mitigation

Our MDCC reviews the risks and rewards associated with our compensation programs. The programs are designed with features that mitigate risk without diminishing the incentive nature of the compensation. We believe our compensation programs encourage and reward prudent business judgment and appropriate risk-taking over the short term and the long term. Our MDCC regularly evaluates the risks involved with our compensation programs and does not believe that any of our compensation programs create risks that are reasonably likely to have a material adverse effect on our company.

We believe that our annual cash bonus and long-term equity compensation programs, which account for most of our executive officers’ compensation, contain appropriate risk mitigation factors, as summarized below:

What We Do	What We Don’t Do
Caps on awards	No executive perquisites
Multiple performance factors	No supplemental pension benefits for executives
Range of awards; not all or nothing	No single-trigger vesting in connection with a change-in-control for equity awards
Compensation recoupment (clawback) policy	No hedging or pledging or speculative transactions in our securities by directors and executive officers
Balance of short- and long-term incentives (through annual cash bonuses and equity awards)	No re-pricing of equity awards without shareholder approval
Executive and Non-Employee Director Stock Ownership Guidelines	No payment of dividends on unvested performance shares or units
No gross-ups	
Independent compensation consultant	

MANAGEMENT DEVELOPMENT AND COMPENSATION COMMITTEE REPORT

The Management Development and Compensation Committee has reviewed the Compensation Discussion and Analysis and discussed that analysis with management. Based on its review and its discussions with management, the Management Development and Compensation Committee recommended to Vertex's Board of Directors that the Compensation Discussion and Analysis be included in Vertex's proxy statement for its 2019 annual meeting of shareholders and incorporated by reference into Vertex's Annual Report on Form 10-K for the year ended December 31, 2018. This report is provided by the following directors who comprise the Management Development and Compensation Committee:

Bruce I. Sachs (Chair)
Terrence C. Kearney
Elaine S. Ullian
William D. Young

COMPENSATION AND EQUITY TABLES

Summary Compensation Table

The following table provides summary information concerning compensation each of our NEOs for 2018, 2017 and 2016.

Name and Principal Position	Year	Salary	Bonus	Stock Awards ⁽¹⁾	Option Awards ⁽¹⁾	Non-Equity Incentive Plan Compensation	All Other Compensation	Total
Jeffrey M. Leiden Chairman, President & CEO	2018	\$ 1,300,000	\$ —	\$ 9,800,288	\$ 4,243,973	\$ 3,440,151	\$ 14,735	\$ 18,799,147
	2017	\$ 1,300,000	\$ —	\$ 8,750,114	\$ 3,700,877	\$ 3,463,200	\$ 13,110	\$ 17,227,301
	2016	\$ 1,300,000	\$ —	\$ 9,800,076	\$ 4,060,397	\$ 2,246,400	\$ 12,885	\$ 17,419,758
Stuart A. Arbuckle EVP & Chief Commercial Officer	2018	\$ 721,923	\$ —	\$ 2,625,244	\$ 1,136,785	\$ 824,175	\$ 38,965	\$ 5,347,092
	2017	\$ 700,000	\$ —	\$ 2,100,013	\$ 888,210	\$ 699,300	\$ 13,110	\$ 4,400,633
	2016	\$ 672,885	\$ —	\$ 3,150,148	\$ 1,305,144	\$ 420,000	\$ 12,885	\$ 5,561,062
Michael Parini EVP & Chief Legal and Administrative Officer	2018	\$ 746,923	\$ —	\$ 2,625,244	\$ 1,136,785	\$ 834,384	\$ 29,000	\$ 5,372,336
	2017	\$ 694,519	\$ —	\$ 3,150,020	\$ 1,332,316	\$ 788,655	\$ 13,110	\$ 5,978,620
	2016	\$ 517,846	\$ 250,000	\$ 1,689,672	\$ 4,731,100	\$ 499,867	\$ 41,779	\$ 7,730,264
Amit Sachdev EVP & Chief Regulatory Officer	2018	\$ 540,750	\$ —	\$ 3,150,448	\$ 1,364,130	\$ 602,261	\$ 20,672	\$ 5,678,261
	2017	\$ 540,750	\$ —	\$ 2,625,016	\$ 1,110,263	\$ 600,233	\$ 10,001	\$ 4,886,263
	2016	\$ 540,750	\$ —	\$ 3,150,148	\$ 1,305,144	\$ 438,007	\$ 960	\$ 5,435,009
Jeffrey Chodakewitz⁽²⁾ Former EVP & Chief Medical Officer	2018	\$ 618,000	\$ —	\$ 3,150,448	\$ 1,364,130	\$ 550,638	\$ 13,780	\$ 5,696,996
Thomas Graney⁽²⁾⁽³⁾ Former SVP & Chief Financial Officer	2018	\$ 550,000	\$ —	\$ 1,400,130	\$ 606,332	\$ 367,538	\$ 13,685	\$ 2,937,685
	2017	\$ 154,423	\$ 150,000	\$ 1,500,140	\$ —	\$ 110,392	\$ 12,445	\$ 1,927,400
Ian F. Smith⁽³⁾ Former EVP & Chief Operating and Interim Chief Financial Officer	2018	\$ 850,000	\$ —	\$ 2,625,244	\$ 1,136,785	\$ —	\$ 14,105	\$ 4,626,134
	2017	\$ 848,077	\$ —	\$ 2,625,016	\$ 1,110,263	\$ 1,339,770	\$ 13,110	\$ 5,936,236
	2016	\$ 750,000	\$ —	\$ 3,150,148	\$ 1,305,144	\$ 562,500	\$ 12,885	\$ 5,780,677

(1) Pursuant to applicable SEC rules the grant-date fair values of the equity awards granted in February 2018 for 2017 performance are included in 2018 compensation. Equity awards granted in February 2019 to Dr. Leiden, Mr. Arbuckle, Mr. Parini, Mr. Sachdev and Mr. Chodakewitz for 2018 performance are not reflected in the Summary Compensation Table above and the value of those awards for our 2019 named executive officers will be reflected in the Summary Compensation Table for next year's proxy.

(2) Dr. Chodakewitz was one of our executive vice presidents during 2016 and 2017, but was not a named executive officer. Mr. Graney was an employee from the third quarter of 2017 through the first quarter of 2019.

(3) Mr. Graney and Mr. Smith did not receive equity awards in 2019.

Bonus

Pursuant to applicable SEC rules, the annual cash bonuses earned by our named executive officers are set forth under the caption "Non-Equity Incentive Plan Compensation." Other bonuses, such as sign-on bonuses, are listed separately under the caption "Bonus."

Stock Awards and Options Awards

The amounts set forth under the captions "Stock Awards" and "Option Awards" in the table above represent the grant-date fair value of awards granted during the applicable fiscal year. Our methodology for determining the grant-date fair value, including underlying estimates and assumptions for calculating these values, is set forth in Note N to our consolidated financial statements included in our 2018 Annual Report on Form 10-K filed with the SEC on February 13, 2019.

The "Stock Awards" for 2018 consist of performance stock unit, or PSU, awards and time-vested restricted stock unit awards granted in February 2018. The "Stock Awards" for 2017 consist of PSU awards and time-vested restricted stock unit awards granted in February 2017 and a sign-on equity grant for Mr. Graney in September 2017. The "Stock Awards" for 2016 consist of PSU awards and time-vested restricted stock unit awards granted in February 2016 and a sign-on equity grant for Mr. Parini in January 2016.

Non-Equity Incentive Plan Compensation—Annual Cash Bonus

The amounts set forth under the caption “Non-Equity Incentive Plan Compensation” in the table above represent annual cash bonuses for 2018, 2017 and 2016 performance, each of which was paid in the first quarter of the subsequent year. The cash bonus awards to the named executive officers for 2018 performance were determined as follows:

Name	Base Salary	Individual Incentive Target	2018 Target Bonus	Company Performance Factor	Individual Performance Factor	2018 Performance Cash Bonus
Jeffrey M. Leiden	\$ 1,300,000	x 120% =	\$ 1,560,000	x 148.5%	x 148.5% =	\$ 3,440,151
Stuart A. Arbuckle	\$ 750,000	x 50% =	\$ 375,000	x 148.5%	x 148% =	\$ 824,175
Michael Parini	\$ 775,000	x 50% =	\$ 387,500	x 148.5%	x 145% =	\$ 834,384
Amit Sachdev	\$ 540,750	x 50% =	\$ 270,375	x 148.5%	x 150% =	\$ 602,261
Jeffery Chodakewitz	\$ 618,000	x 50% =	\$ 309,000	x 148.5%	x 120% =	\$ 550,638
Thomas Graney	\$ 550,000	x 45% =	\$ 247,500	x 148.5%	x 100% =	\$ 367,538
Ian F. Smith	\$ 850,000	x 75% =	\$ 637,500	x 148.5%	x —% =	\$ —

All Other Compensation

The amounts set forth under the caption “All Other Compensation” in the table for 2018 consist of:

Name	401(k) Match	Life Insurance Premiums	Matching Gift Program	Total
Jeffrey M. Leiden	\$12,375	\$ 2,360	\$ —	\$ 14,735
Stuart A. Arbuckle	\$12,375	\$ 1,590	\$ 25,000	\$ 38,965
Michael Parini	\$12,375	\$ 1,625	\$ 15,000	\$ 29,000
Amit Sachdev	\$12,375	\$ 1,297	\$ 7,000	\$ 20,672
Jeffery Chodakewitz	\$12,375	\$ 1,405	\$ —	\$ 13,780
Thomas Graney	\$12,375	\$ 1,310	\$ —	\$ 13,685
Ian F. Smith	\$12,375	\$ 1,730	\$ —	\$ 14,105

Grants of Plan-Based Awards During 2018

The following table provides information with respect to grants of awards to each of our named executive officers during 2018. Pursuant to SEC rules, (i) the threshold, target and maximum amounts payable pursuant to our 2018 annual cash bonus program are set forth in columns under "Estimated Possible Payouts under Non-Equity Incentive Plan Awards", (ii) the threshold, target and maximum number of shares that could vest pursuant to PSUs granted in 2018 are set forth in columns under "Estimated Future Payouts under Equity Incentive Plan Awards", (iii) the number of shares granted pursuant to other restricted stock unit awards in 2018 is set forth under "All Other Stock Awards: Number of Shares of Stock or Units" and (iv) the number of shares subject to option awards granted in 2018 is set forth under "All Other Option Awards: Number of Securities Underlying Options".

Name	Grant Date	Estimated Possible Payouts Under Non-Equity Incentive Plan Awards			Estimated Future Payouts Under Equity Incentive Plan Awards (shares)			All Other Stock Awards: Number of Shares of Stock or Units (#)	All Other Option Awards: Number of Securities Underlying Options (#)	Exercise or Base Price of Option Awards (\$/Sh)	Closing Price of Stock on Grant Date (\$/Sh)	Grant-Date Fair Value of Stock and Option Awards (\$)
		Threshold (\$)	Target (\$)	Maximum (\$)	Threshold (#)	Target (#)	Maximum (#)					
Jeffrey M. Leiden		\$ 0	\$ 1,560,000	\$ 3,510,000								
	2/6/2018				—	15,749	31,498					\$ 2,450,072
	2/6/2018				—	15,749	31,498					\$ 2,450,072
	2/6/2018							31,498				\$ 4,900,144
	2/6/2018								73,046	\$ 155.57	\$ 159.27	\$ 4,243,973
Stuart A. Arbuckle		\$ 0	\$ 375,000	\$ 843,750								
	2/6/2018				—	4,219	8,438					\$ 656,350
	2/6/2018				—	4,219	8,438					\$ 656,350
	2/6/2018							8,437				\$ 1,312,544
	2/6/2018								19,566	\$ 155.57	\$ 159.27	\$ 1,136,785
Michael Parini		\$ 0	\$ 387,500	\$ 871,875								
	2/6/2018				—	4,219	8,438					\$ 656,350
	2/6/2018				—	4,219	8,438					\$ 656,350
	2/6/2018							8,437				\$ 1,312,544
	2/6/2018								19,566	\$ 155.57	\$ 159.27	\$ 1,136,785
Amit Sachdev		\$ 0	\$ 270,375	\$ 608,344								
	2/6/2018				—	5,063	10,126					\$ 787,651
	2/6/2018				—	5,063	10,126					\$ 787,651
	2/6/2018							10,125				\$ 1,575,146
	2/6/2018								23,479	\$ 155.57	\$ 159.27	\$ 1,364,130
Jeffrey Chodakewitz		\$ 0	\$ 309,000	\$ 695,250								
	2/6/2018				—	5,063	10,126					\$ 787,651
	2/6/2018				—	5,063	10,126					\$ 787,651
	2/6/2018							10,125				\$ 1,575,146
	2/6/2018								23,479	\$ 155.57	\$ 159.27	\$ 1,364,130
Thomas Graney		\$ 0	\$ 247,500	\$ 556,875								
	2/6/2018				—	2,250	4,500					\$ 350,033
	2/6/2018				—	2,250	4,500					\$ 350,033
	2/6/2018							4,500				\$ 700,065
	2/6/2018								10,436	\$ 155.57	\$ 159.27	\$ 606,332
Ian F. Smith		\$ 0	\$ 637,500	\$ 1,434,375								
	2/6/2018				—	4,219	8,438					\$ 656,350
	2/6/2018				—	4,219	8,438					\$ 656,350
	2/6/2018							8,437				\$ 1,312,544
	2/6/2018								19,566	\$ 155.57	\$ 159.27	\$ 1,136,785

Annual Cash Bonus. The amounts in the “Estimated Possible Payouts Under Non-Equity Incentive Plan Awards” column represent the minimum threshold, target and maximum amounts that our named executive officers were eligible for pursuant to our 2018 annual cash bonus program. Actual amounts paid to each of the named executive officers under this program for 2018 performance are set forth in the *Summary Compensation Table* above.

PSU. The amounts in the “Estimated Future Payouts Under Equity Incentive Plan Awards” column represent the minimum threshold, target and maximum amounts that could vest pursuant to PSUs granted in 2018. These awards vest if, and only if, performance objectives are achieved, as described in the footnotes to the table *Outstanding Equity Awards at Fiscal Year-End for 2018* below.

Time-Based Restricted Stock Units. The amounts in the “All Other Stock Awards: Number of Shares of Stock or Units” column represent the number of time-based restricted stock units, which vest annual over three years, granted to the named executive officers in 2018. The number of time-based restricted stock units to these named executive officers were made in February 2018 on account of the executives’ performances in 2017.

Options. In accordance with our stock and option plans, the exercise prices for the stock options granted to our named executive officers during 2018 were equal to the average of the high and the low prices of our common stock on the grant date. As a result, in 2018, the exercise prices of options granted to our named executive officers were lower than the grant-date closing price for the February 6, 2018 grants. In the future, we expect that options will continue to be granted with exercise prices equal to the average of the high and low prices of our common stock on the grant date, and that as a result the exercise prices are likely to be different from the closing price of our common stock on the grant date. Each stock option set forth in the table above was granted subject to vesting in 16 quarterly installments during the first four years of its ten-year term.

Narrative Disclosure to Summary Compensation Table and Grants of Plan-Based Awards Table

Each NEO has entered into an employment agreement with the company, which provides the executives the right to participate in all of the company’s compensation and benefits plans and equity programs, as described in *Compensation Discussion & Analysis*.

Option Exercises and Stock Vested for 2018

The following table sets forth the value realized by our named executive officers from options to purchase common stock exercised by the named executive officers during 2018 and shares of stock that vested during 2018. The value realized per share for options is based on the difference between the exercise price and the fair market value of the shares of common stock on the date the options were exercised. The value realized on vesting of stock awards is based on the fair market value of the shares of common stock on the vesting date.

Name	Option Awards		Stock Awards	
	Number of Shares Acquired on Exercise	Value Realized on Exercise	Number of Shares Acquired on Vesting	Value Realized on Vesting
Jeffrey M. Leiden	206,063	\$ 19,140,830	57,616	\$ 8,666,360
Stuart A. Arbuckle	66,303	\$ 4,453,708	15,773	\$ 2,372,498
Michael Parini	64,570	\$ 3,282,042	15,586	\$ 2,400,095
Amit Sachdev	113,545	\$ 9,019,823	17,796	\$ 2,676,797
Jeffery Chodakewitz	68,651	\$ 4,162,882	16,867	\$ 2,575,379
Thomas Graney	—	\$ —	2,392	\$ 458,331
Ian F. Smith	101,143	\$ 5,159,315	17,796	\$ 2,676,797

Outstanding Equity Awards at Fiscal Year-End for 2018

The following table provides information with respect to outstanding equity awards held by each of our named executive officers on December 31, 2018, based on the closing price of \$165.71 per share of our common stock on December 31, 2018:

Name	Option Awards				Number of Shares or Units of Stock That Have Not Vested (shares)	Stock Awards		
	Number of Securities Underlying Unexercised Options Exercisable (shares) ⁽¹⁾	Number of Securities Underlying Unexercised Options (shares) ⁽¹⁾	Option Exercise Price (per share)	Option Expiration Date		Market Value of Shares or Units of Stock That Have Not Vested	Equity Incentive Plan Awards: Number of Unearned Shares, Units or Other Rights That Have Not Vested (shares)	Equity Incentive Plan Awards: Market or Payout Value of Unearned Shares, Units or Other Rights That Have Not Vested
Jeffrey M. Leiden	Restricted Stock							
					32,250 ⁽²⁾	\$ 5,344,148		
	Time-based RSU							
					17,939 ⁽³⁾	\$ 2,972,672		
					33,712 ⁽⁴⁾	\$ 5,586,416		
					31,498 ⁽⁵⁾	\$ 5,219,534		
	Performance-based RSU							
					5,964 ⁽⁶⁾	\$ 988,294		
					33,712 ⁽⁷⁾	\$ 5,586,416		
					26,908 ⁽⁸⁾	\$ 4,458,925		
					15,749 ⁽⁹⁾	\$ 2,609,767		
							25,283 ⁽¹⁰⁾	\$ 4,189,646
							15,749 ⁽¹¹⁾	\$ 2,609,767
Stock Options								
213,000				0	\$ 77.31	2/4/2024		
45,303				58,247	\$ 86.52	2/2/2027		
73,752				33,524	\$ 91.05	2/1/2026		
106,500				0	\$ 96.87	7/14/2024		
199,687				13,313	\$ 109.14	2/2/2025		
86,531				19,969	\$ 131.89	7/20/2025		
13,696				59,350	\$ 155.57	2/5/2028		
Stuart A. Arbuckle	Restricted Stock							
					10,350 ⁽²⁾	\$ 1,715,099		
	Time-based RSU							
					5,767 ⁽³⁾	\$ 955,650		
					8,091 ⁽⁴⁾	\$ 1,340,760		
					8,437 ⁽⁵⁾	\$ 1,398,095		
	Performance-based RSU							
					1,917 ⁽⁶⁾	\$ 317,666		
					8,092 ⁽⁷⁾	\$ 1,340,925		
					8,649 ⁽⁸⁾	\$ 1,433,226		
					4,219 ⁽⁹⁾	\$ 699,130		
							6,068 ⁽¹⁰⁾	\$ 1,005,528
							4,219 ⁽¹¹⁾	\$ 699,130
Stock Options								
0				13,980	\$ 86.52	2/2/2027		
0				10,776	\$ 91.05	2/1/2026		
0				4,250	\$ 109.14	2/2/2025		
0				6,375	\$ 131.89	7/20/2025		
3,668				15,898	\$ 155.57	2/5/2028		
Michael Parini	Restricted Stock							
					6,900 ⁽¹²⁾	\$ 1,143,399		
	Time-based RSU							
					12,136 ⁽⁴⁾	\$ 2,011,057		
					8,437 ⁽⁵⁾	\$ 1,398,095		
	Performance-based RSU							
					12,136 ⁽⁷⁾	\$ 2,011,057		
				4,219 ⁽⁹⁾	\$ 699,130			

Name	Option Awards				Number of Shares or Units of Stock That Have Not Vested (shares)	Stock Awards		
	Number of Securities Underlying Unexercised Options Exercisable (shares) ⁽¹⁾	Number of Securities Underlying Unexercised Options Unexercisable (shares) ⁽¹⁾	Option Exercise Price (per share)	Option Expiration Date		Market Value of Shares or Units of Stock That Have Not Vested	Equity Incentive Plan Awards: Number of Unearned Shares, Units or Other Rights That Have Not Vested (shares)	Equity Incentive Plan Awards: Market or Payout Value of Unearned Shares, Units or Other Rights That Have Not Vested
						9,102 ⁽¹⁰⁾	\$	1,508,292
						4,219 ⁽¹¹⁾	\$	699,130
	Stock Options							
	0	20,969	\$ 86.52	2/2/2027				
	0	14,875	\$ 90.29	7/11/2026				
	0	21,250	\$ 122.45	1/3/2026				
	3,668	15,898	\$ 155.57	2/5/2028				
Amit Sachdev	Restricted Stock				8,625 ⁽²⁾	\$	1,429,249	
	Time-based RSU				5,767 ⁽³⁾	\$	955,650	
					10,114 ⁽⁴⁾	\$	1,675,991	
					10,125 ⁽⁵⁾	\$	1,677,814	
	Performance-based RSU							
					1,917 ⁽⁶⁾	\$	317,666	
					10,114 ⁽⁷⁾	\$	1,675,991	
					8,649 ⁽⁸⁾	\$	1,433,226	
					5,063 ⁽⁹⁾	\$	838,990	
							7,585 ⁽¹⁰⁾	\$ 1,256,910
							5,063 ⁽¹¹⁾	\$ 838,990
	Stock Options							
	0	17,475	\$ 86.52	2/2/2027				
	1	10,776	\$ 91.05	2/1/2026				
	53,906	3,594	\$ 109.14	2/2/2025				
	27,625	6,375	\$ 131.89	7/20/2025				
	4,402	19,077	\$ 155.57	2/5/2028				
Jeffrey Chodakewitz	Restricted Stock				8,625 ⁽²⁾	\$	1,429,249	
	Time-based RSU				4,806 ⁽³⁾	\$	796,402	
					8,091 ⁽⁴⁾	\$	1,340,760	
					10,125 ⁽⁵⁾	\$	1,677,814	
	Performance-based RSU							
					1,598 ⁽⁶⁾	\$	264,805	
					8,092 ⁽⁷⁾	\$	1,340,925	
					7,208 ⁽⁸⁾	\$	1,194,438	
					5,063 ⁽⁹⁾	\$	838,990	
							6,068 ⁽¹⁰⁾	\$ 1,005,528
							5,063 ⁽¹¹⁾	\$ 838,990
	Stock Options							
	0	13,980	\$ 86.52	2/2/2027				
	0	8,980	\$ 91.05	2/1/2026				
	0	3,594	\$ 109.14	2/2/2025				
	0	6,375	\$ 131.89	7/20/2025				
	4,402	19,077	\$ 155.57	2/5/2028				
Thomas Graney	Time-based RSU				4,783 ⁽¹³⁾	\$	792,591	
					4,500 ⁽⁵⁾	\$	745,695	
	Performance-based RSU							
					2,250 ⁽⁹⁾	\$	372,848	
							2,250 ⁽¹¹⁾	\$ 372,848
	Stock Options							
	1,956	8,480	\$ 155.57	2/5/2028				

Name	Option Awards				Number of Shares or Units of Stock That Have Not Vested (shares)	Stock Awards		
	Number of Securities Underlying Unexercised Options Exercisable (shares) ⁽¹⁾	Number of Securities Underlying Unexercised Options Unexercisable (shares) ⁽¹⁾	Option Exercise Price (per share)	Option Expiration Date		Market Value of Shares or Units of Stock That Have Not Vested	Equity Incentive Plan Awards: Number of Unearned Shares, Units or Other Rights That Have Not Vested (shares)	Equity Incentive Plan Awards: Market or Payout Value of Unearned Shares, Units or Other Rights That Have Not Vested
Ian F. Smith	Restricted Stock							
					10,350 ⁽²⁾	\$ 1,715,099		
	Time-based RSU							
					5,767 ⁽³⁾	\$ 955,650		
					10,114 ⁽⁴⁾	\$ 1,675,991		
					8,437 ⁽⁵⁾	\$ 1,398,095		
	Performance-based RSU							
					1,917 ⁽⁶⁾	\$ 317,666		
					10,114 ⁽⁷⁾	\$ 1,675,991		
					8,649 ⁽⁸⁾	\$ 1,433,226		
					4,219 ⁽⁹⁾	\$ 699,130		
							7,585 ⁽¹⁰⁾	\$ 1,256,910
							4,219 ⁽¹¹⁾	\$ 699,130
	Stock Options							
	3,883	17,475	\$ 86.52	2/2/2027				
	4,310	10,776	\$ 91.05	2/1/2026				
	2,125	0	\$ 96.87	7/14/2024				
	8,500	4,250	\$ 109.14	2/2/2025				
	4,250	6,375	\$ 131.89	7/20/2025				
	3,668	15,898	\$ 155.57	2/5/2028				

(1) Unvested stock options vest in 16 quarterly installments during the first four years of their ten-year terms. The option expiration dates listed above reflect the final expiration date for each of the listed options. If the named executive officer's service with us is terminated, the options would expire, subject to certain exceptions, 90 days after the termination of service.

(2) Each of these restricted stock awards vested on February 3, 2019, the fourth anniversary of grant.

(3) These time-based restricted stock unit awards vested in three annual installments. The shares listed on the table above represent the final installment, which vested on February 10, 2019.

(4) These time-based restricted stock unit awards vest in three annual installments. The shares listed on the table above represent the second and third annual installments, which vested on February 10, 2019 and will vest on February 10, 2020, respectively.

(5) These time-based restricted stock unit awards vest in three annual installments. The shares listed on the table above represent the three annual installments, which vested on February 17, 2019, and vests in two remaining annual installments on February 17, 2020 and 2021.

(6) This performance stock unit award was based on the achievement of one-year financial performance metrics tied to our net product revenue for medicines for the treatment of cystic fibrosis during 2016. In February 2017, our MDCC certified as to the level of performance at 66.5% of the number of target shares with the earned shares vesting in annual installments on February 10, 2017, 2018 and 2019. The shares listed on the table above represent the final installment of earned shares, which vested on February 10, 2019.

(7) This performance stock unit award was based on the achievement of one-year financial performance metrics tied to our net product revenue for medicines for the treatment of cystic fibrosis during 2017. In February 2018, our MDCC certified as to the level of performance at 200% of the number of target shares with the earned shares vesting in annual installments on February 10, 2018, 2019 and 2020. The shares listed on the table above represent the second and third installments of earned shares, which vested on February 10, 2019 and will vest on February 10, 2020, respectively.

(8) This performance stock unit award is based on the achievement of three-year non-financial performance metrics. The awards provide for multiple clinical and research milestones, with a payout range of zero to 200%. In February 2019, our MDCC certified as to the level of performance at 200% of the number of target shares. The earned shares vested on February 10, 2019.

(9) This performance stock unit award was based on the achievement of one-year financial performance metrics tied to our net product revenue for medicines for the treatment of cystic fibrosis during 2018, with vesting of the earned shares in three equal installments on each of February 17, 2019, 2020 and 2021. In February 2019, our MDCC certified as to the level of performance at 200% of the number of target shares.

(10) This performance stock unit award is based on the achievement of three-year non-financial performance metrics. The awards provide for multiple clinical and research milestones, with a payout range of zero to 200%. The specific clinical and research milestones are not disclosed for competitive reasons. Performance against these goals will be certified by our MDCC in early 2020.

(11) This performance stock unit award is based on the achievement of three-year non-financial performance metrics. The awards provide for multiple clinical and research milestones, with a payout range of zero to 200%. The specific clinical and research milestones are not disclosed for competitive reasons. Performance against these goals will be certified by our MDCC in early 2021.

(12) This restricted stock award comprises a sign-on equity award granted to Mr. Parini and vested as to one half of the shares set forth on the table above on January 4, 2019, with the remaining installment vesting on January 4, 2020.

(13) These time-based restricted stock unit awards comprise a sign-on equity award granted to Mr. Graney; the restricted stock unit awards set forth in the table terminated prior to the vesting of any additional shares.

SUMMARY OF TERMINATION AND CHANGE OF CONTROL BENEFITS

The amounts shown in the following table are calculated based on the amounts that would have been payable by us had the listed named executive officer experienced an employment termination on December 31, 2018.

	Voluntary Termination or Retirement/ Termination for Cause	Separate From a Change of Control Involuntary Termination Other Than for Cause/ Termination by Executive With Good Reason	In Connection With a Change of Control Involuntary Termination Other Than for Cause/ Termination by Executive for Good Reason	Disability	Death
Jeffrey M. Leiden					
Cash Severance Benefits	\$ —	\$ 4,420,000	\$ 10,111,400	\$ 1,560,000	\$ 1,560,000
Continuation of Employee Benefits	—	40,733	40,733	—	—
Accelerated Vesting of Stock Options	—	8,231,183	9,145,759	6,082,615	9,145,759
Accelerated Vesting of Restricted Stock and Restricted Stock Units	—	35,609,024	39,565,582	32,201,430	39,565,582
TOTAL	\$ —	\$ 48,300,940	\$ 58,863,474	\$ 39,844,045	\$ 50,271,341
Stuart A. Arbuckle					
Cash Severance Benefits	\$ —	\$ 1,125,000	\$ 1,500,000	\$ —	\$ —
Continuation of Employee Benefits	—	27,155	27,155	—	—
Accelerated Vesting of Stock Options	—	—	2,528,843	161,206	2,528,843
Accelerated Vesting of Restricted Stock and Restricted Stock Units	—	—	10,905,209	2,796,356	10,905,209
TOTAL	\$ —	\$ 1,152,155	\$ 14,961,207	\$ 2,957,562	\$ 13,434,052
Michael Parini					
Cash Severance Benefits	\$ —	\$ 1,162,500	\$ 1,550,000	\$ —	\$ —
Continuation of Employee Benefits	—	27,155	27,155	—	—
Accelerated Vesting of Stock Options	—	—	3,862,888	161,206	3,862,888
Accelerated Vesting of Restricted Stock and Restricted Stock Units	—	—	9,470,161	2,796,356	9,470,161
TOTAL	\$ —	\$ 1,189,655	\$ 14,910,204	\$ 2,957,562	\$ 13,333,049
Amit Sachdev					
Cash Severance Benefits	\$ —	\$ 811,125	\$ 1,081,500	\$ —	\$ —
Continuation of Employee Benefits	—	26,906	26,906	—	—
Accelerated Vesting of Stock Options	—	2,235,244	2,800,737	193,441	2,800,737
Accelerated Vesting of Restricted Stock and Restricted Stock Units	—	10,562,313	12,100,476	3,355,793	12,100,476
TOTAL	\$ —	\$ 13,635,588	\$ 16,009,619	\$ 3,549,234	\$ 14,901,213
Jeffrey Chodakewitz					
Cash Severance Benefits	\$ —	\$ 927,000	\$ 1,236,000	\$ —	\$ —
Continuation of Employee Benefits	—	27,155	27,155	—	—
Accelerated Vesting of Stock Options	—	—	2,389,879	193,441	2,389,879
Accelerated Vesting of Restricted Stock and Restricted Stock Units	—	—	10,727,900	3,355,793	10,727,900
TOTAL	\$ —	\$ 954,155	\$ 14,380,934	\$ 3,549,234	\$ 13,117,779
Thomas Graney					
Cash Severance Benefits	\$ —	\$ 797,500	\$ 1,045,000	\$ —	\$ —
Continuation of Employee Benefits	—	27,155	27,155	—	—
Accelerated Vesting of Stock Options	—	—	85,987	85,987	85,987
Accelerated Vesting of Restricted Stock and Restricted Stock Units	—	—	2,283,981	1,491,390	2,283,981
TOTAL	\$ —	\$ 824,655	\$ 3,442,123	\$ 1,577,377	\$ 2,369,968

	Voluntary Termination or Retirement/ Termination for Cause	Separate From a Change of Control Involuntary Termination Other Than for Cause/ Termination by Executive With Good Reason	In Connection With a Change of Control Involuntary Termination Other Than for Cause/ Termination by Executive for Good Reason	Disability	Death
Ian F. Smith					
Cash Severance Benefits	\$ —	\$ 2,125,000	\$ 2,125,000	\$ 1,381,250	\$ 1,381,250
Continuation of Employee Benefits	—	27,155	27,155	—	—
Accelerated Vesting of Stock Options	—	2,257,475	2,805,612	1,875,847	2,805,612
Accelerated Vesting of Restricted Stock and Restricted Stock Units	—	10,987,349	11,826,888	10,111,870	11,826,888
TOTAL	\$ —	\$ 15,396,979	\$ 16,784,655	\$ 13,368,967	\$ 16,013,750

The amounts in the table above do not include any life insurance payments or disability insurance payments that the executive or the executive's estate may receive under existing insurance policies. The assumptions underlying the calculations in the table include:

- The value of each share subject to an option to purchase common stock that would be accelerated or continue to vest in the circumstances described below under *Employment Contracts and Change of Control Arrangements* equals \$165.71 per share (the closing price on the last trading day of 2018), minus the exercise price per share.
- The value of each share of restricted stock for which our repurchase right would lapse or restricted stock unit that would be accelerated or continue to vest, in each case in the circumstances described below, equals \$165.71 per share (the closing price on the last trading day of 2018).
- Appropriate provision for the continuation of all then-outstanding options would be made in connection with a change of control.
- Our board of directors would elect not to pay a pro rata portion of an executive's target bonus for the year of termination in cases where the executive's employment is terminated voluntarily by the executive (for any reason, including retirement) or for cause, under our policy that cash bonuses are payable only to employees who are otherwise eligible and who remain employed by us on the date of bonus payment, typically in February of the next year.
- Our board of directors would have assigned the same 2018 individual and company performance ratings on December 31, 2018 as they assigned in the first quarter of 2019.
- As of December 31, 2018, Dr. Leiden would not have received any benefits if he voluntarily retired. Under his amended and restated employment agreement and equity agreements, Dr. Leiden is entitled to receive certain additional benefits at the end of the term of his employment agreement in March 2020.
- Dr. Chodakewitz retired on March 2, 2019. As of December 31, 2018, he was not eligible for any benefits upon retirement. In February 2019, he became eligible for a company-wide program that provides employees 55 years of age or older whose age plus years of service equal at least 65 with partial or full acceleration of their equity awards. As a result, 50% of Dr. Chodakewitz's then-outstanding equity awards vested on March 2, 2019.
- In February 2019, Mr. Graney's employment with us ended and he did not receive any severance benefits.
- In January 2019, Mr. Smith's employment with us was terminated as a result of personal behavior that violated our code of conduct and values. This termination was unrelated to our financial and business performance. Mr. Smith did not receive a cash bonus for 2018 performance or any equity awards in 2019. Upon termination of his employment, Mr. Smith received the minimum amounts that were provided for pursuant to his employment contract: cash payments equal to \$1.5 million, 18 months of acceleration of his outstanding equity and continuation of employee benefits for up to 12 months.

The actual amounts that the named executive officers could receive in the future as a result of a termination of employment would likely differ materially from the amounts set forth above as a result of, among other things, changes in our stock price, changes in the officers' base salary, target bonus amounts and actual bonus amounts, and the vesting and grants of additional equity awards.

EMPLOYMENT CONTRACTS AND CHANGE OF CONTROL ARRANGEMENTS

Executive Severance Arrangements

We have entered into agreements and maintain plans that require us to provide to our named executive officers cash compensation, benefits and/or acceleration of the vesting of equity awards in the event of termination of employment or service as a director under specified circumstances. In addition to the agreements described below, outstanding options granted under our stock and option plans provide that, in the event of certain changes of control, either appropriate provision for the continuation of all then-outstanding options must be made, or the vesting of those options will be accelerated and they will become fully exercisable immediately prior to such change of control. As described below, the benefits that are to be provided in connection with a change of control are subject to a “double trigger.” A change of control does not itself trigger benefits; rather, benefits are paid only if the employment of the executive is terminated by us other than for cause, death or disability or by the executive for good reason during a specified period before or after a change of control. The following descriptions are qualified in the entirety by the agreements with the executive officers, which have been filed with the SEC.

In addition to the benefits described below, under programs applicable to all employees, if a named executive officer dies while an employee, his estate and/or beneficiaries would receive full acceleration of all outstanding equity awards, and if a named executive officer's employment is terminated due to disability the executive officer would receive full acceleration of equity grants made in 2018 and 2019. None of our current employment agreements provide for a so-called Section 4999 excise tax “gross-up,” and we have a policy against providing so-called Section 4999 excise tax “gross-up” in the future.

Jeffrey M. Leiden

The terms and conditions of Dr. Leiden's employment are governed by a written employment contract, which was amended and restated in November 2016, and expires on March 31, 2020. Dr. Leiden's employment agreement provides that he is entitled to receive compensation as determined by our board of directors and is eligible to receive the benefits generally made available to our executives. In addition, Dr. Leiden has agreed not to engage in specified competitive activities for 18 months after his employment with us terminates.

If (i) Dr. Leiden's employment is terminated by us without cause or (ii) he terminates his employment for good reason, he would be entitled to receive, subject to limited exceptions:

Severance Payment:	A) 100% of the sum of his (i) base salary at the time of termination and (ii) target bonus for the year in which his employment is terminated B) A pro-rated bonus for the year in which the termination occurs based on his target bonus for the year in which the termination occurs
Equity:	Outstanding options and restricted stock units unvested on the termination date would receive partial vesting based on his years of service as an employee or non-employee director. This percentage is currently 90% and increases by 10% of each full year of service. Options would remain exercisable for a ten year term.
Employee Benefits:	Continuation of certain employee benefits for up to 18 months

If (i) Dr. Leiden's employment is terminated by us without cause or (ii) he terminates his employment for good reason, in each case, within two years after a change of control of Vertex, he would instead be entitled to receive:

Severance Payment:	A) 299% of the sum of his (i) base salary at the time of termination and (ii) target bonus for the year in which his employment is terminated B) A pro-rated bonus for the year in which the termination occurs
Equity:	Full vesting of all outstanding options and restricted stock unit awards.
Employee Benefits:	Continuation of certain employee benefits for up to 18 months

Severance payments to Dr. Leiden in connection with a change of control may be reduced to increase their value to Dr. Leiden if such payments would be subject to an excise tax under Section 4999 of the Code.

If Dr. Leiden's employment is terminated as a result of disability, for equity awards not covered by the company-wide equity program described above, he would be entitled to receive:

- a pro-rated bonus for the year of employment termination;
- vesting of options that would have vested during the 12 months following employment termination; and
- for each RSU award, vesting of all shares that would have vested in the 12 months following the employment termination (using target or earned shares, as applicable, for performance-based awards), or, in the case of certain performance-based RSU awards, vesting of target shares pro-rata over time on a daily basis from the date of grant through the date of employment termination.

If Dr. Leiden dies while he is an employee, his estate and/or beneficiaries would receive a pro-rated bonus for the year of employment termination, as well as the full acceleration of his equity awards provided under our company-wide program.

Dr. Leiden is eligible for a company-wide program that provides, for eligible employees, upon a voluntary termination with 12 months' notice (including as a result of the expiration of the term of his employment agreement), additional vesting of outstanding equity based on years of service as an employee and non-employee director. Under his employment agreement and equity awards, Dr. Leiden currently would receive vesting of 90% of the unvested shares and this percentage will increase by 10% for each full year of service.

Amit Sachdev

Employment Agreement

The terms and conditions of Mr. Sachdev's employment are governed by a written employment contract, which was amended and restated in February 2013. His employment agreement provides that he is entitled to receive compensation as determined by our board of directors and is eligible to receive the benefits generally made available to our executives. In addition, Mr. Sachdev has agreed not to engage in specified competitive activities for a period of one year after the termination of his employment with us.

Under his employment agreement and equity agreements, if (i) Mr. Sachdev's employment is terminated without cause or (ii) he terminates his employment with us for good reason within 30 days of the event giving rise to his right to terminate for good reason, subject to notice and cure provisions, he would be entitled to receive:

Severance Payment:	The sum of his (i) base salary at the time of termination and (ii) target bonus for the year in which his employment is terminated
Options:	Vesting of outstanding options that otherwise would have vested in the 18 months following termination
Restricted Stock Units:	Vesting in full of each outstanding RSU award that would have otherwise vested in the 18 months following the termination (using target or earned shares, as applicable, for performance-based awards) or, in the case of certain performance-based RSU awards, vesting of target shares pro rata over time on a daily basis from the date of grant through the date that is 18 months following the termination
Employee Benefits:	Continuation of certain employee benefits for up to 12 months

Change of Control Agreement

We have a change of control agreement with Mr. Sachdev, which was amended and restated in February 2013. Under this agreement and his equity agreements, if we terminate Mr. Sachdev's employment without cause within the 90 days prior to or the 12 months after a change of control or he terminates his employment within 30 days of an event giving rise to a right to terminate for good reason, subject to notice and cure provisions, and the event occurs on a date within the 90 days prior to or the 12 months after a change of control, he would be entitled to receive:

Severance Payment:	A) The sum of his (i) base salary at the time of termination and (ii) target bonus for the year in which his employment is terminated B) A pro rata portion of his target bonus for the year in which the termination occurs
Options:	Full vesting of all outstanding options
Restricted Stock Units:	Vesting in full of all outstanding RSU awards (using target or earned shares, as applicable, for performance-based awards)
Employee Benefits:	Continuation of certain employee benefits for up to 12 months

Severance payments to Mr. Sachdev in connection with a change of control may be reduced to increase their value to Mr. Sachdev if such payments would be subject to an excise tax under Section 4999 of the Code.

Agreements with Mr. Arbuckle and Mr. Parini

Employment Agreements

The terms and conditions of Mr. Arbuckle's and Mr. Parini's employment are governed by written employment contracts that were entered into at the time the respective officers joined our company. Each of these officer's employment agreement provides that he is entitled to receive compensation as determined by our board of directors and is eligible to receive the benefits generally made available to our executives. In addition, each officer has agreed not to engage in specified competitive activities for a period of one year after the termination of his employment with us.

Under each employment agreement, (i) if the officer's employment is terminated without cause or (ii) the officer terminates his employment with us for good reason within 30 days of the event giving rise to his right to terminate for good reason, subject to notice and cure provisions, he would be entitled to receive:

Severance Payment:	The sum of his (i) base salary at the time of termination and (ii) target bonus for the year in which his employment is terminated
Employee Benefits:	Continuation of certain employee benefits for up to 12 months

Change of Control Agreements

We have a change of control agreement with each of Mr. Arbuckle and Mr. Parini that were entered into at the time the respective officer joined our company. Under this agreement and the executive's equity agreements, if we terminate the employment of the officer without cause on a date within the 90 days prior to or the 12 months after a change of control or any of these individuals terminates his employment within 30 days of an event giving rise to a right to terminate for good reason, subject to notice and cure provisions, and the event occurs on a date within the 90 days prior to or the 12 months after a change of control, he would be entitled to receive:

Severance Payment:	A) The sum of his (i) base salary at the time of termination and (ii) target bonus for the year in which his employment is terminated B) A pro rata portion of his target bonus for the year in which the termination occurs
Options:	Full vesting of all outstanding options
Restricted Stock Units:	Vesting in full of all outstanding RSU awards (using target or earned shares, as applicable, for performance-based awards)
Employee Benefits:	Continuation of certain employee benefits for up to 12 months

Severance payments to the officer in connection with a change of control may be reduced to increase their value to the applicable officer if such payments would be subject to an excise tax under Section 4999 of the Code.

Former Executive Officers

Mr. Chodakewitz received the benefits described under the table captioned "Summary of Termination and Change of Control Benefits" when he retired in the first quarter of 2019. Mr. Smith received the benefits described under the table captioned "Summary of Termination and Change of Control Benefits" when his employment with us was terminated in the first quarter of 2019. Mr. Graney did not receive any benefits when his employment with us ended in the first quarter of 2019.

PAY RATIO

CEO Pay Ratio

The overall structure of our compensation and benefits programs are broadly similar across our organization, including a broad-based equity program pursuant to which all full-time employees receive equity, with differences reflecting the level of responsibility of the employees.

In 2018:

- **The ratio of our CEO total compensation for Dr. Leiden to our median employee's total compensation was 81:1.**
- Dr. Leiden's total compensation equaled \$18.8 million
- The total annual compensation for Vertex's median employee equaled \$232,178

Our population and compensation structure in 2018 were not modified in a way in which we believe would be reasonably likely to significantly impact our pay ratio disclosure. As such, we are using the same methodology used to identify our median employee that we used in 2017, as described below. However, the median employee identified in 2017 was promoted during 2018, and as such, as permitted by SEC rules, for purposes of the pay ratio analysis, we are using a substantially similarly paid employee to the median identified in 2017.

Methodology

Our measure of compensation for the median employee was consistently applied and includes:

- Base salary (including any local allowances)
- Incentive pay (including cash bonuses, sales incentives and other variable pay programs)
- Grant date fair value of equity awards
- Any other cash awards or payments

We included all Vertex employees on October 1, 2017 located in five countries for the purposes of determining the median employee, which represented 95% of our employees globally (2,208 of our 2,323 global employees). As of October 1, 2017, we had 1,882 U.S. employees. We excluded 115 employees from 13 countries (Canada, France, Italy, Netherlands, Spain, Ireland, Sweden, Austria, Brazil, Denmark, Greece, Belgium, Portugal and Poland) under the SEC's *de minimis* exception.

We used the following material assumptions in applying our methodology:

- **Annualized Pay.** Base pay was annualized for employees who worked a partial year.
- **Reasonable Estimates.** Variable pay programs are a significant component of our pay for performance philosophy. Reasonable estimates were used for employees whose participation in our annual cash incentives/bonuses and long-term incentives/ equity awards were limited by their date of hire; provided that (i) no estimate was used for annual cash incentives/bonuses if an employee received any form of cash award upon hire and (ii) no estimate was used for long-term incentives/equity awards if an employee received an equity award upon hire.
- **Foreign Exchange Rates.** Foreign currencies were converted into U.S. dollars using the average monthly rates for the 12 month measurement period.

SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

The following table sets forth information regarding beneficial ownership of our common stock as of April 10, 2019, by:

- each shareholder known by us to be the beneficial owner of more than 5% of our common stock on that date;
- each of our directors;
- each named executive officer; and
- all directors and executive officers as a group.

Name and Address	Shares Beneficially Owned ⁽¹⁾	Percentage of Total ⁽²⁾
T. Rowe Price Associates, Inc. ⁽³⁾ 100 E. Pratt Street Baltimore, Maryland 21202	25,749,411	10.0%
FMR LLC ⁽⁴⁾ 245 Summer Street Boston, Massachusetts 02210	20,948,014	8.2%
BlackRock, Inc. ⁽⁵⁾ 55 East 52nd Street New York, New York 10055	19,607,810	7.6%
The Vanguard Group ⁽⁶⁾ 100 Vanguard Blvd. Malvern, Pennsylvania 19355	19,389,191	7.6%
Sangeeta N. Bhatia ⁽⁷⁾	25,832	*
Lloyd Carney ⁽⁷⁾	—	*
Alan Garber ⁽⁷⁾	8,789	*
Terrence C. Kearney ⁽⁷⁾	84,402	*
Yuchun Lee ⁽⁷⁾	105,579	*
Jeffrey M. Leiden ⁽⁷⁾	807,596	*
Margaret G. McGlynn ⁽⁷⁾	73,710	*
Bruce I. Sachs ⁽⁷⁾	147,938	*
Elaine S. Ullian ⁽⁷⁾	95,292	*
William D. Young ⁽⁷⁾	92,527	*
Stuart A. Arbuckle ⁽⁷⁾	23,373	*
Michael Parini ⁽⁷⁾	15,903	*
Amit Sachdev ⁽⁷⁾	122,220	*
Jeffery Chodakewitz ⁽⁷⁾	27,227	*
Thomas Graney ⁽⁷⁾	7,524	*
Ian F. Smith	—	*
All directors and executive officers as a group (19 persons) ⁽⁷⁾	1,704,186	0.7%

* Less than 1%

(1) Beneficial ownership of shares for purposes of this proxy statement is determined in accordance with applicable SEC rules and includes shares of common stock as to which a person has or shares voting power and/or investment power, including dispositive power. The persons and entities named in the table have sole voting and investment power with respect to all shares shown as beneficially owned by them, except as noted below. Information with respect to persons other than directors and executive officers is based solely upon Schedules 13G and amendments thereto filed with the SEC in the first quarter of 2019.

(2) Percentage ownership is based on 256,333,284 shares of our common stock outstanding on April 10, 2019.

(3) Reflects the securities beneficially owned by clients of one or more investment advisers directly or indirectly affiliated with T. Rowe Price Associates, Inc. T. Rowe Price Associates, Inc. has sole voting power with respect to 9,150,628 of the shares.

(4) Reflects the securities beneficially owned, or that may be deemed to be beneficially owned, by FMR LLC, certain of its subsidiaries and affiliates, and other companies. FMR LLC has sole voting power with respect to 3,110,379 of the shares.

(5) Reflects the securities beneficially owned by clients of one or more investment advisers directly or indirectly owned by BlackRock, Inc. BlackRock, Inc. has sole voting power with respect to 17,365,876 of the shares.

(6) Includes 234,931 shares beneficially owned by Vanguard Fiduciary Trust Company and 207,104 shares held by Vanguard Investments Australia, Ltd., each of which are wholly-owned subsidiaries of The Vanguard Group, Inc. The Vanguard Group, Inc. has sole voting power with respect to 314,635 of the shares and sole dispositive power with respect to 19,023,724 of the shares.

- (7) Includes shares that may be acquired upon the exercise of options exercisable within 60 days after April 10, 2019, unvested shares of restricted stock as of April 10, 2019, unvested restricted stock units vesting within 60 days of April 10, 2019 and deferred stock units as of April 10, 2019 issued pursuant to our Non-Employee Director Deferred Compensation Plan, as follows:

	Stock Options Exercisable Within 60 Days of April 10, 2019	Unvested Shares of Restricted Stock Awards as of April 10, 2019	Unvested Restricted Units Vesting Within 60 Days of April 10, 2019	Deferred Stock Units as of April 10, 2019
Sangeeta N. Bhatia	20,953	—	1,801	—
Lloyd Carney	—	—	—	—
Alan Garber	5,889	—	2,351	—
Terrence C. Kearney	75,972	—	1,801	—
Yuchun Lee	98,931	—	1,801	—
Jeffrey M. Leiden	805,116	—	—	—
Margaret G. McGlynn	65,597	—	1,801	2,188
Bruce I. Sachs	125,597	—	1,801	9,330
Elaine S. Ullian	83,097	—	1,801	—
William D. Young	85,597	—	1,801	—
Stuart A. Arbuckle	13,511	—	—	—
Michael Parini	12,453	3,450	—	—
Amit Sachdev	102,374	—	—	—
Jeffery Chodakewitz	27,227	—	—	—
Thomas Graney	2,609	—	—	—
All directors and executive officers as a group (19 persons)	1,575,161	3,450	14,958	11,518

Section 16(a) Beneficial Ownership Reporting Compliance

Section 16(a) of the Exchange Act requires directors, officers and persons who are beneficial owners of more than 10% of our common stock to file with the SEC reports of their ownership of our securities and of changes in that ownership. To our knowledge, based upon a review of copies of reports filed with the SEC with respect to the fiscal year ended December 31, 2018 and written representations by our directors and officers that no other reports were required with respect to their transactions, all reports required to be filed under Section 16(a) by our directors and officers and persons who were beneficial owners of more than 10% of our common stock were timely filed.

OTHER INFORMATION

Other Matters

The 2019 annual meeting of shareholders is called for the purposes set forth in the notice. Our board of directors does not know of any other matters to be considered by the shareholders at the 2019 annual meeting other than the matters described in the notice. However, the enclosed proxy confers discretionary authority on the persons named in the proxy card with respect to matters that may properly come before the annual meeting and that are not known to our board at the date this proxy statement was printed. It is the intention of the persons named in the proxy card to vote in accordance with their best judgment on any such matter.

Shareholder Proposals for the 2020 Annual Meeting and Nominations for Director

In order to be considered for inclusion in the proxy statement for our 2020 annual meeting of shareholders, shareholder proposals must be received by us no later than December 31, 2019. If we do not receive notice of a matter to be considered for presentation at the 2020 annual meeting of shareholders by March 15, 2020, our proxy holders will have the right to exercise discretionary voting authority with respect to the proposal without including information regarding the proposal in our proxy materials. Proposals should be sent to the attention of our corporate secretary at our offices at 50 Northern Avenue, Boston, Massachusetts 02210.

If a shareholder wishes to nominate a candidate for election to our board of directors at the 2020 annual meeting of shareholders, but is not eligible or does not elect to have such candidate included in the proxy statement for our 2020 annual meeting of shareholders, such nomination may be submitted to our corporate secretary no later than March 7, 2020, and must include:

- the name and address of the shareholder who intends to make the nomination and of the person or persons to be nominated;
- a representation that the shareholder is a holder of record of our stock entitled to vote at such meeting and intends to appear in person or by proxy at the meeting to nominate the person or persons specified in the notice;
- a description of all arrangements or understandings between the shareholder and each nominee and any other person or persons (naming such person or persons) pursuant to which the nomination or nominations are to be made by the shareholder;
- the other information regarding each nominee proposed by the shareholder that would be required to be included in a proxy statement filed pursuant to the proxy rules of the SEC; and
- the consent of each nominee to serve on our board of directors if so elected.

If a shareholder wishes to nominate a candidate for election to our board at the 2020 annual meeting of shareholders, and is eligible and elects to have such candidate included in the proxy statement for our 2020 annual meeting of shareholders pursuant to our proxy access by-law, such nomination must be submitted to our corporate secretary no later than March 7, 2020 and must include, in addition to the information set forth above for other shareholder nominees, the information set forth in Section 8(e) of Article II of our by-laws.

Shareholder Communications to the Board

Generally, shareholders who have questions or concerns should contact our investor relations department at (617) 341-6100. However, any shareholder who wishes to address questions regarding our business directly with our board of directors, or any individual director, should direct his or her questions, in writing, in care of our corporate secretary, to our offices at 50 Northern Avenue, Boston, Massachusetts 02210. Under procedures approved by our board, including a majority of our independent directors, all substantive communications shall be reviewed by our corporate secretary and forwarded or reported to the chair of the corporate governance and nominating committee, the independent directors and/or our full board, as deemed appropriate, with the exception of those communications relating to ordinary or routine business affairs, personal grievances or matters as to which we tend to receive repetitive or duplicative communications.

Householding of Annual Meeting Materials

Some banks, brokers and other nominee record holders may be participating in the practice of “householding” proxy statements and annual reports. This means that only one copy of our proxy statement and annual report may have been sent to multiple shareholders in your household. We will promptly deliver a separate copy of these documents to you if you write or call our corporate secretary at the following address or phone number: 50 Northern Avenue, Boston, Massachusetts 02210, telephone (617) 341-6100. If you want to receive separate copies of the annual report and proxy statement in the future, or if you are receiving multiple copies and would like to receive only one copy for your household, you should contact your bank, broker, or other nominee record holder, or you may contact us at the above address and phone number.

Solicitation

We will bear the cost of soliciting proxies, including expenses in connection with preparing and mailing this proxy statement. We have retained MacKenzie Partners, Inc. to assist in the solicitation of proxies at an estimated cost of approximately \$20,000. Proxies also may be solicited by our directors and employees by mail, by telephone, in person or otherwise. Employees will not receive additional compensation for solicitation efforts. In addition, we will request banks, brokers and other custodians, nominees and fiduciaries to forward proxy material to the beneficial owners of common stock and to obtain voting instructions from the beneficial owners. We will reimburse those firms for their reasonable expenses in forwarding proxy materials and obtaining voting instructions.

Availability of Materials

Our Annual Report on Form 10-K for the fiscal year ended December 31, 2018 has been filed with the SEC and provides additional information about us. It is available on the internet at www.vrtx.com and is available in paper form (other than exhibits thereto) to beneficial owners of our common stock without charge upon written request to Investor Relations, 50 Northern Avenue, Boston, Massachusetts 02210. In addition, it is available to holders of record of our common stock at www.envisionreports.com/vrtx and to beneficial holders of our common stock at www.edocumentview.com/vrtx.

Forward Looking Statements

This proxy statement contains forward-looking statements as defined in the Private Securities Litigation Reform Act of 1995, including, without limitation, statements regarding our medicines, statements with respect to potential regulatory approval of our drug candidates and expected clinical development plans and timing, as well as statements with respect to Vertex’s potential future financial performance. While we believe the forward-looking statements contained in this proxy statement are accurate, these forward-looking statements represent our beliefs only as of the date of this proxy statement and there are a number of factors that could cause actual events or results to differ materially from those indicated by such forward-looking statements, including risks listed under Risk Factors in our Annual Report on Form 10-K for the fiscal year ended December 31, 2018 and available through the company’s website at www.vrtx.com. We disclaim any obligation to update the information contained in this proxy statement as new information becomes available.

FREQUENTLY ASKED QUESTIONS REGARDING THE ANNUAL MEETING

What is the Purpose of the Annual Meeting?

At the annual meeting, shareholders will act upon the matters outlined in the Notice of Annual Meeting of Shareholders. These include:

- The election of directors;
- The approval of the amendment and restatement of our 2013 Stock and Option Plan to, among other things, increase the number of shares available under the plan by 5.0 million shares;
- The approval of the amendment and restatement of our 2013 Employee Stock Purchase Plan to, among other things, increase the number of shares available under the plan by 2.0 million shares;
- The ratification of the appointment of Ernst & Young LLP as our independent registered public accounting firm;
- The approval, on an advisory basis, of the compensation program for our named executive officers;
- A shareholder proposal requesting annual reporting on the integration of risks related to drug pricing into our executive compensation program; and
- A shareholder proposal requesting that we prepare a report on our policies and activities with respect to lobbying.

Management, members of our board and representatives of Ernst & Young LLP are expected to attend the annual meeting and be available to respond to questions from shareholders.

What is a Proxy?

It is your legal designation of another person to vote the stock you own in the manner you direct. That other person is called a proxy. If you designate someone as your proxy in a written document, that document also is called a proxy or a proxy card. The board of directors has designated Jeffrey M. Leiden, Michael Parini and Sabrina Yohai to serve as proxies at the annual meeting.

What is a Proxy Statement?

It is a document that provides certain information about a company and matters to be voted upon at a meeting of shareholders. The rules of the SEC and other applicable laws require us to give you, as a shareholder, the information in this proxy statement and certain other information when we are soliciting your vote.

What is the Difference between a Shareholder of Record and a Shareholder Who Holds Stock in Street Name?

Shareholders of Record. If your shares are registered in your name with our transfer agent, Computershare, you are a shareholder of record with respect to those shares, and these proxy materials were sent directly to you by Computershare.

Street Name Holders. If you hold your shares in an account at a bank or broker, then you are the beneficial owner of shares held in "street name." The proxy materials were forwarded to you by your bank or broker, who is considered the shareholder of record for purposes of voting at the annual meeting. As a beneficial owner, you have the right to direct your bank or broker how to vote the shares held in your account.

How Many Shares Must be Represented in Order to Hold the Annual Meeting?

In order for us to conduct the annual meeting, holders of a majority of the shares entitled to vote as of the close of business on the record date must be present in person or by proxy. This constitutes a quorum. If you are a shareholder of record, your shares are counted as present if you properly return a proxy card or voting instruction form by mail or if you attend the annual meeting and vote in person. If you are the beneficial owner of shares held in "street name," you must follow the instructions of your bank or broker in order to direct them how to vote the shares held in your account. Abstentions and broker non-votes will be counted as present for purposes of establishing a quorum. If a quorum is not present, we will adjourn the annual meeting until a quorum is obtained.

How Can I Vote at the Annual Meeting if I Own Shares in Street Name?

If you are a street name holder, you may not vote your shares at the annual meeting unless you obtain a legal proxy from your bank or broker. A legal proxy is a bank's or broker's authorization for you to vote the shares it holds in its name on your behalf.

What is the Record Date and What Does it Mean?

The record date for the annual meeting is April 10, 2019 and was established by our board of directors. On the record date, there were 256,333,284 shares of our common stock outstanding, each of which is entitled to one vote on each matter properly brought before the annual meeting. Owners of record of common stock at the close of business on the record date are entitled to:

- receive notice of the annual meeting; and
- vote at the annual meeting and any adjournment or postponement of the annual meeting.

If I Submit a Proxy, May I Later Revoke it and/or Change my Vote?

Shareholders may revoke a proxy and/or change their vote prior to the completion of voting at the annual meeting by:

- signing another proxy card with a later date and delivering it to our corporate secretary at 50 Northern Avenue, Boston, Massachusetts 02210, before the annual meeting; or
- voting at the annual meeting, if you are a shareholder of record or hold your shares in street name and have obtained a legal proxy from your bank or broker.

What if I do not Specify a Choice for a Matter when Returning a Proxy?

Shareholders should specify their choice for each matter following the directions described on their proxy card. If no specific instructions are given, proxies that are signed and returned will be voted:

- FOR the election of all director nominees;
- FOR the amendment and restatement of our 2013 Stock and Option plan to, among other things, increase the number of shares available for issuance by 5.0 million shares;
- FOR the amendment and restatement of our Employee Stock Purchase Plan to, among other things, increase the number of shares available for issuance by 2.0 million shares;
- FOR ratification of the appointment of Ernst & Young LLP as our independent registered public accounting firm for the year ending December 31, 2019;
- FOR our compensation program for our named executive officers;
- AGAINST the shareholder proposal requesting annual reporting on the integration of risks related to drug pricing into our executive compensation program; and
- AGAINST the shareholder proposal requesting that we prepare a report on our policies and activities with respect to lobbying.

Are My Shares Voted if I do not Provide a Proxy?

If you are a shareholder of record and do not provide a proxy, you must attend the annual meeting in order to vote. If you hold shares through an account with a bank or broker, your shares may be voted by the bank or broker if you do not provide voting instructions. Banks and brokers have the authority under applicable rules to vote shares on routine matters for which their customers do not provide voting instructions. The ratification of Ernst & Young LLP as our independent registered public accounting firm is considered a routine matter. Each of the other proposals, including the election of directors, the approval of the amendment and restatement of our 2013 Stock and Option Plan, the approval of the amendment and restatement of our Employee Stock Purchase Plan, the advisory vote with respect to our executive compensation program and the two shareholder proposals are not considered routine, and banks and brokers cannot vote shares without instruction on those matters. Shares that banks and brokers are not authorized to vote on those matters are counted as "broker non-votes" and will have no effect on the results of those votes (other than for Item 2, where "broker non-votes" will have the same effect as votes against the proposal)

What Vote is Required to Approve Each Proposal and How are Votes Counted?

Item 1: Election of Directors

To be elected, the number of votes cast "FOR" a director nominee in an uncontested election must exceed the number of votes cast "AGAINST" that nominee. Abstentions are not counted for purposes of electing directors. Our Corporate Governance Principles contain procedures to be followed in the event that one or more directors do not receive a majority of the votes cast "FOR" his or her election.

Item 2: Approval of the Amendment and Restatement of our 2013 Stock and Option Plan

To be approved, this proposal must receive an affirmative vote from shareholders present in person or represented by proxy at the annual meeting representing a majority of the votes cast on the proposal. Abstentions will have no effect on the results of this vote.

Item 3: Approval of the Amendment and Restatement of our Employee Stock Purchase Plan.

To be approved, this proposal must receive an affirmative vote from shareholders present in person or represented by proxy at the annual meeting representing a majority of the votes cast on the proposal. Abstentions will have no effect on the results of this vote.

Item 4: Ratification of the Appointment of Independent Registered Public Accounting Firm

To be approved, this proposal must receive an affirmative vote from shareholders present in person or represented by proxy at the annual meeting representing a majority of the votes cast on the proposal. Abstentions will have no effect on the results of this vote.

Item 5: Advisory Vote to Approve Named Executive Officer Compensation

To be approved, this proposal must receive an affirmative vote from shareholders present in person or represented by proxy at the annual meeting representing a majority of the votes cast on the proposal. Abstentions will have no effect on the results of this vote.

Item 6: Shareholder Proposal Requesting Annual Reporting on the Integration of Risks Related to Drug Pricing in our Executive Compensation Program

To be approved, this proposal must receive an affirmative vote from shareholders present in person or represented by proxy at the annual meeting representing a majority of the votes cast on the proposal. Abstentions will have no effect on the results of this vote.

Item 7: Shareholder Proposal Requesting that we Prepare a Report on our Policies and Activities With Respect to Lobbying

To be approved, this proposal must receive an affirmative vote from shareholders present in person or represented by proxy at the annual meeting representing a majority of the votes cast on the proposal. Abstentions will have no effect on the results of this vote.

Where Can I Find More Information About My Voting Rights as a Shareholder?

The SEC has an informational website that provides shareholders with general information about how to cast their vote and why voting should be an important consideration for shareholders. You may access that website at sec.gov/spotlight/proxymatters.shtml.

Appendix A Amended and Restated 2013 Stock and Option Plan

1. DEFINITIONS

Unless otherwise specified or unless the context otherwise requires, the following terms, as used in this Vertex Pharmaceuticals Incorporated Amended and Restated 2013 Stock and Option Plan, have the following meanings:

Accounting Rules means Financial Accounting Standards Board Accounting Standards Codification Topic 718, or any successor provision.

Administrator means the Board of Directors and/or a committee of the Board of Directors to which the Board of Directors has delegated power to act on its behalf in administering this Plan in whole or in part.

Affiliate means a corporation that, for purposes of Section 424 of the Code, is a parent or subsidiary of the Company, direct or indirect.

Board of Directors means the Board of Directors of the Company.

Code means the United States Internal Revenue Code of 1986, as amended.

Common Stock means shares of the Company's common stock, \$.01 par value.

Company means Vertex Pharmaceuticals Incorporated, a Massachusetts corporation.

Disability means a disability entitling the Participant to benefits under the Company's long-term disability program, as in effect from time to time. With regard to any payment considered to be nonqualified deferred compensation under Section 409A of the Code, to the extent applicable, that is payable upon a Termination of Service due to Disability, to avoid the imposition of an additional tax, interest or penalty under Section 409A of the Code, no amount will be payable unless such Disability constitutes a disability or becoming disabled within the meaning of Section 1.409A-3(i)(4) of the Treasury Regulations.

Employee means an employee of the Company or of an Affiliate (including, without limitation, an employee who is also serving as an officer or director of the Company or of an Affiliate), who is designated by the Administrator to be eligible to be granted one or more Stock Rights under the Plan.

Exchange Act means the Securities Exchange Act of 1934, as amended.

Fair Market Value of a share of Common Stock on a particular date shall be the mean between the highest and lowest quoted selling prices on such date (the "valuation date") on the securities market where the Common Stock is traded, or if there were no sales on the valuation date, on the next preceding date within a reasonable period (as determined in the sole discretion of the Administrator) on which there were sales. If there were no sales in such a market within a reasonable period, the Fair Market Value shall be as determined in good faith by the Administrator in its sole discretion. The Fair Market Value as determined in this paragraph shall be rounded down to the next lower whole cent if the foregoing calculation results in fractional cents.

Full Value Award means any Stock Grant or Stock-Based Award other than Options and Stock Appreciation Rights.

ISO means an option entitling the holder to acquire Shares upon payment of the exercise price that is intended to qualify as an incentive stock option under Section 422 of the Code.

Non-Employee Director means a member of the Board of Directors who is not an employee of the Company or any Affiliate.

Non-Qualified Option means an option entitling the holder to acquire Shares upon payment of the exercise price that is not an ISO.

Option means an ISO or Non-Qualified Option.

Participant means an Employee, Non-Employee Director, consultant or advisor of the Company or an Affiliate to whom one or more Stock Rights are granted under the Plan. As used herein, "Participant" shall include "Participant's Survivors" and a Participant's permitted transferees where the context requires.

Participant's Survivors means a deceased Participant's legal representatives and/or any person or persons who acquires the Participant's rights to a Stock Right by will or by the laws of descent and distribution.

Plan means this Vertex Pharmaceuticals Incorporated Amended and Restated 2013 Stock and Option Plan, as amended from time to time.

Restricted Stock Units means an unfunded and unsecured promise, denominated in shares of Common Stock, to deliver Common Stock or cash measured by the value of Common Stock in the future, subject to the satisfaction of specified performance or other vesting conditions.

Shares means shares of the Common Stock as to which Stock Rights have been or may be granted under the Plan or any shares of capital stock into which the Shares are changed or for which they are exchanged within the provisions of the Plan.

Stock Agreement means an agreement between the Company and a Participant delivered pursuant to the Plan with respect to a Stock Right, in such form as the Administrator shall approve.

Stock Appreciation Right means a right entitling the holder upon exercise to receive an amount (payable in cash or in shares of Common Stock of equivalent value) equal to the excess of the Fair Market Value of the shares of Common Stock subject to the right over the base value (i.e., the exercise price) from which appreciation under the Stock Appreciation Right is to be measured.

Stock-Based Award means Restricted Stock Units, Stock Appreciation Rights or any other grant by the Company under the Plan of an equity award, equity-based award or other award that is convertible into Common Stock that is not an Option or Stock Grant.

Stock Grant means a grant by the Company of Shares under the Plan that may or may not be subject to restrictions requiring that the Shares underlying the Stock Grant be redelivered or offered for sale to the Company if specified service or performance-based conditions are not satisfied.

Stock Right means an Option (including an ISO or a Non-Qualified Stock Option), Stock Grant, or Stock-Based Award.

Substitute Stock Rights means Stock Rights issued under the Plan in substitution for equity awards of an acquired company that are converted, replaced or adjusted in connection with the acquisition.

Termination of Service means that a Participant ceases to be an Employee, Non-Employee Director, consultant or advisor with the Company and its Affiliates (for any reason other than death). A change in a Participant's form of service (e.g., from Employee to Non-Employee Director, consultant or advisor) shall not be a Termination of Service hereunder. Notwithstanding the foregoing, in construing the provisions applicable to any Stock Right relating to the payment of "nonqualified deferred compensation" (subject to Section 409A of the Code) upon a termination or cessation of employment or service, references to termination or cessation of employment or service, separation from service, retirement or similar or correlative terms will be construed to require a "separation from service" (as that term is defined in Section 1.409A-1(h) of the Treasury Regulations, after giving effect to the presumptions contained therein) from the Company and from all other corporations and trades or businesses, if any, that would be treated as a single "service recipient" with the Company under Section 1.409A-1(h)(3) of the Treasury Regulations.

2. PURPOSES OF THE PLAN

The Plan is intended to encourage ownership of Shares by Employees, Non-Employee Directors and certain consultants and advisors to the Company in order to attract such persons, to induce them to work for the benefit of the Company or of an Affiliate and to provide additional incentive for them to promote the success of the Company or of an Affiliate. The Plan provides for the granting of Stock Rights to Employees, Non-Employee Directors, consultants and advisors of the Company.

3. SHARES SUBJECT TO THE PLAN

The number of Shares subject to this Plan as to which Stock Rights may be granted from time to time shall be equal to the sum of:

- a. 40,875,861 shares of Common Stock; and
- b. the number of shares subject to awards granted under the Company's Amended and Restated 2006 Stock and Option Plan (the "**2006 Plan**") which expire, terminate or are otherwise surrendered, cancelled, forfeited or repurchased by the Company at their original issuance price pursuant to a contractual repurchase right (subject, however, in the case of ISOs, to any limitations under the Code),

or the equivalent of such number of Shares after the Administrator, in its sole discretion, has interpreted the effect of any stock split, stock dividend, combination, recapitalization or similar transaction in accordance with Section 17 of this Plan. Subject to Section 17 of this Plan, and the provisions of the second paragraph of this Section 3, the number of Shares remaining subject to this Plan shall be reduced by (i) one Share for each Share subject to a Stock Right granted under this Plan that is not a Full Value Award and (ii) 1.66 Shares for each Share (each, a "Full-Value Award Share") subject to a Stock Right granted under this Plan that is a Full Value Award.

If an Option granted hereunder ceases to be outstanding, in whole or in part (other than by exercise), or if the Company shall reacquire (at no more than its original issuance price) any Shares issued pursuant to a Stock Grant, or if any Stock Right expires or is forfeited, cancelled or otherwise terminated or results in any Shares not being issued, the unissued Shares that were subject to such Stock Right shall again be available for issuance from time to time pursuant to this Plan; provided, however, that, the following Shares may not again be made available for issuance under the Plan: (i) Shares that are not issued or delivered because they are applied to the payment of the exercise or purchase price of any Stock Right or to satisfy the tax withholding requirements with respect to any Stock Right, (ii) the full number of Shares underlying any Stock Appreciation Right any portion of which is settled in Shares (and not only the number of Shares delivered in settlement of the Stock Right) and (iii) any Shares that have been repurchased by the Company using proceeds directly attributable to the exercise of Options. To the extent that Shares are returned to the Plan pursuant to this Section 3, (i) 1.66 Shares, for each Full Value Award Share granted under this Plan, and (ii) one Share, for all other Shares (including Shares returned from the 2006 Plan in accordance with clause (b) above), shall again be available for issuance from time to time pursuant to this Plan.

The maximum number of Shares that may be issued in satisfaction of ISOs is 27,875,861 Shares.

The Administrator may grant Substitute Stock Rights under the Plan. To the extent consistent with the requirements of Section 422 of the Code and the regulations thereunder (if applicable) and other applicable legal requirements (including applicable stock exchange requirements), Common Stock issued under Substitute Stock Rights will be in addition to and will not reduce the number of Shares available for Stock Rights under the Plan set forth in this Section 3, but, notwithstanding anything in this Section 3 to the contrary, if any Substitute Stock Right is settled in cash or expires, becomes unexercisable, terminates or is forfeited to or repurchased by the Company without the issuance of Common Stock, the Shares previously subject to such Stock Right will not be available for future grants under the Plan. The Administrator will determine the extent to which the terms and conditions of the Plan apply to Substitute Stock Rights, if at all, provided, however, that Substitute Stock Rights will not be subject to the last sentence of Section 6.1 or the per-Participant annual limits on grants of Stock Rights described in Section 13 below.

4. ADMINISTRATION OF THE PLAN

The Administrator shall administer the Plan. Subject to the provisions of the Plan, the Administrator is authorized to:

- a. Interpret the provisions of the Plan and of any Stock Right or Stock Agreement and to make all rules and determinations that it deems necessary or desirable for the administration of the Plan;
- b. Determine which Employees, Non-Employee Directors, consultants and advisors of the Company and its Affiliates shall be granted Stock Rights;
- c. Determine the number of Shares and exercise price for which a Stock Right shall be granted;
- d. Specify the terms and conditions upon which a Stock Right or Stock Rights may be granted;
- e. In its discretion, accelerate:
 - (i) the date of exercise of any installment of any Option; or
 - (ii) the date or dates of vesting of Shares, or lapsing of Company repurchase rights with respect to any Shares, under any Stock Rights; and
- f. In its discretion, extend the period during which an Option may be exercised (but not beyond the earlier of the expiration date of the Option and the 10th anniversary of the date the Option was granted);

provided, however, that all such interpretations, rules, determinations, terms and conditions shall be made and prescribed in the context of preserving the tax status under Section 422 of the Code of those Options which are designated as ISOs (unless the holder of any such Option otherwise agrees). Subject to the foregoing, the interpretation and construction by the Administrator of any provisions of the Plan or of any Stock Right granted under it shall be final.

The Administrator may employ attorneys, consultants, accountants or other persons, and the Administrator, the Company and its officers and directors shall be entitled to rely upon the advice, opinions or valuations of such persons. All actions taken and all interpretations and determinations made by the Administrator in good faith shall be final and binding upon the Company, all Participants, and all other interested persons. Neither the Administrator, nor the Company, nor any person acting on behalf of the Administrator or the Company shall be personally liable for any action, determination, or interpretation made in good faith with respect to this Plan or grants hereunder or for any acceleration of income or additional tax (including interest and penalties) asserted by reason of the failure of a Stock Right to satisfy the requirements of Section 422 of the Code, Section 409A of the Code or by reason of Section 4999 of the Code, or otherwise with respect to a Stock Right. Each member of the Administrator shall be indemnified and held harmless by the Company against any cost or expense (including counsel fees) reasonably incurred by him or her or any liability (including any sum paid in settlement of a claim with the approval of the Company) arising out of any act or omission to act in connection with this Plan unless arising out of such member's own fraud or bad faith. Such indemnification shall be in addition to any rights of indemnification the members of the Administrator may have as directors or otherwise under the by-laws of the Company, or any agreement, vote of shareholders or disinterested directors, or otherwise.

5. ELIGIBILITY FOR PARTICIPATION

The Administrator shall, in its sole discretion, select the individuals to be the Participants in the Plan; provided, however, that each Participant must be an Employee, Non-Employee Director, consultant or advisor of the Company or of an Affiliate at the time a Stock Right is granted. Notwithstanding the foregoing, the Administrator may authorize the grant of a Stock Right to a person not then an Employee, Non-Employee Director, consultant or advisor of the Company or of an Affiliate; provided, however, that the actual grant of such Stock Right shall not be effective until such person becomes eligible to be a Participant. ISOs may be granted only to Employees. The granting of any Stock Right to any individual shall neither entitle that individual to, nor disqualify him or her from, participation in other grants of Stock Rights.

6. TERMS AND CONDITIONS OF OPTIONS

6.1 *General*. Each Option shall be set forth in writing in a Stock Agreement, duly executed by the Company and, to the extent required by law or requested by the Company, by the Participant. The Administrator may provide that Options be granted subject to such terms and conditions, consistent with the terms and conditions specifically required under this Plan, as the Administrator may deem appropriate including, without limitation, subsequent approval by the shareholders of the Company of this Plan or any amendments thereto. Each Stock Agreement shall state the exercise price (per share) of the Shares covered by each Option, the number of Shares to which it pertains, the date or dates on which it first is exercisable and the date after which it may no longer be exercised (subject to Sections 11 and 12 of this Plan). Options may vest or become exercisable in installments over a period of time, or upon the achievement of certain conditions or the attainment of stated goals or events. The exercise price per share of Shares covered by an Option (including both ISOs and Non-Qualified Options) shall not be less than one hundred percent (100%) of the Fair Market Value per share of the Common Stock on the date of grant.

6.2 *ISOs*. Each Option intended to be an ISO shall be issued only to an Employee. In addition to the provisions set forth in Section 6.1, ISOs shall be subject to the following terms and conditions, with such additional restrictions or changes as the Administrator determines are appropriate but not in conflict with Section 422 of the Code and relevant regulations and rulings of the Internal Revenue Service:

6.2.1 *ISO Exercise Price*. In addition to the limitation set forth in Section 6.1, the exercise price per share of the Shares covered by each ISO granted to a Participant who owns, directly or by reason of the applicable attribution rules in Section 424(d) of the Code, more than ten percent (10%) of the total combined voting power of all classes of stock of the Company or an Affiliate shall not be less than one hundred ten percent (110%) of the Fair Market Value on the date of grant.

6.2.2 *Term of ISO*. Each ISO shall expire not more than ten (10) years from the date of grant; provided, however, that an ISO granted to a Participant who owns, directly or by reason of the applicable attribution rules in Section 424(d) of the Code, more than ten percent (10%) of the total combined voting power of all classes of stock of the Company or an Affiliate shall expire not more than five (5) years from the date of grant.

6.2.3 *Annual Limit on Incentive Stock Options*. To the extent required for "incentive stock option" treatment under Section 422 of the Code, the aggregate Fair Market Value (determined as of the time of grant) of the Shares with respect to which ISOs granted under this Plan and any other plan of the Company or its Affiliate become exercisable for the first time by a Participant during any calendar year shall not exceed the aggregate threshold for ISOs established by the Code (\$100,000 as of January 1, 2018). To the extent that any Option exceeds this limit, it shall constitute a Non-Qualified Option.

6.3 *Non-Employee Directors' Options*. Each Non-Employee Director, upon first being elected or appointed to the Board of Directors, shall, in addition to any other Stock Rights as may be determined by the Board of Directors, be granted a Non-Qualified Option to purchase that number of Shares as shall be established for such Option grants from time to time by the Board of Directors. In addition, unless otherwise determined by the Board of Directors, on June 1 of each year, each Non-Employee Director shall, in addition to any other Stock Rights as may be determined by the Board of Directors, be granted a Non-Qualified Option to purchase that number of Shares as shall be established for such Option grants from time to time by the Board of Directors. If a Non-Employee Director ceases to be any of an Employee, Non-Employee Director, consultant or advisor of the Company, Options granted under this Section 6.3 shall remain exercisable to the extent such Options are exercisable on the date of such Termination of Service, for their full term, and the provisions of Sections 11 and 12 below shall not apply to any such Options.

6.4 *Term of Options*. No Option will be granted with a term in excess of ten (10) years.

7. TERMS AND CONDITIONS OF STOCK GRANTS

Each Stock Grant shall be set forth in a Stock Agreement, duly executed by the Company and, to the extent required by law or requested by the Company, by the Participant. The Stock Agreement shall be in the form approved by the Administrator, with such changes and modifications to such form as the Administrator, in its discretion, shall approve with respect to any particular Participant or Participants. The Stock Agreement shall contain terms and conditions that the Administrator determines to be appropriate. Each Stock Agreement shall state the number of Shares to which the Stock Grant pertains and the terms of any right of the Company to reacquire the Shares subject to the Stock Grant, including the time and events upon which such rights shall accrue and the purchase price therefor, and any restrictions on the transferability of such Shares.

8. TERMS AND CONDITIONS OF STOCK-BASED AWARDS

The Administrator shall have the right to grant Stock-Based Awards having such terms and conditions as the Administrator may determine, including, without limitation, the grant of Shares based upon certain conditions, the grant of securities convertible into Shares and the grant of Stock Appreciation Rights or Restricted Stock Units. The principal terms of each Stock-Based Award shall be set forth in a Stock Agreement, duly executed by the Company and, to the extent required by law or requested by the Company, by the Participant. The Stock Agreement shall be in a form approved by the Administrator and shall contain terms and conditions that the Administrator determines to be appropriate. No Stock Appreciation Right will be granted with a term in excess of ten (10) years. The base value (i.e., exercise price) of any Stock Appreciation Right shall not be less than one hundred percent (100%) of the Fair Market Value per share of the Common Stock on the date of grant.

9. EXERCISE OF OPTIONS AND STOCK APPRECIATION RIGHTS AND ISSUANCE OF SHARES

Options and Stock Appreciation Rights (or any part or installment thereof) shall be exercised by delivery to the Company, or its designee, of a notice of exercise in any form (which may be electronic) approved by the Company, together, in the case of an Option, with provision for payment of the full purchase price in accordance with this Section for the Shares as to which the Option is being exercised, and upon compliance with any other condition(s) set forth in the Stock Agreement. Payment of the exercise price for the Shares as to which such Option is being exercised shall be made (a) in cash or by check acceptable to the Administrator, or (b) at the discretion of the Administrator, (i) through delivery of shares of Common Stock not subject to any restriction under any plan and having a Fair Market Value equal as of the date of exercise to the exercise price of the Option, (ii) in accordance with a cashless exercise program established with a securities brokerage firm, and approved by the Company, (iii) by any other means (excluding, however, delivery of a promissory note of the Participant) that the Administrator determines to be consistent with the purpose of this Plan and applicable law, or (iv) by any combination of the foregoing. Notwithstanding the foregoing, the Administrator shall accept only such payment on exercise of an ISO as is permitted by Section 422 of the Code.

Subject to the last paragraph of Section 13, if on the date the term of a Non-Qualified Option expires or on the last date such Non-Qualified Option is exercisable in accordance with Section 11 or Section 12, the Fair Market Value of a share of Common Stock exceeds the exercise price per share of the Non-Qualified Option, then the Non-Qualified Option shall automatically be exercised with respect to all then vested Shares underlying such Non-Qualified Option and, upon such automatic exercise, such Non-Qualified Option shall immediately terminate. Payment of the exercise price for the Shares as to which such Non-Qualified Option is being exercised and all tax withholding requirements shall be satisfied by a “net exercise,” as a result of which the Participant shall receive (i) the number of shares underlying the portion of the Non-Qualified Option so being exercised, less (ii) such whole number of shares (rounded up to the nearest share) that is equal to (A) the aggregate exercise price for the portion of the Non-Qualified Option that is so being exercised plus the amount of all applicable tax withholdings associated with such exercise divided by (B) the Fair Market Value of a share of Common Stock on the date of exercise. For the avoidance of doubt, this paragraph shall not apply to any Non-Qualified Stock Options that were granted to “covered employees” (within the meaning of Section 162(m) of the Code) or to the Company’s Chief Financial Officer, in each case, that were outstanding on November 2, 2017.

Following the exercise of an Option or Stock Appreciation Right, and, in the case of an Option, the payment of the exercise price, in each case in accordance with this Section 9, and the satisfaction of any tax withholding as contemplated by Section 21, the Company shall, as soon as is reasonably practicable, deliver the Shares as to which such Option or Stock Appreciation Right was exercised to the Participant (or to the Participant’s Survivors, as the case may be). It is expressly understood that the Company may delay the delivery of the Shares in order to comply with any law or regulation that requires the Company to take any action with respect to the Shares prior to their issuance. The Shares shall, upon delivery, be fully paid, non-assessable Shares.

10. ASSIGNABILITY AND TRANSFERABILITY OF STOCK RIGHTS

By its terms, a Stock Right granted to a Participant shall not be transferable by the Participant other than by will or by the laws of descent and distribution or pursuant to a domestic relations order as defined by the Code or Title I of the Employee Retirement Income Security Act or the rules thereunder or as approved by the Administrator in its discretion and set forth in the applicable Stock Agreement; provided, however, that the Administrator shall not approve any transfer of a Stock Right for consideration. Except as provided in the preceding sentence or as otherwise permitted under a Stock Agreement, a Stock Right shall be exercisable, during the Participant’s lifetime only by such Participant (or by his or her legal representative), and shall not be assigned, pledged or hypothecated in any way (whether by operation of law or otherwise) and shall not be subject to execution, attachment or similar process. Any attempted transfer, assignment, pledge, hypothecation or other disposition of any Stock Right or of any rights granted thereunder contrary to the provisions of this Plan, or the levy of any attachment or similar process upon a Stock Right, shall be null and void.

11. EFFECT ON STOCK RIGHTS OF TERMINATION OF SERVICE

11.1 Except as otherwise provided in the applicable Stock Agreement or as otherwise provided in Section 12, all Options and Stock Appreciation Rights held by a Participant, if any, immediately prior to the Participant’s Termination of Service, to the extent then exercisable, will remain exercisable for ninety (90) days after the date of the Participant’s Termination of Service, unless otherwise provided in the applicable Stock Agreement, but in no event after the expiration of the term of the Stock Right.

11.2 The provisions of this Section, and not the provisions of Section 12, shall apply to a Participant who subsequently dies after the Termination of Service. In the event of the death of a Participant within ninety (90) days after the Participant’s Termination of Service, all Options and Stock Appreciation Rights held by the Participant, if any, immediately prior to such death, to the extent then exercisable, will remain exercisable for one (1) year after the date of the Participant’s death, but in no event after the expiration of the term of the Stock Right.

11.3 Absence from work with the Company or an Affiliate because of temporary disability or a leave of absence for any purpose, shall not, during the period of any such absence in accordance with Company policies, be deemed, by virtue of such absence alone, a Termination of Service, except as the Administrator may otherwise expressly provide or except as otherwise provided by law.

11.4 Except as required by law or as set forth in a Participant's Stock Agreement and, in the case of any Stock Right that constitutes "non-qualified deferred compensation" subject to Section 409A of the Code, only to the extent consistent with Section 409A of the Code, Stock Rights granted under the Plan shall not be affected by any change of a Participant's status within or among the Company and any Affiliates, so long as the Participant continues to be an Employee, Non-Employee Director, consultant or advisor of the Company or any Affiliate.

12. EFFECT ON STOCK RIGHTS OF DEATH OR DISABILITY WHILE AN EMPLOYEE, DIRECTOR, CONSULTANT OR ADVISOR

Except as otherwise provided in a Participant's Stock Agreement, in the event (a) of the death of a Participant while the Participant is an Employee, Non-Employee Director, consultant or advisor of the Company or of an Affiliate, or (b) that a Participant's employment or service with the Company or an Affiliate is terminated by the Company due to his or her Disability, then in the case of each of clauses (a) and (b), (i) vesting of all unvested Shares subject to outstanding Stock Rights (other than ISOs) shall be accelerated and (ii) all Non-Qualified Options and Stock Appreciation Rights held by the Participant, if any, immediately prior to such death or termination due to Disability, to the extent then exercisable, will remain exercisable for a period of one (1) year after the date of death or Termination of Service by the Company due to Disability, as applicable, of the Participant but in no event after the date of expiration of the term of the Stock Right. Notwithstanding the foregoing, clause (b) above shall not apply to any Stock Rights that were granted to "covered employees" (within the meaning of Section 162(m) of the Code) or to the Company's Chief Financial Officer, in each case, that were outstanding on November 2, 2017.

13. ANNUAL LIMITS ON STOCK RIGHTS; PERFORMANCE AWARDS

13.1 *Annual Limits.* Notwithstanding anything in this Plan to the contrary, no Participant shall be granted Stock Rights under this Plan in any calendar year for more than an aggregate of 1,000,000 Shares (subject to adjustment pursuant to Section 17 to the extent consistent with Section 162(m) of the Code). For purposes of the foregoing limitation, each Share subject to a Stock Right shall be counted as one Share of Common Stock (including each Share subject to a Full-Value Award). To the extent applicable, the foregoing provisions will be construed in a manner consistent with Section 162(m) of the Code, including, without limitation, where applicable, the rules under Section 162(m) of the Code pertaining to permissible deferrals of exempt awards.

13.2 *Performance Awards.* Stock Grants and Stock-Based Awards may be made subject to the achievement of performance goals pursuant to this Section 13.2 ("Performance Awards"). Grants of Performance Awards intended to qualify as "performance-based compensation" under Section 162(m) of the Code ("Performance-Based Compensation") shall be made only by a "Committee" comprised solely of two or more directors eligible to serve on a committee making awards intended to qualify as "performance-based compensation" under Section 162(m) of the Code. For any Performance Award that is intended to qualify as Performance-Based Compensation, the Committee shall specify that the degree of granting, vesting and/or payout of the Performance Award shall be based on the relative or absolute attainment of one or any combination of the following objective performance measures: (i) revenue targets or revenue growth targets, (ii) achievement of specified milestones in the discovery, development or regulatory approval of one or more of the Company's drug candidates, (iii) achievement of specified milestones in the commercialization of one or more of the Company's products, (iv) achievement of specified milestones in the manufacturing of one or more of the Company's products, (v) cost reduction or other expense control targets, (vi) personal management objectives, (vii) stock price targets (including, but not limited to, growth measures), (viii) total shareholder return, (ix) income per share, (x) operating efficiency measures, (xi) operating margin, (xii) gross margin, (xiii) return measures (including, but not limited to, return on assets, capital, equity or sales), (xiv) net or total revenue levels, (xv) productivity ratios, (xvi) operating income, (xvii) net operating profit, (xviii) net earnings or net income (before or after taxes), (xix) cash flow (including, but not limited to, operating cash flow, free cash flow and cash flow return on capital), (xx) earnings or operating income before interest, taxes, depreciation, amortization and/or stock-based compensation expense, (xxi) mergers, acquisitions or divestitures objectives, (xxii) market share, (xxiii) customer satisfaction, (xxiv) working capital targets, (xxv) budget objectives and (xxvi) achievement of other balance sheet or statement of operations objectives.

Each objective performance measure that is a financial measure may be determined pursuant to generally accepted accounting principles ("GAAP") or on a non-GAAP basis, as determined by the Committee. Such objective performance measures may reflect absolute entity or business unit performance or a relative comparison to the performance of a peer group of entities, an index or indices or other external measure of the selected performance criteria and may be absolute in their terms or measured against or in relationship to other companies comparably, similarly or otherwise situated. The objective performance measures and any targets with respect thereto need not be based on an increase, a positive or improved result or the avoidance of loss.

The Committee may specify that such performance measures shall be adjusted to exclude or provide for appropriate adjustment for one or more of the following items: (A) asset impairments or write-downs; (B) litigation and governmental investigation expenses and judgments, verdicts or claim settlements; (C) the effect of changes in tax law, accounting principles or other laws, regulations or provisions affecting reported results; (D) the effect of exchange rates for non-U.S. dollar denominated net sales or goals based on operating profit, earnings or income; (E) accruals

for reorganization and restructuring programs; (F) any non-GAAP adjustments as described in the Company's earnings releases or in the management's discussion and analysis of financial condition and results of operations appearing in the Company's periodic reports; (G) items of income, gain, loss or expense attributable to the operations of any business acquired by the Company or any parent or subsidiary or of any joint venture established by the Company or any parent or subsidiary; (H) costs and expenses incurred in connection with mergers and acquisitions; (I) items of income, gain, loss or expense attributable to one or more business operations divested by the Company or any parent or subsidiary or the gain or loss realized upon the sale of any such divested business or the assets thereof; or (J) the effect of any change in the outstanding shares of Common Stock effected by reason of a stock split, stock dividend, stock repurchase, reorganization, recapitalization, merger, consolidation, spin-off, combination or exchange of shares or other similar corporate change or any distributions to the Company's shareholders other than regular cash dividends.

Such performance measures: (1) may vary by Participant and may be different for different Stock Rights; (2) may be particular to a Participant or the department, branch, line of business, subsidiary or other unit in which a Participant works and may cover such performance period as may be specified by the Committee; and (3) shall be set by the Committee within the time period prescribed by, and shall otherwise comply with the requirements of, Section 162(m) of the Code.

With respect to any Performance Award that is intended to qualify as Performance-Based Compensation, the Committee may adjust downwards, but not upwards, the number of shares payable pursuant to such Performance Award, and the Committee may not waive the achievement of the applicable performance measures except in the case of the death or disability of the Participant or a change in control of the Company or as otherwise determined by the Committee.

The Committee shall have the power to impose such other restrictions on Performance Awards as it may deem necessary or appropriate to ensure that such Performance Awards satisfy all requirements for Performance-Based Compensation.

Notwithstanding anything to the contrary in the Plan, except as otherwise determined by the Administrator or as permitted by Internal Revenue Service guidance, the provisions of this 13.2 that relate to Performance-Based Compensation shall not apply to Stock Rights granted on or after May 17, 2018 (the "May Amendment Date"), provided, however, that the terms of this Section 13.2 and the terms of the Plan, as in effect on November 2, 2017, which were those same terms in effect as of immediately prior to the May Amendment Date, shall continue to govern the terms of any Performance Awards and Stock Options granted prior to the May Amendment Date. It is the intent of the Company that the amendment and restatement of the Plan on the May Amendment Date not constitute a "material modification" of the Plan or Stock Rights granted under it prior to the May Amendment Date within the meaning of Section 162(m) of the Code (and any Internal Revenue Service guidance issued thereunder) and the Plan shall be interpreted in accordance with the foregoing intent. In furtherance of the foregoing, the terms of the Plan, as amended and restated as of the May Amendment Date, shall only apply to Stock Rights granted after the May Amendment Date. Other than with respect to the second sentence of this paragraph, references to "Section 162(m) of the Code" in this Section 13 shall refer to Section 162(m) of the Code as in effect prior to December 22, 2017, including the regulations thereunder and other applicable Internal Revenue Service guidance, whether promulgated or issued before or after December 22, 2017.

14. RIGHTS AS A SHAREHOLDER

No Participant to whom a Stock Right (other than a Stock Grant) has been granted shall have rights as a shareholder with respect to any Shares covered by such Stock Right, except as to Shares actually issued under the Plan.

15. EMPLOYMENT OR OTHER RELATIONSHIP

Nothing in this Plan or any Stock Agreement shall be deemed to prevent the Company or an Affiliate from terminating the employment, consultancy or director status of a Participant, or to prevent a Participant from terminating his or her own employment, consultancy or director status or to give any Participant a right to be retained in employment or other service by the Company or any Affiliate for any period of time. The loss of existing or potential profit from a Stock Right will not constitute an element of damages in the event of a termination of employment or service for any reason, even if the termination is in violation of an obligation of the Company or any Affiliate.

16. DISSOLUTION OR LIQUIDATION OF THE COMPANY

Upon the dissolution or liquidation of the Company (other than in connection with a transaction subject to the provisions of Section 17.2), all Stock Rights granted under this Plan which as of such date have not been exercised will terminate and become null and void; provided, however, that if the rights of a Participant or a Participant's Survivors have not otherwise terminated and expired, the Participant or Participant's Survivors will have the right immediately prior to such dissolution or liquidation to exercise any Stock Right to the extent that such Stock Right is exercisable as of the date immediately prior to such dissolution or liquidation. Upon the dissolution or liquidation of the Company, any outstanding Stock Rights shall immediately terminate unless otherwise determined by the Administrator or specifically provided in the applicable Stock Agreement.

17. ADJUSTMENTS

Upon the occurrence of any of the following events, a Participant's rights with respect to any outstanding Stock Right shall be adjusted as hereinafter provided, unless otherwise specifically provided in the Stock Agreement or in any employment agreement between a Participant and the Company or an Affiliate:

17.1 *Stock Dividends and Stock Splits.* If the shares of Common Stock shall be subdivided or combined into a greater or smaller number of shares or if the Company shall issue any shares of Common Stock as a stock dividend on its outstanding Common Stock, the number of shares of Common Stock subject to or deliverable upon the vesting or exercise of a Stock Right shall be appropriately increased or decreased, and appropriate adjustments shall be made in the purchase or exercise price per Share to reflect such event. The number of Shares subject to the limitation in Section 13.1 shall also be adjusted upon the occurrence of such events.

17.2 *Consolidations or Mergers.* In the event of a consolidation or merger in which the Company is not the surviving corporation or which results in the acquisition of substantially all the Company's outstanding stock by a single person or entity or by a group of persons and/or entities acting in concert, or in the event of the sale or transfer of substantially all the Company's assets (any of the foregoing, an "Acquisition"), all then outstanding Stock Rights (excluding any Shares subject to Stock Grants as to which all Company repurchase rights shall have lapsed) shall terminate unless assumed pursuant to clause (i) below; provided that either (i) the Administrator shall provide for the surviving or acquiring entity or an affiliate thereof to assume the outstanding Stock Rights or grant replacement Stock Rights in lieu thereof, any such replacement to be upon an equitable basis as determined by the Administrator, or (ii) if there is no such assumption or substitution, all outstanding Stock Rights shall become immediately and fully exercisable and all Company repurchase rights with respect to Stock Rights shall lapse, in each case immediately prior to the Acquisition, notwithstanding any restrictions or vesting conditions set forth therein.

17.3 *Recapitalization or Reorganization.* In the event of a recapitalization or reorganization of the Company (other than a transaction described in Section 17.2 above) pursuant to which securities of the Company or of another corporation are issued with respect to the outstanding shares of Common Stock, a Participant upon exercising a Stock Right shall be entitled to receive for the purchase price paid upon such exercise the securities he or she would have received if he or she had exercised such Stock Right immediately prior to such recapitalization or reorganization.

17.4 *Adjustments to Shares, Stock Grants and Stock-Based Awards.* Upon the happening of any of the events described in Sections 17.1, 17.2 or 17.3, or other change in the Company's capital structure that constitutes an equity restructuring within the meaning of the Accounting Rules, the maximum number of Shares specified in Section 3, the number of Shares subject to the limits in Section 13.1, any exercise price per Share of any Stock Right, any outstanding Stock-Based Award and the Shares subject to any Stock Grant, vested or unvested, shall be appropriately adjusted by the Administrator to reflect such events. The Administrator may also make adjustments of the type described above to take into account distributions to stockholders other than those provided for in Sections 17.1, 17.2 or 17.3, or any other event, if the Administrator determines that adjustments are appropriate to avoid distortion in the operation of the Plan. The Administrator shall determine the specific adjustments to be made under this Section 17.4. References in the Plan to Shares will be construed to include any stock or securities resulting from an adjustment pursuant to this Section 17.4.

17.5 *Modification of ISOs.* Notwithstanding the foregoing, any adjustments made pursuant to Section 17.1, 17.2 or 17.3 with respect to ISOs shall be made only after the Administrator determines whether such adjustments would constitute a "modification" of such ISOs (as that term is defined in Section 424(h) of the Code) or would cause any adverse tax consequences for the holders of such ISOs. If the Administrator determines that such adjustments made with respect to ISOs would constitute a modification of such ISOs, it may refrain from making such adjustments, unless the holder of an ISO specifically consents in writing to such adjustment be made and such writing indicates that the holder has full knowledge of the consequences of such "modification" on his or her income tax treatment with respect to the ISO.

18. ISSUANCES OF SECURITIES

Except as expressly provided herein, no issuance by the Company of shares of stock of any class, or securities convertible into shares of stock of any class, shall affect, and no adjustment by reason thereof shall be made with respect to, the number or price of Shares subject to Stock Rights. Except as expressly provided herein, no adjustments shall be made for dividends paid in cash or in property (including without limitation, securities) of the Company.

19. FRACTIONAL SHARES

No fractional share shall be issued under the Plan and the person exercising any Stock Right shall receive from the Company cash in lieu of any such fractional share equal to the Fair Market Value thereof.

20. DIVIDEND EQUIVALENTS

The Administrator may provide for the payment of amounts (on terms and subject to conditions established by the Administrator, including providing for the reinvestment of such amounts in the form of additional Stock Rights) in lieu of cash dividends or other cash distributions with respect to Common Stock subject to a Stock Right whether or not the holder of such Stock Right is otherwise entitled to share in the actual dividend or distribution in respect of such Stock Right; provided, however, that notwithstanding anything to the contrary in the Plan (a) any dividends or dividend equivalents relating to a Stock Right (other than an Option or Stock Appreciation Right) that, at the dividend payment date, remains subject to a risk of forfeiture (whether service-based or performance-based) shall be subject to the same risk of forfeiture as applies to the underlying Stock Right and (b) except as contemplated by Section 17, no dividends or dividend equivalents shall be payable with respect to Options or Stock Appreciation Rights unless and until such Options or Stock Appreciation Rights have vested and been exercised in accordance with their terms.

21. WITHHOLDING

The delivery, vesting and retention of Shares, cash or other property under a Stock Right are conditioned upon full satisfaction by the Participant of all tax withholding requirements with respect to the Stock Right. The Administrator shall prescribe such rules for the withholding of taxes with respect to any Stock Right as it deems necessary. The Administrator may withhold from the Participant's compensation or require that the Participant advance cash to the Company or an Affiliate the amount of such withholding and may hold back Shares from a Stock Right or permit a Participant to tender previously owned Shares in satisfaction of tax withholding requirements (but not in excess of the maximum withholding amount consistent with the award being subject to equity accounting treatment under the Accounting Rules). For purposes hereof, the Fair Market Value of any shares withheld for purposes of payroll withholding shall be determined in the manner provided in Section 1 above, as of the most recent practicable date prior to the date of grant, vesting, exercise or the date of a Disqualifying Disposition. If the Fair Market Value of the shares withheld is less than the amount of payroll withholdings required, the Participant may be required to pay the difference in cash to the Company or the Affiliate employer.

22. NOTICE TO COMPANY OF DISQUALIFYING DISPOSITION

Each Employee who receives an ISO must agree to notify the Company in writing immediately after the Employee makes a "Disqualifying Disposition" of any Shares acquired pursuant to the exercise of an ISO. A Disqualifying Disposition is any disposition (as defined in Section 424(c) of the Code) of such Shares before the later of (a) two years from the date the Employee was granted the ISO, or (b) one year after the date the Employee acquired Shares by exercising the ISO. If the Employee has died before such Shares are sold, the notice provisions of this Section 22 shall not apply.

23. EFFECTIVE DATE; TERMINATION OF THE PLAN

This Plan was amended and restated by the Board on April 13, 2017 and April 2, 2018, in each case subject to the approval of the Plan by the shareholders of the Company, and was further amended and restated on October 16, 2018. The Plan, as amended and restated hereby, shall be effective as of June 5, 2019. The Plan will terminate on April 12, 2027. The Plan also may be terminated at an earlier date by vote of the Board of Directors. Termination of this Plan will not affect any Stock Rights granted or Stock Agreements executed prior to the effective date of such termination.

24. AMENDMENT OF THE PLAN; AMENDMENT OF STOCK RIGHTS

The Plan may be amended by the Board of Directors or the Administrator, including, without limitation, to the extent necessary to qualify any or all outstanding Stock Rights granted under the Plan or Stock Rights to be granted under the Plan for favorable federal income tax treatment (including deferral of taxation upon exercise) as may be afforded incentive stock options under Section 422 of the Code, and to the extent necessary to qualify the shares issuable upon exercise of any outstanding Stock Rights granted, or Stock Rights to be granted, under the Plan for listing on any national securities exchange or quotation in any national automated quotation system of securities dealers. Any amendments to the Plan will be conditioned upon stockholder approval only to the extent, if any, such approval is required by law (including the Code) or applicable stock exchange requirements, as determined by the Administrator. No modification or amendment of the Plan shall adversely and materially affect a Participant's rights under a Stock Right previously granted to the Participant, without such Participant's consent.

In its discretion, the Administrator may amend any term or condition of any outstanding Stock Right, provided: (i) such term or condition is not prohibited by the Plan; (ii) if the amendment is materially adverse to the Participant, such amendment shall be made only with the consent of the Participant or the Participant's Survivors, as the case may be; and (iii) any such amendment of any ISO shall be made only after the

Administrator determines whether such amendment would constitute a “modification” of any Stock Right which is an ISO (as that term is defined in Section 424(h) of the Code) or would cause any adverse tax consequences for the holder of such ISO (in which case, the Participant’s or Participant’s Survivors’ consent to such amendment shall be required). Notwithstanding the foregoing, unless such action is approved by the Company’s shareholders, the Company may not (except for adjustments permitted under Section 17 of this Plan) (1) amend any outstanding Option or Stock Appreciation Right granted under the Plan to provide an exercise price per share that is lower than the then-current exercise price per share of such outstanding Option or Stock Appreciation Right; (2) cancel any outstanding Option or Stock Appreciation Right (whether or not granted under the Plan) and grant in substitution therefor new Stock Rights under the Plan covering the same or a different number of shares of Common Stock and having an exercise price per share lower than the then-current exercise price per share of the cancelled option or Stock Appreciation Right; or (3) cancel in exchange for a cash payment any outstanding Option or Stock Appreciation Right with an exercise price per share above the then-current Fair Market Value.

25. RECOVERY OF COMPENSATION

The Administrator may provide in any case that outstanding Stock Rights (whether or not vested or exercisable) and the proceeds from the exercise or disposition of Stock Rights or Common Stock acquired under Stock Rights will be subject to forfeiture and disgorgement to the Company, with interest and other related earnings, if the Participant to whom the Stock Right was granted violates (i) a non-competition, non-solicitation, confidentiality or other restrictive covenant by which he or she is bound, or (ii) any Company policy applicable to the Participant that provides for forfeiture or disgorgement with respect to incentive compensation that includes Stock Rights under the Plan. In addition, the Administrator may require forfeiture and disgorgement to the Company of outstanding Stock Rights and the proceeds from the exercise or disposition of Stock Rights or Common Stock acquired under Stock Rights, with interest and other related earnings, to the extent required by law or applicable stock exchange listing standards, including, without limitation, Section 10D of the Exchange Act, and any applicable Company policy. Each Participant, by accepting or being deemed to have accepted a Stock Right under the Plan, agrees to cooperate fully with the Administrator, and to cause any and all permitted transferees of the Participant to cooperate fully with the Administrator, to effectuate any forfeiture or disgorgement required hereunder. Neither the Administrator nor the Company nor any other person, other than the Participant and his or her permitted transferees, if any, will be responsible for any adverse tax or other consequences to a Participant or his or her permitted transferees, if any, that may arise in connection with this Section 25.

26. COMPLIANCE WITH SECTION 409A OF THE CODE

Without limiting the generality of Section 4 hereof, each Stock Right will contain such terms as the Administrator determines and will be construed and administered, such that the Stock Right either qualifies for an exemption from the requirements of Section 409A of the Code or satisfies such requirements.

Notwithstanding Section 24 hereof or any other provision of this Plan or any Stock Agreement to the contrary, the Administrator may unilaterally amend, modify or terminate the Plan or any outstanding Stock Right, including but not limited to changing the form of the Stock Right, if the Administrator determines that such amendment, modification or termination is necessary or advisable to avoid the imposition of an additional tax, interest or penalty under Section 409A of the Code. To the extent that a provision of this Plan is amended to provide for the accelerated payment or settlement of a Stock Right, no such amendment will be given effect if it would result in the imposition of an additional tax, interest or penalty under Section 409A of the Code.

If a Participant is deemed on the date of the Participant’s Termination of Service to be a “specified employee” within the meaning of that term under Section 409A(a)(2)(B) of the Code, then, with regard to any payment that is considered nonqualified deferred compensation under Section 409A of the Code, to the extent applicable, payable on account of a “separation from service”, such payment will be made or provided on the date that is the earlier of (i) the expiration of the six-month period measured from the date of such “separation from service” and (ii) the date of the Participant’s death (the “Delay Period”). Upon the expiration of the Delay Period, all payments delayed pursuant to this Section 26 (whether they would have otherwise been payable in a single lump sum or in installments in the absence of such delay) will be paid on the first business day following the expiration of the Delay Period in a lump sum and any remaining payments due under the Stock Right will be paid in accordance with the normal payment dates specified for them in the applicable Stock Agreement.

For purposes of Section 409A of the Code, each payment made under this Plan will be treated as a separate payment.

With regard to any payment considered to be nonqualified deferred compensation under Section 409A of the Code, to the extent applicable, that is payable upon a change in control of the Company or other similar event, to avoid the imposition of an additional tax, interest or penalty under Section 409A of the Code, no amount will be payable unless such change in control constitutes a “change in control event” within the meaning of Section 1.409A-3(i)(5) of the Treasury Regulations.

27. AUTHORIZATION OF SUB-PLANS

The Board of Directors may from time to time establish one or more sub-plans under the Plan for purposes of satisfying applicable securities, tax or other laws of various jurisdictions. The Board of Directors shall establish such sub-plans by adopting supplements to the Plan containing (i) such limitations on the Board of Director's discretion under the Plan as the Board of Directors deems necessary or desirable or (ii) such additional terms and conditions not otherwise inconsistent with the Plan as the Board of Directors shall deem necessary or desirable. All supplements adopted by the Board of Directors shall be deemed to be part of the Plan, but each supplement shall apply only to Participants within the affected jurisdiction and the Company shall not be required to provide copies of any supplement to Participants in any jurisdiction that is not the subject of such supplement.

28. GOVERNING LAW

This Plan, Stock Rights under the Plan and all claims or disputes arising out of or based upon the Plan or Stock Rights under the Plan or relating to the subject matter hereof or thereof shall be construed and enforced in accordance with the laws of The Commonwealth of Massachusetts without giving effect to any choice or conflict of laws provision or rule that would cause the application of the domestic substantive laws of any other jurisdiction.

By accepting or being deemed to have accepted a Stock Right under the Plan, each Participant will be deemed to (a) have submitted irrevocably and unconditionally to the jurisdiction of the federal and state courts located within the geographic boundaries of the United States District Court for the District of Massachusetts for the purpose of any suit, action or other proceeding arising out of or based upon the Plan or any Stock Right; (b) agree not to commence any suit, action or other proceeding arising out of or based upon the Plan or a Stock Right, except in the federal and state courts located within the geographic boundaries of the United States District Court for the District of Massachusetts; and (c) waive, and agree not to assert, by way of motion as a defense or otherwise, in any such suit, action or proceeding, any claim that he or she is not subject personally to the jurisdiction of the above-named courts that his or her property is exempt or immune from attachment or execution, that the suit, action or proceeding is brought in an inconvenient forum, that the venue of the suit, action or proceeding is improper or that the Plan or a Stock Right or the subject matter thereof may not be enforced in or by such court.

By accepting or being deemed to have accepted a Stock Right under the Plan, to the maximum extent permitted by applicable law, each Participant waives any right to a trial by jury in any action, proceeding or counterclaim concerning any rights under the Plan and any Stock Right, or under any amendment, waiver, consent, instrument, document or other agreement delivered or which in the future may be delivered in connection therewith, and agrees that any such action, proceedings or counterclaim will be tried before a court and not before a jury. By accepting or being deemed to have accepted a Stock Right under the Plan, each Participant certifies that no officer, representative, or attorney of the Company has represented, expressly or otherwise, that the Company would not, in the event of any action, proceeding or counterclaim, seek to enforce the foregoing waivers. Notwithstanding anything to the contrary in the Plan, nothing herein is to be construed as limiting the ability of the Company and a Participant to agree to submit disputes arising under the terms of the Plan or any Stock Right made hereunder to binding arbitration or as limiting the ability of the Company to require any eligible individual to agree to submit such disputes to binding arbitration as a condition of receiving a Stock Right hereunder.

Appendix B Vertex Pharmaceuticals Incorporated Employee Stock Purchase Plan (as amended and restated as of June 5, 2019)

ARTICLE I

Purpose and Definitions

Section 1.1. Purpose. The purpose of the Vertex Pharmaceuticals Incorporated Employee Stock Purchase Plan is to provide eligible employees with an opportunity to purchase shares of Common Stock in the Company through payroll deductions, thereby encouraging employees to share in the economic growth and success of the Company through stock ownership.

Section 1.2. Definitions. Whenever used in the Plan, unless the context clearly indicates otherwise, the following terms shall have the following meanings:

- (a) "BOARD OF DIRECTORS" means the Board of Directors of the Company.
- (b) "CODE" means the Internal Revenue Code of 1986, as the same may be amended from time to time, and references thereto shall include the valid Treasury regulations issued thereunder.
- (c) "COMMITTEE" means the Management Development and Compensation Committee of the Board of Directors or such other committee of the Board of Directors designated by the Board of Directors to administer the Company's equity compensation plans.
- (d) "COMMON STOCK" means shares of the \$.01 par value common stock of the Company and any other stock or securities resulting from the adjustment thereof or substitution therefor as described in Section 3.4.
- (e) "COMPANY" means Vertex Pharmaceuticals Incorporated or any successor by merger, purchase, or otherwise.
- (f) "COMPENSATION" means the cash compensation received by an Employee for services, including pre-tax employee compensation made to the Company's 401(k) savings plan, but not including overtime or bonuses.
- (g) "EFFECTIVE DATE" means July 1, 1992.
- (h) "ELECTION" means an election by a Participant to terminate his or her participation in an Offering Period following the purchase of shares of Common Stock in accordance with Article V on the first Purchase Date of such Offering Period, which election shall be made within such Offering Period and on or prior to such first Purchase Date and shall be on a form furnished by the Company for such purpose and shall be made by having such Participant complete, sign and file such form with the Company in the manner prescribed by the Company; provided that if the Fair Market Value of the Common Stock on the first day of the applicable Offering Period is greater than the Fair Market Value of the Common Stock on the first Purchase Date of such Offering Period each Participant in such Offering Period shall automatically (i) be deemed to have completed, signed and filed an Election and (ii) be enrolled in the Offering Period commencing on the Offering Date immediately following such first Purchase Date, with the Participant's payroll deductions for such Offering Period determined by reference to the last payroll deduction authorization properly submitted by the Participant to the Company in accordance with the Plan.
- (i) "EMPLOYEE" means any person who receives a regular stated compensation from the Company or a Subsidiary other than a pension, severance pay, retainer, or fee under contract.
- (j) "FAIR MARKET VALUE" of a share of Common Stock on a particular date shall be the average of the highest and lowest quoted selling prices on such date (the "valuation date") on the securities market where the Common Stock of the Company is traded, or if there were no sales on the valuation date, on the immediately preceding date within a reasonable period (as determined in the sole discretion of the Committee) on which there were sales. In the event that there were no sales in such a market within a reasonable period, the fair market value shall be as determined in good faith by the Committee in its sole discretion. The Fair Market Value as determined in this paragraph shall be rounded down to the next lower whole cent if the foregoing calculation results in fractional cents.
- (k) "OFFERING" means the offering of shares of Common Stock to Participants pursuant to this Plan.
- (l) "OFFERING DATE" means each May 15 and November 15. If any such date shall fall other than on a business day, then the Offering Date shall be the next succeeding business day.
- (m) "OFFERING PERIOD" means either (i) the period from an Offering Date through the second Purchase Date following such Offering Date or (ii) if a Participant validly exercises (or is deemed to validly exercise) an Election, the period from an Offering Date through the first Purchase Date following such Offering Date.
- (n) "PARTICIPANT" means an Employee who has elected to participate in the Plan in accordance with and subject to the terms of the Plan and any procedures established by the Committee.
- (o) "PURCHASE DATE" means each May 14 and November 14.
- (p) "PLAN" means the Vertex Pharmaceuticals Incorporated Employee Stock Purchase Plan, an "employee stock purchase plan" within the meaning of Section 423(b) of the Code, together with any and all amendments thereto.

- (q) "STOCK PURCHASE ACCOUNT," with respect to a Participant, means the account established on the books and records of the Company or a Subsidiary for such Participant representing the payroll deductions credited to such account in accordance with the provisions of the Plan.
- (r) "SUBSIDIARY" means any corporation, fifty percent (50%) or more of the total combined voting power of all classes of stock of which is beneficially owned, directly or indirectly, by the Company.

ARTICLE II

Participation

Section 2.1. Participation Requirements.

- (a) COMMENCEMENT OF PARTICIPATION. Subject to Section 2.2 and Section 3.2(b), each person who becomes an Employee after the Effective Date may elect to become a Participant in the Plan, in accordance with and subject to the terms of the Plan and any procedures established by the Committee, on any Offering Date following the date on which such person becomes an Employee.
- (b) ELIGIBILITY OF FORMER PARTICIPANTS. If a person terminates employment with the Company after becoming a Participant and subsequently resumes being an Employee of the Company, such person will again become eligible to participate on the Offering Date next following the date such person resumed being an Employee of the Company.

Section 2.2. Exclusions. Notwithstanding any provision of the Plan to the contrary, in no event shall the following persons be eligible to participate in the Plan:

- (a) Any Employee whose customary employment is twenty (20) hours or less per week;
- (b) Any Employee whose customary employment is for not more than five (5) months in any calendar year; or
- (c) Any Employee who, immediately after the beginning of an Offering Period, owns (or under Section 423(b)(3) of the Code would be deemed to own) stock possessing five percent (5%) or more of the total combined voting power or value of all classes of stock of the Company or of any Subsidiary.

ARTICLE III

Offering of Common Stock

Section 3.1. Reservation of Common Stock. The Board of Directors shall reserve 1,748,660 shares of Common Stock for issuance under the Plan after March 17, 2004, subject to adjustment in accordance with Section 3.4, provided that no more than 248,660 of such shares shall be issued prior to May 15, 2004. On May 13, 2008, the Board of Directors shall reserve an additional 2,000,000 shares of Common Stock for issuance under the Plan. On May 16, 2012, the Board of Directors shall reserve an additional 2,500,000 shares of Common Stock for issuance under the Plan. On June 5, 2019, the Board of Directors shall reserve an additional 2,000,000 shares of Common Stock for issuance under the Plan.

Section 3.2. Offering of Common Stock.

- (a) General. Subject to Sections 3.2(b) and 3.2(c), each Participant in the Plan on an Offering Date shall be entitled to purchase shares of Common Stock on each Purchase Date within the Offering Period that begins with such Offering Date with the amounts deducted from such Participant's Compensation during such Offering Period pursuant to Article IV, provided, however, that a Participant shall not participate in more than one Offering Period simultaneously. The purchase price for such shares of Common Stock shall be determined under Section 3.3.
- (b) Limitations. Notwithstanding Section 3.2(a), no Participant may purchase shares of Common Stock under the Plan and under all other Code Section 423 employee stock purchase plans of the Company and its Subsidiaries, if any, at a rate in excess of \$25,000 in fair market value of such shares (measured as of the relevant Offering Date) for each calendar year during which rights to purchase shares of Common Stock under the Plan are outstanding at any time. This paragraph is intended to be consistent with the limitation of Code section 423(b) (8) and shall be interpreted accordingly.
- (c) Maximum. Notwithstanding Section 3.2(a), and subject to adjustment pursuant to Section 3.4, the maximum aggregate number of shares of Common Stock that may be purchased by any Participant on any Purchase Date is 2,500 shares.

Section 3.3. Determination of Purchase Price for Offered Common Stock. The purchase price per share of the shares of Common Stock to be acquired by a Participant on a Purchase Date pursuant to an Offering shall be equal to eighty-five percent (85%) of the lesser of:

- (a) the Fair Market Value of a share of Common Stock on the Offering Date for such Offering Period; or
- (b) the Fair Market Value of a share of Common Stock on such Purchase Date;

provided, however, in no event shall the purchase price be less than the par value of a share of Common Stock.

Section 3.4. Effect of Certain Transactions. The number of shares of Common Stock reserved for the Plan pursuant to Section 3.1, the maximum number of shares of Common Stock offered pursuant to Sections 3.2(b) and 3.2(c), and the determination under Section 3.3 of the purchase price per share of the shares of Common Stock offered to Participants pursuant to an Offering shall be appropriately adjusted to reflect any increase or decrease in the number of issued shares of Common Stock resulting from a stock split, a consolidation of shares, the payment of a stock dividend, or any other capital adjustment affecting the number of issued shares of Common Stock. In the event that the outstanding shares of Common Stock shall be changed into or exchanged for a different number or kind of shares of stock or other securities of the Company or another corporation, whether through reorganization, recapitalization, merger, consolidation, or otherwise, then there shall be substituted for each share of Common Stock reserved for issuance under the Plan but not yet purchased by Participants, the number and kind of shares of stock or other securities into which each outstanding share of Common Stock shall be so changed or for which each such share shall be exchanged. In the event of (i) a consolidation, merger or similar transaction or series of related transactions, including a sale or other disposition of stock, in which the Company is not the surviving corporation or which results in the acquisition of all or substantially all of the then-outstanding shares of Common Stock by a single person or entity or by a group of persons and/or entities acting in concert; (ii) sale or transfer of all or substantially all of the Company's assets; (iii) dissolution or liquidation of the Company; or (iv) a "change in control event" as that term is defined in the regulations under Section 409A of the Code (any of the foregoing events in (i)-(iv), a "Corporate Transaction"), the Committee may, in its discretion, (i) if the Company is merged with or acquired by another corporation, provide that each outstanding entitlement to purchase shares of Common Stock held by a Participant pursuant to Section 3.2 (each, an "Option") will be assumed or exchanged for a substitute Option granted by the acquiror or successor corporation or by a parent or subsidiary of the acquiror or successor corporation, (ii) cancel each outstanding Option and return the balances in Participants' Stock Purchase Accounts to the Participants, or (iii) pursuant to Article VII, provide that the Purchase Date for the Offering Period of the Option will occur on or before the date of the proposed Corporate Transaction.

ARTICLE IV

Payroll Deductions

Section 4.1. Payroll Deduction Elections. Any Employee eligible to participate in the Plan may become a Participant and elect to have the Company deduct from the Compensation payable to such Participant during each Offering Period any amount between one percent (1%) and fifteen percent (15%) of such Participant's Compensation, in whole multiples of one percent (1%). Such election shall be made during the thirty day period preceding the Offering Period to which it first relates. Such election shall become effective as of the first day of such Participant's first pay period that begins on or after the first day of such Offering Period and shall remain effective for each successive pay period and for each subsequent Offering until changed or terminated pursuant to this Article IV. The percentage deduction specified by the Participant will be deducted from each payment of Compensation made to the Participant.

Section 4.2. Election to Increase or Decrease Payroll Deductions. Subject to Section 4.4, a Participant who has a payroll deduction election in effect under Section 4.1 may prospectively increase or decrease, during an Offering Period, the percentage amount of the deductions being made by the Company from such Participant's Compensation (including a decrease to zero) by delivering to the Company written direction to make such change. Such change shall become effective as soon as practicable after the Company's receipt of such written direction and shall remain in effect until changed or terminated pursuant to this Article IV. A Participant shall be permitted to increase or decrease the percentage amount of the deductions being made from such Participant's Compensation only once during each of the portions of an Offering Period that ends on a Purchase Date; provided, however, a Participant may terminate the deductions being made from such Participant's Compensation at any time during such Offering Period. If a Participant terminates deductions, such Participant cannot resume deductions during that Offering Period.

A Participant who makes a hardship withdrawal from a retirement savings plan sponsored or maintained by the Company or its Subsidiaries qualifying under Code section 401(k) (a "401(k) Plan") shall be deemed to have terminated his or her payroll deduction election as of the date of such hardship withdrawal, shall cease to be a Participant as of such date, and the entire amount remaining to the credit of such Participant in such Participant's Stock Purchase Account shall be refunded to such Participant, without interest, as soon as administratively practicable thereafter. To the extent the Company relies on the safe harbor provided by Section 1.401(k)-1(d)(3)(iv)(E)(2) of the Treasury Regulations, a Participant who has made a hardship withdrawal from a 401(k) Plan shall not be permitted to participate in the Plan until the first Offering Period that begins at least six (6) months after the date of the hardship withdrawal.

Section 4.3. Termination of Election Upon Termination of Employment. The termination of employment of a Participant for any reason shall automatically terminate the Participant's participation in the Plan and the entire amount remaining to the credit of such Participant in such Participant's Stock Purchase Account shall be refunded to such Participant, without interest, as soon as administratively practicable thereafter.

Section 4.4. Form of Elections. Except as otherwise permitted by the Company, any election by a Participant regarding participation in or withdrawal from the Plan or deductions from Compensation pursuant to this Article IV shall be on a form furnished by the Company for such purpose and shall be made by having such Participant file such form with the Company in the time and manner prescribed from time to time by the Company.

Section 4.5. Taxes. Payroll deductions shall be made on an after-tax basis. The Company shall have the right, as a condition of exercise, to make such provision as it deems necessary to satisfy its obligations to withhold federal, state and local income or other taxes incurred by reason of the purchase or disposition of shares of Common Stock under the Plan. The Company in its discretion may, to the extent permitted by law, satisfy its withholding obligations by deduction from any payment of any kind due to the Participant or by withholding shares of Common Stock purchased under the Plan (but not in excess of the minimum statutory amounts or such greater amounts that, in the discretion of the Company, would not result in adverse accounting consequences to the Company). By electing to participate in the Plan, each Participant agrees to provide such information about any transfer of any shares of Common Stock acquired under the Plan as may be requested by the Company or any Subsidiary in order to assist it in complying with applicable tax laws.

ARTICLE V

Stock Purchase Accounts and Purchase of Common Stock

Section 5.1. Stock Purchase Accounts. A Stock Purchase Account shall be established and maintained on the books and records of the Company for each Participant. Amounts deducted from a Participant's Compensation pursuant to Article IV shall be credited to such Participant's Stock Purchase Account. No interest or other increment shall accrue or be payable to any Participant with respect to any amounts credited to such Stock Purchase Accounts. All amounts credited to such Stock Purchase Accounts shall be withdrawn, paid, or applied toward the purchase of shares of Common Stock pursuant to the provisions of this Article V.

Section 5.2. Purchase of Common Stock.

- (a) General. As of each Purchase Date, the amount to the credit of a Participant in such Participant's Stock Purchase Account shall be used to purchase from the Company on such Participant's behalf the largest number of whole shares of Common Stock which can be purchased at the price determined under Section 3.3 with the amount then credited to such Participant's Stock Purchase Account, subject to the limitations set forth in Article III on the maximum number of shares of Common Stock such Participant may purchase. As of such date, such Participant's Stock Purchase Account shall be charged with the aggregate purchase price of the shares of Common Stock purchased on such Participant's behalf. No brokerage or other fees are to be charged upon a purchase. Stock transfer taxes, if any, shall be paid by the Company. The remaining balance attributable to any fractional shares, if any, credited to such Participant's Stock Purchase Account shall be carried forward and used to purchase shares of Common Stock on the next succeeding Purchase Date; provided that any excess balance remaining in a Participant's Stock Purchase Account after the application of the limitations or maximums in Section 3.2 shall be refunded to the Participant without interest as soon as is administratively practicable.
- (b) Issuance of Common Stock. The shares of Common Stock purchased for a Participant as of a Purchase Date shall be deemed to have been issued by the Company for all purposes as of the close of business on such date. Prior to such date, none of the rights and privileges of a stockholder of the Company shall exist with respect to such shares of Common Stock. As soon as practical, the Company shall deliver to the Participant's account maintained by the broker engaged by the Company to administer the Company equity program, the number of shares of Common Stock purchased for such Participant and the aggregate number of shares of Common Stock held on behalf of such Participant under the Plan.
- (c) Insufficient Common Stock Available. If, as of any Purchase Date, the aggregate amounts in Stock Purchase Accounts available for the purchase of shares of Common Stock pursuant to Section 5.2(a) would purchase a number of shares of Common Stock in excess of the number of shares of Common Stock then available for purchase under Section 3.1 of the Plan, (i) the number of shares of Common Stock which would otherwise be purchased for each Participant on such date shall be reduced proportionately to the extent necessary to eliminate such excess, (ii) the remaining balance to the credit of each Participant in each such Participant's Stock Purchase Accounts shall be refunded to each such Participant without interest as soon as administratively practicable, and (iii) the Plan shall terminate automatically upon the refund of the remaining balance in such Stock Purchase Accounts.

Section 5.3. Withdrawal from Plan Prior to Purchase of Common Stock. In the event (i) a Participant elects in writing for any reason to withdraw from the Plan during an Offering Period or (ii) a Participant's employment with the Company terminates for any reason prior to the end of an Offering Period, the entire amount remaining to the credit of such Participant in such Participant's Stock Purchase Account shall be refunded to such Participant (or, if such Participant is deceased, to such Participant's beneficiary) without interest as soon as administratively practicable after such withdrawal or termination of employment (as the case may be).

ARTICLE VI

Committee

Section 6.1. Powers of the Committee. The Committee shall administer the Plan. The Committee shall have all powers necessary to enable it to carry out its duties under the Plan properly. Not in limitation of the foregoing, the Committee shall have the authority to determine eligibility under the Plan, to designate Subsidiaries as eligible to participate in the Plan, to interpret the Plan, to prescribe forms, rules and procedures under the Plan, to adopt, amend, rescind, administer, and interpret such forms, rules and procedures and otherwise to do all things necessary or advisable to carry out the terms of the Plan. To the extent permitted by applicable law, the Committee in its discretion may delegate any or all of its powers under the Plan to one or more officers or employees of the Company. The decision of the Committee upon all matters within the scope of its authority shall be final and conclusive on all persons, except to the extent otherwise provided by law.

Section 6.2. Indemnification of the Committee. The Company agrees to indemnify and hold harmless the members of the Committee against any liabilities, loss, costs, or damage that they may incur in acting as such members and to assume the defense of any and allocations, suits, or proceedings against the members of the Committee, to the extent permitted by applicable law.

ARTICLE VII

Amendment and Termination

Section 7.1. Amendment of the Plan. The Company expressly reserves the right, at any time and from time to time, to amend in whole or in part any of the terms and provisions of the Plan; provided, however, no amendment may without the approval of the shareholders of the Company increase the number of shares of Common Stock reserved under the Plan.

Section 7.2. Termination of Plan. The Company expressly reserves the right, at any time and for whatever reason it may deem appropriate, to suspend or terminate the Plan. The Plan shall continue in effect until terminated pursuant to (i) the preceding sentence or (ii) Section 5.2(c). Upon any termination of the Plan, the entire amount credited to the Stock Purchase Account of each Participant shall be refunded to each such Participant without interest as soon as is administratively practicable.

Section 7.3. Procedure for Amendment or Termination. Any amendment to the Plan or termination of the Plan may be retroactive to the extent not prohibited by applicable law. Any amendment to the Plan or termination of the Plan shall be made by the Company by resolution of the Board of Directors (subject to Section 7.1) and shall not require the approval or consent of any Participant or beneficiary in order to be effective.

ARTICLE VIII

Miscellaneous

Section 8.1. Transferability of Rights. Rights under the Plan are exercisable during a Participant's lifetime only by the Participant and such rights may not be sold, pledged, assigned or transferred in any manner.

Section 8.2. No Employment Rights. Participation in the Plan shall not give any employee of the Company or any Subsidiary any right to remain employed or, upon termination of employment, any right or interest in the Plan, except as expressly provided herein.

Section 8.3. Compliance with Law. No shares of Common Stock shall be issued under the Plan prior to compliance by the Company to the satisfaction of its counsel with any applicable laws.

Section 8.4. Construction. Article, Section, and paragraph headings have been inserted in the Plan for convenience of reference only and are to be ignored in any construction of the provisions hereof. If any provision of the Plan shall be invalid or unenforceable, the remaining provisions shall nevertheless be valid, enforceable, and fully effective. It is the intent that the Plan shall at all times constitute an "employee stock purchase plan" within the meaning of Section 423(b) of the Code, and the Plan shall be construed, and interpreted to remain such. The Plan shall be construed, administered, regulated, and governed by the laws of the United States to the extent applicable, and to the extent such laws are not applicable, by the laws of The Commonwealth of Massachusetts. Without limiting the foregoing, all Participants for an Offering Period shall have the same rights and privileges with respect to their rights to acquire shares of Common Stock under the Plan for such period, subject to the express terms hereof.

Appendix C Non-GAAP Financial Measures

In this proxy, our financial results and financial guidance are provided in accordance with accounting principles generally accepted in the United States (GAAP) and using certain non-GAAP financial measures. In particular, we include non-GAAP net income, which excludes (i) stock-based compensation expense, (ii) revenues and expenses related to business development transactions including collaboration agreements and asset acquisitions, (iii) revenues and expenses related to consolidated variable interest entities, including asset impairment charges and the effects of the deconsolidation of variable interest entities in 2017 and 2018 and (iv) other adjustments, including gains or losses related to the fair value of the company's strategic investments. The company's non-GAAP net income also exclude from its provision for or benefit from income taxes (i) the estimated tax impact related to its non-GAAP adjustments to pre-tax net income described above as well as (ii) non-operating tax adjustments, which are not associated with our normal, recurring operations and include the release of our valuation allowance on the majority of our net operating losses and other deferred tax assets in the fourth quarter of 2018. These results are provided as a complement to results provided in accordance with GAAP because management believes these non-GAAP financial measures help indicate underlying trends in our business, are important in comparing current results with prior period results and provide additional information regarding our financial position. Management also uses these non-GAAP financial measures to establish budgets and operational goals that are communicated internally and externally and to manage the company's business and to evaluate its performance. The company adjusts, where appropriate, for both revenues and expenses in order to reflect the company's operations. A reconciliation of the GAAP net income to non-GAAP net income is included below.

	Twelve Months Ended December 31,		
	2018	2017	2016
GAAP net income (loss) attributable to Vertex	\$ 2,096,896	\$ 263,484	\$ (112,052)
Stock-based compensation expense	325,047	290,736	237,705
Collaborative and transaction revenues and expenses	134,447	(76,607)	87,850
Other adjustments	2,005	16,947	(2,306)
Total non-GAAP adjustments to pre-tax net income attributable to Vertex	461,499	231,076	323,249
Non-operating tax adjustments	(1,499,588)	—	—
NON-GAAP NET INCOME ATTRIBUTABLE TO VERTEX	\$ 1,058,807	\$ 494,560	\$ 211,197



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▼ IF VOTING BY MAIL, SIGN, DETACH AND RETURN THE BOTTOM PORTION IN THE ENCLOSED ENVELOPE. ▼



Proxy – Vertex Pharmaceuticals Incorporated

ANNUAL MEETING OF SHAREHOLDERS – June 5, 2019

THIS PROXY IS SOLICITED ON BEHALF OF THE BOARD OF DIRECTORS

The undersigned does hereby constitute and appoint Jeffrey Leiden, Michael Parini and Sabrina Yohai, and each of them, the attorney(s) and proxy of the undersigned, with full power of substitution, with all the powers that the undersigned would possess if personally present, to vote all stock of Vertex Pharmaceuticals Incorporated that the undersigned is entitled to vote at the Annual Meeting of Shareholders of Vertex Pharmaceuticals Incorporated to be held at 50 Northern Avenue, Boston, Massachusetts 02210, on Wednesday, June 5, 2019 at 9:30 A.M. and at any postponements or adjournments thereof, and hereby acknowledges receipt of the proxy statement for such meeting and revokes all previous proxies.

This proxy, when properly executed, will be voted as directed. If no direction is made, this proxy will be voted FOR each of the nominees and proposals 2 through 5, and AGAINST proposals 6 and 7 and, in the case of other matters that legally come before the meeting or any postponement or adjournment thereof, as said proxies may deem advisable.

Please vote, sign and date on the reverse side and return this proxy card promptly using the enclosed envelope.

C Non-Voting Items

Change of Address – Please print new address below.

Comments – Please print your comments below.

Meeting Attendance
Mark box to the right if
you plan to attend the
Annual Meeting.

