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UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-K/A

(Amendment No. 1)

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

For the fiscal year ended December 31, 2019

OR

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT 0 **OF 1934**

to

For the transition period from

Commission File Number 001-33389

VIVUS, INC.

(Exact name of Registrant as specified in its charter)

Delaware

(State or other jurisdiction of incorporation or organization)

900 E. Hamilton Avenue, Suite 550 Campbell, California (Address of principal executive offices)

Registrant's telephone number, including area code: (650) 934-5200

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

Title of Each Class	Trading Symbol	Name of Each Exchange on Which Registered
Common Stock, \$.001 Par Value	VVUS	The Nasdaq Global Select Market
(Title of class)		

Preferred Share Purchase Rights (Title of class)

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

None

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

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

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

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

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

Large accelerated filer o

Accelerated filer o

Non-accelerated filer ⊠

Smaller reporting company ⊠ Emerging growth company o

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

94-3136179 (IRS employer identification number)

> 95008 (Zip Code)

The aggregate market value of the common equity held by non-affiliates of the Registrant as of June 30, 2019, totaled approximately \$39,767,025 based on the closing stock price as reported on the Nasdaq Global Select Market. As of April 15, 2020, there were 17,867,697 shares of the Registrant's common stock, \$0.001 par value per share, outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

None.

10-K part

Document Description

EXPLANATORY NOTE

This Amendment No. 1 to Form 10-K (this "**Amendment**") amends the Annual Report on Form 10-K for the fiscal year ended December 31, 2019 originally filed on March 3, 2020 (the "**Original Filing**") by VIVUS, Inc., a Delaware corporation. We are filing this Amendment solely for the purpose of presenting the information required by Items 10, 11, 12, 13 and 14 of Part III of Form 10-K because a definitive proxy statement containing such information will not be filed within 120 days after the end of our fiscal year covered by the Original Filing.

This Amendment (i) amends and restates in its entirety each of Items 10, 11, 12, 13 and 14 of Part III of the Original Filing and (ii) amends Item 15 of Part IV of the Original Filing to include currently dated certifications of our principal executive officer and our principal financial officer. Except as expressly set forth herein, the Original Filing continues to speak as of the date of the Original Filing and all disclosures therein not expressly modified or amended by this Amendment remain unchanged (including, without limitation, previously reported financial information). Except as expressly set forth herein, this Amendment does not reflect events occurring after the date of the Original Filing and does not modify or update any of the disclosures contained in the Original Filing in any way other than as required to reflect the amendments or amendments and restatements of the Items described above. Accordingly, this Amendment should be read in conjunction with the Original Filing and our other filings with the Securities and Exchange Commission ("SEC").

When we refer to "we," "our," "us," the "Company" or "VIVUS" in this document, we mean the current Delaware corporation, or VIVUS, Inc., and its California predecessor, as well as all of our consolidated subsidiaries.

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In VIVUS's filings with the SEC, information is sometimes "incorporated by reference." This means that we refer you to information previously filed with the SEC that should be considered as part of the particular filing. As provided under SEC regulations, the "Compensation Committee Report" contained in this Amendment specifically is not incorporated by reference into any other filings with the SEC and shall not be deemed to be "filed" with the SEC. In addition, this Amendment includes a website address. This website address is intended to provide inactive, textual references only. The information on this website is not part of this Amendment.

Item 10. Directors, Executive Officers and Corporate Governance

Our Executive Officers

The following table and the biographical information that follows it set forth information as of April 15, 2020 regarding our executive officers:

Name	Age	Position
John P. Amos	53	Chief Executive Officer and Director
Mark K. Oki	51	Senior Vice President, Chief Financial Officer and Chief Accounting Officer
John L. Slebir	54	Senior Vice President, Business Development and General Counsel and Secretary
Santosh T. Varghese, M.D.	49	Senior Vice President, Chief Medical Officer

The biographical information of Mr. Amos is set forth below under "Our Directors."

Mark K. Oki has served as our Senior Vice President, Chief Financial Officer and Chief Accounting Officer since February 2019. From October 2015 until February 2019, Mr. Oki served as our Chief Financial Officer and Chief Accounting Officer. Prior to this, Mr. Oki held the following positions at Alexza Pharmaceuticals, Inc., a publicly traded pharmaceutical company: Senior Vice President, Finance and Chief Financial Officer from July 2012 until October 2015, Principal Accounting Officer from May 2010 until October 2015, Principal Financial Officer and Secretary from December 2011 until October 2015, Vice President, Finance and Controller from February 2010 until July 2012 and Controller from April 2006 until February 2010. From June 2001 until April 2006, he served as the Controller of Pharmacyclics, Inc., a publicly traded development stage pharmaceutical company. From 1998 until 2001, Mr. Oki held several positions at Incyte Genomics, Inc., now Incyte Corporation, a publicly traded company, including most recently as Assistant Controller. From 1992 until 1997, he held several positions at Deloitte & Touche LLP, a public accounting firm. Mr. Oki holds a B.S. in Business Administration with a concentration in Accounting from San Jose State University.

John L. Slebir has served as our Senior Vice President, Business Development and General Counsel since January 2014, and, since June 2012, he also has served as our Secretary. From June 2011 until January 2014, Mr. Slebir served as our Vice President, Business Development and General Counsel, from January 2011 until June 2011, he served as our Vice President, General Counsel, and, from September 2009 until January 2011, he served as our General Counsel on a part-time basis. From March 1999 until January 2011, Mr. Slebir served as an attorney at Wilson Sonsini Goodrich & Rosati, P.C., specializing in corporate securities and corporate governance. Prior to joining Wilson Sonsini Goodrich & Rosati, P.C., Mr. Slebir was an attorney at two prominent Bay Area law firms specialized in insurance and sporting equipment defense litigation. Mr. Slebir holds a B.A. in Communications from San Diego State University and a J.D. from Santa Clara University School of Law.

Santosh T. Varghese, M.D. has served as our Senior Vice President, Chief Medical Officer since February 2020. From January 2016 until February 2020, Dr. Varghese served as our Chief Medical Officer. Dr. Varghese served as our Vice President, Medical & Regulatory Affairs, Pharmacovigilance, and QA from October 2013 until December 2015, as our Vice President, Head of Medical Affairs, Pharmacovigilance, and Regulatory Compliance from July 2013 until October 2013, as our Vice President, Head of Medical Affairs and Pharmacovigilance from April 2012 until July 2013, and as our Vice President, Head of Medical Affairs from March 2012 until April 2012. Prior to this, Dr. Varghese was Senior Vice President, Medical Affairs at Elan Pharmaceuticals, a biopharmaceutical company, from January 2011 until March 2012. From April 2010 until January 2011, Dr. Varghese served as an executive consultant in the pharmaceutical industry for medical education and pharmaceutical

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companies. From June 2008 until April 2010, he was Vice President Primary Care & Cardiovascular in Global Medical Affairs at Schering-Plough Corporation (now Merck & Co.), a pharmaceutical company, in addition to other senior roles at Schering-Plough Corporation from May 2006 until June 2008. From November 2000 until May 2006, he held senior roles at Aventis and Sanofi-Aventis (now Sanofi SA), a pharmaceutical company. Dr. Varghese previously served on the board of directors of the American Lung Association—New York, and was an Adjunct Associate Professor at Touro University College of Medicine (now New York Medical College). Dr. Varghese is the co-author of abstracts and journal publications in multiple therapeutic areas. Dr. Varghese holds a B.S. in Biology from Pennsylvania State University and an M.D. from St. George's University School of Medicine. He completed his medical training in the Caribbean, United States, and United Kingdom.

Our Directors

Our board of directors (the "Board") currently consists of seven directors.

The following table and the biographical information that follows it set forth information as of April 15, 2020 regarding our Board:

<u>Name</u> John P. Amos	Age	Position Held with the Company	Became a Director
John P. Amos	53	Chief Executive Officer and Director	2018
Karen Ferrell(1)(3)	62	Director	2018
Edward A. Kangas(2)(3)	75	Director	2018
Thomas B. King(1)(3)(4)	65	Director	2017
David Y. Norton(1)(2)(4)	68	Chairman of the Board of Directors and Director	2013
Jorge Plutzky, M.D.(4)	61	Director	2013
Herman Rosenman(1)(2)(4)	72	Director	2013

(1) Member of the Audit Committee of the Board

- (2) Member of the Compensation Committee of the Board
- (3) Member of the Nominating and Governance Committee of the Board
- (4) Member of the Corporate Development Committee of the Board

John P. Amos has served as the Chief Executive Officer and as a director of the Company since April 30, 2018. Mr. Amos served as the Executive Chairman of Willow Biopharma Inc., a biopharmaceutical company, from May 2017 to April 2018 when it was acquired by us. He served as the Chief Executive Officer of ORIX Healthcare Capital LLC, a private equity and venture capital investment company, from October 2012 to April 2017. Mr. Amos served as the Operating Partner and Portfolio Company Board Member of BioVeda China Fund, a financial investment company, from February 2008 to October 2012. He served as the Chief Executive Officer and President of the Oncology Therapeutics Network (acquired by McKesson Corporation in November 2007), a physician services company, from June 2005 to November 2007 and was a special advisor to McKesson Corporation, a public healthcare services company, from November 2007 to May 2008. Mr. Amos served as the President of Oncology Therapeutics Network of Bristol Myers Squibb, a publicly traded biopharmaceutical company, from June 2003 to May 2005. He held executive roles in finance and technology in McKesson Corporation from March 1995 to April 2003. From 1991 to 2003, he served in the United States Air Force and the California Air National Guard in Tactical Fighter Operations. Mr. Amos has previously served on the board of directors of TD2, Navigating Cancer, CITIC Pharmaceuticals, Aesyntix Health, Prodigy Health, Apollo Health Street, Quinian Health, Oncology Therapeutics Network and Matawan Pharmaceuticals. Mr. Amos served as a member of the Scientific

Advisory Board at MD Anderson Cancer Center Institute for Applied Cancer Science (IACS) and was a health policy advisor to Governor Jeb Bush's 2016 Presidential Campaign. He has been appointed as a Trustee of the Global Leadership Council of the University of California, Davis Foundation. Mr. Amos has been named to the Information Week Top 500 CIO's twice and won the Frost and Sullivan Award for Corporate Innovation. He studied Economics at the University of California, Davis and has a B.S. in General Business from the University of the State of New York.

Mr. Amos' prior extensive executive level experience in the biopharmaceutical industry and his experience serving on several boards of directors brings essential experience to the Board needed for strategic planning, product development and commercialization and operations.

Karen Ferrell has served as a director of the Company since October 26, 2018. Ms. Ferrell has served as the Executive Chairman and Chief Executive Officer of Advantum Health, a tech-driven revenue cycle management company since January 2020. Prior to that, she served as the Executive Chairman and Chief Executive Officer at Glenridge HealthCare Solutions, a national tech-enabled network solutions company, from December 2015 to January 2020. From November 2014 to November 2015, Ms. Ferrell served as an independent healthcare consultant and advisor. She served as Chief Executive Officer of Zest Health, a digital consumer healthcare company, from September 2013 to October 2014. Ms. Ferrell served as President and Chief Executive Officer of Apollo Health Street, a healthcare solutions company, from May 2010 to March 2013. An involuntary bankruptcy petition was filed against Apollo Health Street in 2012; the petition was determined to be filed without merit and was subsequently dismissed. She served as Senior Vice President of Provider Contracting and Medical Management of CIGNA Healthcare, a worldwide health services organization, from November 2003 to March 2009. Ms. Ferrell served as a Senior Manager at Deloitte Consulting, a global consulting firm, from February 2000 to November 2003. Prior to this, Ms. Ferrell held leadership positions including President of Aetna Healthplans of Florida, Executive Director at Scripps Health and Vice President of Provider Contracting at Prudential HealthCare. Ms. Ferrell also serves as a director of CredSimple, a tech-enabled credentialing and network management company, and Advantum Health. Ms. Ferrell received an M.B.A. from Pepperdine University.

Ms. Ferrell's qualifications as a director include her senior executive level healthcare services experience and her experience serving on several boards of directors.

Edward A. Kangas has served as a director of the Company since October 26, 2018. Mr. Kangas served as Global Chairman and Chief Executive Officer of Deloitte, an international public accounting and consulting firm, from 1989 until his retirement in 2000. He also served as the Managing Partner of Deloitte & Touche (USA) from 1989 to 1994. He was elected Managing Partner and Chief Executive Officer of Touche Ross in 1985, a position he held through 1989. Mr. Kangas began his career as a staff accountant at Touche Ross in 1967, where he became a Partner in 1975. Since 2003, he has served as a director of Hovnanian Enterprises, Inc., a publicly traded real estate company, and Tenet Healthcare Corporation, a publicly traded healthcare services company. Since 2013, he has served as a director of Intelsat S.A., a satellite service provider and a foreign private issuer with the Securities and Exchange Commission. He has served as Chairman of the Board of Deutsche Bank USA Corp., a privately held subsidiary of Deutsche Bank AG, since 2016. He formerly served as a director of Electronic Data Systems (2004 to 2009), Allscripts Healthcare Solutions, Inc. (2009 to 2011), Eclipsys Corporation (2005 to 2009), Intuit Inc. (2007 to 2016) and United Technologies Corporation (2009 to 2018). In addition, he is a past Chairman of the Board of the National Multiple Sclerosis Society. He is also a member of Beta Gamma Sigma Directors' Table and a life trustee of the board of trustees of the Kansas University Endowment Association. In 2010, Mr. Kangas was named by the National Association of Corporate Directors (NACD) to its Directors Hall of Fame. Mr. Kangas received a B.A. in business administration and an M.B.A. from the University of Kansas. Mr. Kangas is a Certified Public Accountant.

Mr. Kangas' qualifications as a director include his extensive leadership experience, including as Chairman and Chief Executive Officer of an international public accounting and consulting firm, and his experience serving on several boards of directors.

Thomas B. King has served as a director of the Company since May 24, 2017. Mr. King served as the interim Chief Executive Officer of the Company from December 31, 2017 to April 30, 2018 and as interim President of the Company from April 30, 2018 to May 30, 2018. He has served as an independent biotechnology consultant and advisor since August 2016. Previously, Mr. King served as President, Chief Executive Officer and a member of the board of directors of Alexza Pharmaceuticals, Inc., a publicly traded pharmaceutical company, from June 2003 to August 2016. From October 2015 to August 2016, Mr. King also served as Chief Financial Officer and Chief Accounting Officer of Alexza Pharmaceuticals, Inc. From September 2002 to April 2003, Mr. King served as President, Chief Executive Officer and a member of the board of directors of Cognetix, Inc., a privately held biopharmaceutical development stage company. From January 1994 to February 2001, Mr. King held various senior executive positions at Anesta Corporation, a publicly traded pharmaceutical company, including President and Chief Operating Officer from January 1995 to January 1997 and President and Chief Executive Officer from January 1995 to October 2000, and was a member of the board of directors of Concentric Analgesics, Inc., a privately held biotechnology company, and Satsuma Pharmaceuticals, Inc., a publicly traded biotechnology company. Mr. King also serves as an Advisory Board Member of the University of Colorado BioFrontiers Institute. Mr. King received a B.A. in chemistry from McPherson College and an M.B.A. from the University of Kansas Graduate School of Business.

Mr. King's qualifications as a director include his extensive leadership experience in the pharmaceutical and biopharmaceutical industry, including experience with small and large pharmaceutical companies, and his experience serving on several boards of directors of both public and private companies.

David Y. Norton has served as a director of the Company since July 19, 2013 and as Chairman of the Board of Directors since September 12, 2014. From February 2012 until July 2012, Mr. Norton served as Interim CEO of Savient Pharmaceuticals Inc., a pharmaceutical company that filed for Chapter 11 bankruptcy in October 2013. Until his retirement in September 2011, Mr. Norton was Company Group Chairman, Global Pharmaceuticals for Johnson & Johnson, a public healthcare company. In this position he was responsible for leading and developing the strategic growth agenda, including the strategy for licensing, acquisitions and divestments, and ensuring alignment with its global strategic functions, research and development and commercial organizations. Mr. Norton began his Johnson & Johnson career in 1979, and held a number of positions at the company, including Company Group Chairman, Worldwide Commercial and Operations for the CNS, Internal Medicine franchise from 2006 to 2009, Company Group Chairman for the pharmaceutical businesses in Europe, the Middle East and Africa from 2004 to 2006, and Company Group Chairman for the pharmaceutical businesses in North America from 2003 to 2004. Mr. Norton serves as a director of Forepont Capital, LLC and Compass Pathways, a private mental healthcare company. He previously served as a director of INC Research Holdings, Inc., a public global contract research organization, dedicated to the discovery and development of new, faster-acting and affordable tuberculosis medicines, and as a director of Savient Pharmaceuticals Inc. from October 2011 until December 2013, a Senior Advisor to Tapestry Networks, a member of the board of directors of the Alliance for Aging Research, a member of the board of directors of the Pharmaceutical Research and Manufacturers of America, a committee member of the Australian Pharmaceutical Inc.

member and previous Chairman of the board of directors of the American Foundation for Suicide Prevention. Mr. Norton is a graduate of Control Data Institute, Australia and the College of Distributive Trades, United Kingdom.

Mr. Norton's qualifications as a director include his extensive global commercial experience at the executive level in the pharmaceutical and biotechnology industry and his experience serving on several boards of directors, including as Chairman of the board of a public pharmaceutical company.

Jorge Plutzky, M.D. has served as a director of the Company since May 9, 2013. Since 1996, Dr. Plutzky has served as the Director of The Vascular Disease Prevention Program, which includes the Lipid/Prevention Clinic, in the Cardiovascular Medicine Division at Brigham and Women's Hospital, where he is also Director of Preventive Cardiology. Since 1995, he has been on the faculty at Harvard Medical School and has directed a basic science laboratory focused on transcriptional mechanisms involved in adipogenesis, lipid metabolism, and diabetes, and their relationship to inflammation and atherosclerosis. Throughout his career, Dr. Plutzky has also been involved in translational clinical studies investigating links between metabolic disorders and cardiovascular disease. Dr. Plutzky has been a member of the scientific advisory boards of the Sarnoff Cardiovascular Research Foundation since 2009 and Ember Therapeutics since 2012. Dr. Plutzky has been elected to the American Society for Clinical Investigation and is a Fellow of the American College of Cardiology. Dr. Plutzky's papers have appeared in journals that include Science, PNAS, Diabetes, Lancet, Annals of Internal Medicine, and Nature Medicine. Dr. Plutzky has been involved with the U.S. Food and Drug Administration, serving both as a member of the Endocrinologic and Metabolic Drugs Advisory Committee and in advising and presenting for new drug application sponsors. He has been involved with both the American Heart Association and the American Diabetes Association. Dr. Plutzky has been recognized with the Eugene Braunwald Teaching Award, the University of Cologne's Klenk Lecture, Vanderbilt University's Rabin Lecture, Northwestern University's DeStevens Lecture and Harvard Medical School's Tucker Collins Lecture. Dr. Plutzky served on the board of directors of Novelion Therapeutics Inc. (which acquired Aegerion Pharmaceuticals, Inc.), a publicly traded biopharmaceutical company, from April 2015 to August 2017. Dr. Plutzky holds a B.A. from the University of Virginia, where he was an Echols Scholar and a member of Phi Beta Kappa, and an M.D. from the University of North Carolina, Chapel Hill. He completed research fellowships at the National Institutes of Health and the Massachusetts Institute of Technology.

Dr. Plutzky's clinical background, medical knowledge, and science expertise in the prevention and treatment of cardiometabolic disease brings valuable and unique insight to the Board as evaluation, development and commercialization of our current and potential future products proceed.

Herman Rosenman has served as a director of the Company since July 19, 2013. Mr. Rosenman was Chief Financial Officer of Natera, Inc., a publicly traded diagnostics company, from February 2014 to January 2017. Prior to this, Mr. Rosenman was Senior Vice President, Finance and Chief Financial Officer of Gen-Probe, Inc. (currently, Hologic, Inc.), a molecular diagnostic company, from June 2001 to October 2012. Prior to joining Gen-Probe in 2001, Mr. Rosenman was President and Chief Executive Officer of Ultra Acquisition Corp., a retail chain and consumer products manufacturer, from 1997 to 2000. In addition, he served as President and Chief Executive Officer of RadNet Management, Inc., a large healthcare provider, from 1994 to 1997, and as Executive Vice President and Chief Financial Officer for Rexene Corp., a Fortune 1000 company in the petrochemicals industry. Mr. Rosenman was previously a partner at Coopers & Lybrand (currently, PricewaterhouseCoopers LLP), where he served numerous Fortune 1000 clients, principally in the pharmaceuticals and telecommunications industries. Mr. Rosenman currently serves on the board of directors of Natera, Inc., Oxford Immunotec Global PLC, a publicly traded diagnostics company, and DermTech, Inc., a privately held genomics company. Mr. Rosenman also served on the board of directors of Discovery Partners International, Inc., from 2003 until its reverse-merger into Infinity Pharmaceuticals, Inc. in 2006, and thereafter Infinity Pharmaceuticals, Inc., where he served until 2007, as well as on the boards of directors of ARYx

Therapeutics, Inc., from which he resigned in 2011, Emphasys Medical, Inc. and Medistem, Inc. (acquired by Intrexon Corp.). Mr. Rosenman received a B.B.A. in finance and accounting from Pace University and an M.B.A. in finance from the Wharton School of the University of Pennsylvania.

Mr. Rosenman's qualifications as a director include his experience in the biotechnology and pharmaceuticals industries, his extensive leadership experience as both a Chief Executive Officer and a Chief Financial Officer, his diverse industry background in companies ranging from large multinational corporations to start-ups, and his broad base of expertise with initial public offerings, mergers & acquisitions, turn-arounds and high growth companies.

Code of Business Conduct and Ethics

The Board has adopted a Code of Business Conduct and Ethics, which is applicable to all of our employees, officers and directors. The Code of Business Conduct and Ethics may be found on our website at *www.vivus.com*. We will disclose any amendment to the Code of Business Conduct and Ethics or waiver of a provision of the Code of Business Conduct and Ethics, including the name of the person to whom the waiver was granted, on our website on the Investor Relations page within four business days following the date of such amendment or waiver.

Material Changes to Nominee Recommendation Procedures

There are no material changes to the procedures by which stockholders may recommend nominees to our Board.

Audit Committee

We have a separately-designated standing Audit Committee established in accordance with Section 3(a)(58)(A) of the Securities Exchange Act of 1934, as amended (the "**Exchange Act**"). The Audit Committee's main function is to oversee our accounting and financial reporting processes, internal system of control, independent registered public accounting firm relationships and the audits of our financial statements. The Audit Committee currently consists of directors Ferrell, King, Norton and Rosenman, none of whom is an employee of the Company and each of whom is independent under the independence standards for directors and audit committee members set forth in the Nasdaq Listing Rules and the Exchange Act. The Board has determined that Mr. Rosenman is an "audit committee financial expert" as defined in the applicable SEC rules. Mr. Rosenman serves as Chairman of the Audit Committee.

Item 11. Executive Compensation

Compensation Discussion and Analysis

The following Compensation Discussion and Analysis describes the philosophy, objectives and structure of our 2019 executive compensation program. This includes discussion and background information regarding the compensation of our named executive officers.

We refer to the following individuals as our "named executive officers" for 2019:

Name	Title
John P. Amos	Chief Executive Officer
Mark K. Oki	Senior Vice President, Chief Financial Officer and Chief Accounting Officer
John L. Slebir	Senior Vice President, Business Development and General Counsel and Secretary
Santosh T. Varghese, M.D.	Senior Vice President, Chief Medical Officer
Kenneth Suh	Former President
M. Scott Oehrlein	Former Chief Operations Officer

General Philosophy

We compensate our named executive officers through a combination of base salary, cash bonus and equity compensation designed to be competitive with comparable companies. Our core objective is to attract, retain, reward and motivate our named executive officers and to align our performance with the long-term interests of our stockholders. We evaluate our compensation based on a number of factors, including corporate and individual performance.

Our compensation programs are designed to:

- attract and retain our named executive officers by providing an overall compensation package that is competitive in the market in which we compete through cash bonuses and long-term equity awards based on corporate and individual performance;
- share the risks and rewards of our business with our named executive officers;
- align the interests of our named executive officers with the interests of our stockholders in particular through equity awards; and
- compensate our named executive officers in a manner that is efficient and affordable for the Company.

In determining the compensation for our named executive officers, we, in connection with consulting with our compensation consultant, Radford, consider a number of factors, including information regarding comparably sized companies in the biotechnology and pharmaceutical industries in the United States. We also consider the seniority level of the employee, and the employee's overall performance and contribution to the Company.

Executive Summary

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In 2019, we continued our 10 quarter turnaround effort intended to transition VIVUS into a commercial company generating positive cash flows with a development pipeline. Our focus in 2019 was commercializing PANCREAZE® and Qsymia®, maximizing the value of STENDRA®/SPEDRA™ and addressing our outstanding debt balances. In 2019, we introduced the Qsymia Advantage program to reach more of our intended patient population. In the first quarter of 2019, we relaunched PANCREAZE, with a sales force of 10 representatives focused on targeting the top 40% of U.S. physicians who prescribe treatment for exocrine pancreatic insufficiency. Later in 2019, we assumed all commercial responsibility for the sales of PANCREAZE in Canada. We continue the development of VI-0106 and are targeting filing an Investigational New Drug Application with the U.S. Food and Drug Administration in the second half of 2020. In the fourth quarter of 2019, we engaged Piper Sandler as our advisor to work through the complex details of our refinancing effort. As of December 31, 2019, we had a total of \$241.7 million of outstanding debt, \$181.4 million of which is due on May 1, 2020. We do not currently have sufficient cash and/or credit facilities in place to pay our debt due May 1, 2020 and

thus are actively pursuing strategies to address this maturing indebtedness, including transactions with our existing debtholders that restructure or refinance our debt. We may need to seek relief under the U.S. Bankruptcy Code or otherwise complete a restructuring transaction to address our upcoming debt maturity.

Stockholder Say-on-Pay Votes

In accordance with the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, we held a non-binding, advisory stockholder vote at our 2019 Annual Meeting of Stockholders on our 2018 executive compensation practices ("say-on-pay" vote). The Compensation Committee, while not bound to act on a negative vote, carefully considers the opinion of its stockholders in making compensation decisions. We also have an ongoing dialogue with our largest stockholders about various aspects of our business and corporate governance, and we take into consideration the concerns raised by such stockholders. Our stockholders voted to approve, on a non-binding advisory basis, our 2018 executive compensation at the 2019 Annual Meeting. Following our 2019 say-on-pay vote and after careful consideration, the Compensation Committee in conjunction with executive management reduced the payouts under the Annual Bonus Plan for 2019 (including awarding no bonus to our Chief Executive Officer and our Chief Financial Officer), added performance-based vesting components to the equity grants to our executive officers in 2020, and did not increase the base salary for our Chief Executive Officer and our Chief Financial Officer for 2020. In alignment with our philosophy on stockholder say-on-pay votes and with the results of the say-on-pay frequency vote held at our 2017 Annual Meeting, we intend to continue to hold non-binding, advisory stockholder say-on-pay votes annually.

Executive Compensation Program Objectives

Executive Compensation Programs

Our Compensation Committee relies on experience with other companies in our industry and third-party industry compensation surveys, including those compiled and periodically provided to the Compensation Committee by Radford, executive compensation data as reported in peer companies' proxy statements, and internally generated comparisons of the various elements of total compensation to peer group companies (the "**Peer Group**") to determine base salary, performance-based cash bonuses and performance-based equity awards and the portion of total compensation each element should comprise. Given our named executive officers' level of responsibility in the Company and impact on the performance of the Company, we believe that a larger portion of our named executive officers' compensation should be based on performance than that of our lower-level employees. Consistent with our compensation philosophy, we have structured each element of our compensation program as described below.

We design our base pay to provide the essential reward for an employee's work. Once base pay levels are determined, annual increases in base pay are provided to recognize an employee's expanded role and capabilities, specific performance achievements and contributions. Adjustments may also be made for changes in comparable peer company compensation levels in order to remain competitive to attract and retain employees.

We also utilize annual cash bonuses to compensate employees for the achievement of corporate objectives as well as an employee's outstanding results while allowing us to remain competitive with other companies.

We utilize equity-based compensation to ensure that we have the ability to retain employees over a longer period of time and to provide employees with a form of reward that aligns their interests with those of our stockholders. Employees whose skills and results we deem to be critical to our long-term success are eligible to receive higher levels of equity-based compensation.

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In 2019, our annual equity-based compensation to our named executive officers consisted of stock options. The annual equity awards granted to our named executive officers and our other employees for 2019 vest over a period of four years, providing a long-term incentive to our employees as they work on multi-year commercialization and drug development programs. In addition, the annual equity award to Mr. Suh for 2019 included both time-based vesting and performance-based vesting.

Core benefits, such as our basic health benefits, 401(k) program, disability and life insurance plans, are designed to provide support to employees and their families and to be competitive with other companies in our industry.

Our Peer Group

For determining 2019 compensation levels, our Compensation Committee, after consulting with Radford, chose a group of 21 companies to include in the Peer Group based on their similarity to us in terms of industry focus, stage of development, market capitalization size, revenues, financial position, entity size, pharmaceutical assets, business strategy, and the geographical location of the talent pool with which we compete. The market data for the Peer Group was drawn from publicly available documents. For 2019, the Peer Group, which was determined by the Compensation Committee after consulting with Radford, consisted of the following companies:

AcelRx Pharmaceuticals, Inc. Adamis Pharmaceuticals Corporation ADMA Biologics, Inc. Alimera Sciences, Inc. Aptevo Therapeutics Inc. Ardelyx, Inc. BioDelivery Sciences International, Inc. Cancer Genetics, Inc. Corium International, Inc. CTI BioPharma Corp. Cumberland Pharmaceuticals Inc. Fortress Biotech, Inc. MannKind Corporation Neos Therapeutics, Inc. Pernix Therapeutics Holdings, Inc. Recro Pharma, Inc. RedHill Biopharma Ltd. Sorrento Therapeutics, Inc. Teligent, Inc. Tetraphase Pharmaceuticals, Inc. Verastem, Inc.

The data on the compensation practices of the Peer Group is gathered by searches of publicly available information. Due to the variations between companies reporting the individual and roles for which compensation is disclosed, directly comparable information is not available from each peer company with respect to each of our named executive officers. In considering the Peer Group compensation data, the Compensation Committee recognizes that executives at different companies can play significantly different roles, with different responsibilities and scope of work, even though they may hold similar titles or positions. Moreover, it is not always possible to determine the respective qualitative factors that may influence compensation from the publicly reported compensation data, such as scope of each named executive officer's responsibilities, their performance during the period under consideration or their perceived importance to their companies' business, strategy and objectives. Accordingly, the Compensation Committee looked to information about the Peer Group as one of a number of considerations in establishing executive compensation levels (as described in more detail below). In determining compensation for our named executive officers, the Compensation Committee reviewed both Peer Group information and the collective experience of the members of our Compensation Committee and executive management to establish our compensation practices.



Executive Compensation Components

We have structured each element of our compensation package as follows:

Base Salary

We determine our named executive officers' salaries based on job responsibilities and individual experience, and we benchmark the amounts we pay against comparable competitive market compensation for similar positions within our Peer Group and industry. Specifically, we utilize information obtained from our comparison of Peer Group compensation data and the annual Radford Global Life Sciences Survey (the "**Comparison Data**"). Our Compensation Committee reviews the salaries of our named executive officers annually, and our Compensation Committee grants increases in salaries based on a review of the Comparison Data and of individual performance during the prior calendar year provided that any increases are within the guidelines provided by Radford and determined by the Compensation Committee for each position. Guidelines are adjusted and modified on an annual basis based on information obtained from our review of the Comparison Data, as well as from our Compensation Committee's and management's experience and general employment market conditions for our industry and geographic area. Increases in base salary are based on individual performance as merit increases and on the Comparison Data as market increases; such increases are not automatic or guaranteed.

In January 2019, our Compensation Committee reviewed base salaries for our then serving named executive officers. The Compensation Committee considered a number of factors in setting the 2019 base salaries for our then serving named executive officers, including maximizing the value of PANCREAZE, Qsymia and STENDRA/SPEDRA, building our product development pipeline, identifying and acquiring a cash flow product, and addressing our outstanding debt balances. In addition, the Compensation Committee reviewed the Comparison Data and the individual performance of our named executive officers during the prior calendar year. Following the Compensation Committee's review, all of our named executive officers, with the exception of Mr. Amos, received increases to their base salaries.

The table below provides the base salary for each named executive officer:

Name	2019 Increase to Base Salary	2019 Base Salary (\$)
John P. Amos(1)	—	545,000
Mark K. Oki(2)	7%	411,000
John L. Slebir	3%	497,200
Santosh T. Varghese, M.D.	3%	438,900
Kenneth Suh(3)	3%	473,800
M. Scott Oehrlein(4)	3%	386,300

(1) Effective April 30, 2018, Mr. Amos was appointed to serve as the Company's Chief Executive Officer.

- (2) The increase to Mr. Oki's base salary in 2019 reflected a 3% annual increase and a 4% increase due to his promotion to Senior Vice President.
- (3) Effective August 3, 2018, Mr. Suh was appointed to serve as the Company's President. Mr. Suh previously served as President and Chief Executive Officer of Willow Biopharma Inc., a wholly owned subsidiary of the Company. Effective October 31, 2019, Mr. Suh's employment with the Company terminated.



(4) Effective April 30, 2018, Mr. Oehrlein was appointed to serve as the Company's Chief Operations Officer. Effective October 31, 2019, Mr. Oehrlein's employment with the Company terminated.

Cash Bonus Plans

Annual Bonus Plan. We awarded cash bonuses under the Annual Bonus Plan to our eligible named executive officers based on our overall corporate performance, achievement of general corporate performance objectives established by our Board of Directors in April 2019, individual performance and discretionary factors considered by the Compensation Committee. The cash bonuses are based on an end-of-year assessment by our Compensation Committee. The corporate performance performance, the achievement of corporate objectives and discretionary factors considered by the Compensation Committee determine the percent of the eligible target bonus to be paid to each eligible named executive officer. Each eligible named executive officer's individual performance is reviewed to determine how such named executive officer's performance contributed to our overall corporate performance and achievement of corporate performance objectives. The Compensation Committee uses this information to determine the named executive officer's cash bonus award, such that the percent of the eligible bonus to be paid to a named executive officer may be increased, decreased or eliminated based on the individual performance review. Cash bonuses under the Annual Bonus Plan are awarded on a discretionary basis, and the Compensation Committee may modify, eliminate or adjust corporate objectives at any time, thereby ensuring that employees are compensated for performance.

For 2019, our corporate performance objectives as approved by our Board in April 2019, were as follows:

- achieving certain financial target goals;
- achieving certain business development goals; and
- achieving certain compliance excellence goals.

Following a review of the Company's activities in 2019, the Compensation Committee determined based on discretionary factors that bonuses under the Annual Bonus Plan equaling 50% of the eligible cash bonus potential would be paid for 2019 to our eligible employees under the plan, including our eligible named executive officers other than our Chief Executive Officer and our Chief Financial Officer. The Compensation Committee decided not to award bonuses under the Annual Bonus Plan to our Chief Executive Officer and our Chief Financial Officer.

The table below provides the target bonus and maximum bonus amounts for each named executive officer who participated in the Annual Bonus Plan for 2019 and such executive's actual bonus amount for 2019 as awarded by the Compensation Committee:

Name	2019 Target Bonus as a Percentage of Base Salary	2019 Target Bonus (\$)	2019 Maximum Bonus as a Percentage of Base Salary	2019 Maximum Bonus (\$)(1)	2019 Actual Bonus as a Percentage of Base Salary	2019 Actual Bonus (\$)
John P. Amos	60%	327,000	60%	327,000	—	—
Mark K. Oki	50%	205,500	50%	205,500	—	—
John L. Slebir	50%	248,600	50%	248,600	25%	124,300
Santosh T. Varghese, M.D.	40%	175,560	40%	175,560	24%	105,336
Kenneth Suh(2)	50%	236,900	50%	236,900		
M. Scott Oehrlein(3)	45%	173,835	45%	173,835		

(1) The Compensation Committee may award up to 10% of base salary of additional bonus to each named executive officer based on individual performance.

- (2) Mr. Suh's employment with the Company terminated, effective October 31, 2019.
- (3) Mr. Oehrlein's employment with the Company terminated, effective October 31, 2019.

For 2020, under the Annual Bonus Plan, the Compensation Committee determined that our Chief Executive Officer, Chief Financial Officer, Senior Vice Presidents (or equivalent pay grade) and Vice Presidents (or equivalent pay grade) would be eligible for target and maximum cash bonuses of up to 60%, 50%, 50% and 40% of their base salaries, respectively. The table below provides the 2020 base salary and the target and maximum bonus amounts for each named executive officer who is participating in the Annual Bonus Plan for 2020:

Name	2020 Base <u>Salary (\$)(1)</u>	2020 Target Bonus as a Percentage of Base Salary	2020 Target Bonus (\$)	Maximum Bonus as a Percentage of Base Salary	2020 Maximum Bonus (\$)(2)
John P. Amos	545,000	60%	327,000	60%	327,000
Mark K. Oki	411,000	50%	205,500	50%	205,500
John L. Slebir	512,120	50%	256,060	50%	5 256,060
Santosh T. Varghese, M.D.	460,700	50%	230,350	50%	230,350

- (1) All of our named executive officers received increases to their base salaries, with the exception of Messrs. Amos and Oki.
- (2) The Compensation Committee may award up to 10% of base salary of additional bonus to each named executive officer based on individual performance.

Supplemental Cash Bonus Plan. In 2019, we also implemented a Supplemental Cash Bonus Plan. Under the Supplemental Cash Bonus Plan, our named executive officers were eligible to each receive a supplemental cash bonus of \$200,000 should the Company achieve certain financial metrics in fiscal year 2019; provided, however, that the payment of the supplemental cash bonus shall be at the sole discretion of the Compensation Committee and made only to eligible officers in good standing and employed on the date of payment. No amounts were paid under the Supplemental Cash Bonus Plan.

Equity Compensation

Our Compensation Committee awards equity compensation to our named executive officers based on the performance of the named executive officer and guidelines provided by Radford related to each named executive officer's position in the Company, including the assistance and recommendations of Radford with regards to peer practices and pay levels, as well as other relevant information regarding companies in our industry. We utilize the Comparison Data to modify and adjust our equity award guidelines. We typically base awards to newly hired employees on these guidelines, and we base awards to continuing employees on these guidelines along with an employee's performance for the prior fiscal year. In determining the amount of awards, we generally do not consider an employee's current equity ownership in the Company or the prior awards that are fully vested. Rather, we evaluate each employee's awards based on the factors described above and competitive market factors in our industry.

Our stock option awards typically vest over a four-year period subject to the continued service of the employee to the Company. Twenty-five percent of the shares typically vest on the first anniversary of the option award, with the remaining shares vesting monthly in equal amounts over the remainder of the vesting period. Our restricted stock unit awards typically vest over a four-year period subject to the continued service of the employee to the Company. Twenty-five percent of the shares typically vest on each annual anniversary of the restricted stock unit award. Unless our employees (including our named executive officers) elect otherwise, upon the vesting of the restricted stock units shares of Common Stock are sold to satisfy the tax liability due upon such vesting. We believe these vesting arrangements

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encourage our employees to continue service to the Company for a longer period of time and remain focused on our multi-year long-term drug development and commercialization programs. In addition, we have granted equity awards to our named executive officers with time-based vesting and performance-based vesting.

Timing of Equity Awards. Our Compensation Committee typically makes award decisions for employees at its first meeting in each fiscal year. We believe determining annual awards at this time allow the Compensation Committee to consider a number of factors related to the stock option award and restricted stock unit award decisions, including corporate performance for the prior fiscal year, employee performance for the prior fiscal year and expectations for the upcoming fiscal year. With respect to newly hired employees, our practice is typically to make stock option awards at the first meeting of the Compensation Committee following the employee's hire date. We do not plan or time our stock option awards in coordination with the release of material non-public information for the purpose of affecting the value of executive compensation.

Allocation of Equity Compensation. In 2019, we granted stock options to purchase 492,660 shares of our Common Stock, of which stock options to purchase (i) a total of 349,500 shares were awarded to named executive officers, representing approximately 71% of all stock option awards in 2019, and (ii) no shares were awarded to directors, representing approximately 0% of all stock option awards in 2019. In February 2020, pursuant to our equity compensation arrangement for non-employee directors, our Compensation Committee approved annual stock option awards to our then-serving non-employee directors as reflected in the Director Compensation Table below; such annual stock option awards were awarded for the non-employee directors' service to the Company in 2019. Our Compensation Committee does not apply a formula for allocating stock options and restricted stock units to named executive officers. Instead, our Compensation Committee considers the role and responsibilities of the named executive officers, competitive factors, the non-equity compensation received by the named executive officers and the total number of stock options and restricted stock units to be granted in the fiscal year.

Type of Equity Awards. Under our 2018 Equity Incentive Plan, we may award incentive stock options, within the meaning of Section 422 of the Internal Revenue Code of 1986, as amended (the "**Code**") to our employees, and we may award nonstatutory stock options, stock appreciation rights, restricted stock, restricted stock units, performance units and performance shares to our employees, directors and consultants. In 2019, we awarded stock options to our named executive officers.

Equity Awards in 2019. In January 2019, our Compensation Committee reviewed equity compensation for our then serving named executive officers. The Compensation Committee reviewed the Comparison Data and the individual performance of such named executive officers during the prior calendar year. Following the Compensation Committee's review, our named executive officers received stock options as reflected in the 2019 Grants of Plan-Based Awards Table below.

Retirement Savings Plan

We maintain a 401(k) retirement savings plan for the benefit of our eligible employees. Employees may elect to contribute their compensation up to the statutorily prescribed limit. We currently match employee contributions up to a maximum of 4% of an employee's salary per pay period. In 2019, the employer-match contribution limit was \$11,200 per employee.

Change of Control Benefits

A description of the change of control benefits given to our named executed officers and a table showing potential payments upon termination or change of control of our named executive officers are

set forth below under the section entitled "Potential Payments Upon Termination or Change of Control for each Named Executive Officer."

Perquisites and Other Benefits

We annually review the perquisites that our named executive officers receive. In addition, we offer basic health benefits, a 401(k) program and short-term and long-term disability insurance plans to all of our employees, including all of our named executive officers.

Compensation Process

The Compensation Committee reviews and approves the salaries and incentive compensation of our named executive officers, executive and nonexecutive officers and non-employee directors and reviews and approves all new hire stock option awards to employees. In addition, the Compensation Committee approves equity awards for all employees as part of our annual performance review process. The Compensation Committee approves a pool of equity awards for employees who are not executive officers, and the Chief Executive Officer distributes this pool in his discretion and based on the performance of each individual. The agendas for meetings of the Compensation Committee are prepared by the Compensation Committee Chairman in consultation with management. Our Chief Executive Officer, Chief Financial Officer, and General Counsel typically attend the meetings of the Compensation Committee, but the Chief Executive Officer, the Chief Financial Officer and the General Counsel do not participate in deliberations relating to their own compensation. In rendering its decisions, the Compensation Committee considers the recommendations of the Chief Executive Officer, with input by the Chief Financial Officer and the General Counsel, the information regarding comparably sized companies in the biotechnology and pharmaceutical industries in the United States and its collective experience with other companies. Additionally, the Compensation Committee considers data and information provided by Radford. The Compensation Committee reviews the performance and compensation of the Chief Executive Officer and Chief Financial Officer annually, in addition to all other executive and non-executive officers.

Our Compensation Committee also works with our Chief Executive Officer and Chief Financial Officer in evaluating the financial, accounting, tax and retention implications of our various compensation programs.

Effect of Accounting and Tax Treatment on Compensation Decisions

Generally, Section 162(m) of the Code disallows a tax deduction to any publicly-held corporation for any remuneration in excess of \$1.0 million paid in any taxable year to its chief executive officer and each of its three next most highly-compensated named executive officers (other than its chief financial officer only for fiscal years prior to 2017). Remuneration in excess of \$1.0 million may be deducted if, among other things, it qualifies as "performance-based compensation" within the meaning of the Code.

The 2017 tax reform legislation removed the "performance-based compensation" exception from Section 162(m). Accordingly, awards made after November 2, 2017, generally are not eligible for the "performance-based compensation" exception and will not be deductible to the extent that they cause the compensation of the affected executive officers to exceed \$1 million in any year. Awards that were made and subject to binding written contracts in effect on November 2, 2017, are "grandfathered" under prior law and can still qualify as deductible "performance-based compensation," even if paid in future years. Our Compensation Committee will continue to monitor these awards and endeavor to ensure that they are deductible if and when paid. While the Compensation Committee considers the deductibility of compensation as one factor in determining executive compensation, the Compensation Committee believes that it is in the best interests of our stockholders to maintain flexibility in our approach to executive compensation and to structure a program that we consider to be the most effective in attracting, motivating and retaining key employees.

Executive Time Off

All of our full-time employees, including our named executive officers, receive three to five weeks of vacation each year, based upon the length of service. Mr. Amos, our Chief Executive Officer, is entitled to receive three weeks of vacation each year. Unused vacation carries over to the following year and may accumulate up to three weeks at any time. Upon termination, all employees are paid their accrued benefit that existed as of the date of such termination. Additionally, all employees receive two personal days and eight sick days each year. Unused personal days carry over to the following year and may accumulate up to two days. All employees are paid their accrued benefit of any unused personal days as of the date of termination. Sick days expire if unused as of the date of termination or the end of the calendar year.

2019 Summary Compensation Table

The following table presents information for our fiscal year ended December 31, 2019 concerning the total compensation paid to or accrued for our Chief Executive Officer, Chief Financial Officer, former President, former Chief Operations Officer and each of our two other most highly compensated executive officers. We refer to these executive officers as our "named executive officers" below.

Name and Principal Position	Year	Salary (\$)(1)	Bonus (\$)(2)	Stock Awards (\$)(3)	Option Awards (\$)(3)	Non-Equity Incentive Plan Compensation (\$)(4)	All Other Compensation (\$)(5)	Total (\$)
John P. Amos(6)	2019	545,000			317,694		11,200	873,894
Chief Executive Officer and Director	2018	365,429			532,440	186,227	10,800	1,094,896
Mark K. Oki(7)	2019	411,000			73,936	_	11,200	496,136
Senior Vice President,	2018	383,986	50,000		102,870	130,555	10,800	678,211
Chief Financial Officer and	2017	362,250			210,595	100,561	10,800	684,206
Chief Accounting Officer								
John L. Slebir	2019	497,200	—	—	73,936	124,300	11,200	706,636
Senior Vice President,	2018	482,710	50,000		117,045	205,152	10,800	865,707
Business Development and	2017	468,650			239,313	162,622	10,800	881,385
General Counsel and Secretary								
Santosh T. Varghese, M.D.(8)	2019	438,900			73,936	105,336	11,200	629,372
Senior Vice President, Chief Medical	2018	426,120	_	_	49,613	144,881	10,800	631,414
Officer	2017	421,900	_	_	210,595	75,942	10,800	719,237
Kenneth Suh(9)	2019	425,811	—	—	196,393	—	955,410	1,577,614
Former President	2018	306,140	_		348,840	130,985	100,000	885,965
M. Scott Oehrlein(10) Former Chief Operations Officer	2019	342,345		—	71,626	—	744,323	1,158,294

Former Chief Operations Office

(1) The amounts in this column include payments in respect of vacation, personal days, holidays and sick days taken during the fiscal years presented.

(2) The amounts included in this column represent special bonus payments that were approved by the Compensation Committee in June 2018 and paid to Messrs. Oki and Slebir for their performance in the first half of 2018 in connection with the acquisition of the shares of Willow Biopharma Inc. and onboarding of the members of new management, the acquisition of the product PANCREAZE® from Janssen Pharmaceuticals, Inc., and the financing with Athyrium Capital Management, L.P.

(3) The amounts included in this column do not reflect compensation actually received by the named executive officer but represent the grant date fair value computed in accordance with FASB ASC Topic 718. The valuation assumptions used in determining such amounts are described in Note 16 to our consolidated financial statements included in our Annual Report on Form 10-K for the fiscal year ended December 31, 2019. See also the 2019 Grants of Plan-Based Awards table below for information on option awards made in 2019.

(4) The amounts for fiscal year 2019 in this column consist of cash bonus payments under the Annual Bonus Plan approved by the Compensation Committee in January 2020. Please see "Compensation Discussion and Analysis" above for a description of the Annual Bonus Plan.

(5) The amounts in this column include (i) severance payments, (ii) contributions made by the Company under its 401(k) Plan and (iii) reimbursement for moving expenses, as provided in the following table:

Name	Year	Severance Payments (\$)	401(k) Contributions (\$)	Reimbursement for Moving Expenses (\$)
John P. Amos	2019	_	11,200	_
Mark K. Oki	2019	_	11,200	
John L. Slebir	2019	_	11,200	_
Santosh T. Varghese, M.D.	2019	_	11,200	_
Kenneth Suh	2019	912,083	11,200	32,127
M. Scott Oehrlein	2019	733,123	11,200	_

For more information regarding severance payments, please see the section entitled "Potential Payments Upon Termination or Change of Control for each Named Executive Officer."

- (6) Mr. Amos was appointed to serve as the Company's Chief Executive Officer, effective April 30, 2018.
- (7) The Board of Directors of the Company authorized and approved the promotion of Mr. Oki from his role as Chief Financial Officer and Chief Accounting Officer to the role of Senior Vice President, Chief Financial Officer and Chief Accounting Officer, effective February 21, 2019.
- (8) The Board of Directors of the Company authorized and approved the promotion of Dr. Varghese from his role as Chief Medical Officer to the role of Senior Vice President, Chief Medical Officer, effective February 20, 2020.
- (9) Mr. Suh was appointed to serve as the Company's President, effective August 3, 2018. Mr. Suh previously served as President and Chief Executive Officer of Willow Biopharma Inc., a wholly owned subsidiary of the Company. Prior to Mr. Suh's appointment as the Company's President, he received compensation in Canadian dollars. Amounts shown reflect the exchange rate from Canadian dollars to U.S. dollars of 0.768, the average exchange rate over the period of such compensation. Mr. Suh's employment with the Company terminated, effective October 31, 2019. 50% of the option award for Mr. Suh vested at the time of his departure from the Company; the remaining shares were cancelled.
- (10) Mr. Oehrlein was appointed to serve as the Company's Chief Operations Officer, effective April 30, 2018. Mr. Oehrlein's employment with the Company terminated, effective October 31, 2019. 50% of the option award for Mr. Oehrlein vested at the time of his departure from the Company; the remaining shares were cancelled.

2019 Grants of Plan-Based Awards

The following table provides information with regard to each grant of an award made to a named executive officer under any plan during the fiscal year ended December 31, 2019.

		Estimated Future Payouts Under Non-Equity Incentive Plan Awards(1)			Estimated Future Payouts Under Equity Incentive Plan Awards			All Other Stock Awards: Number of	All Other Option Awards: Number of	Exercise or Base Price of	Grant Date Fair Value
Name	Grant Date	Thre- shold(\$)	Target (\$)	Maxi- mum(\$)	Thre- shold(#)	Target (#)	Maxi- mum(#)	Shares of Stock or Units(#)	Securities Underlying Options(#)	Option Awards (\$/Sh)(2)	of Stock and Option Awards(\$)(3)
John P. Amos Stock Options Restricted Stock Unit Award	1/23/2019	_			_	_	=	_	137,500 —	4.05	317 ,69 4 —
Annual Bonus Plan Mark K. Oki Stock Options Restricted Stock Unit Award	1/23/2019		327,000 	327,000					32,000	4.05	73,936
Annual Bonus Plan John L. Slebir Stock Options Restricted Stock Unit Award	 1/23/2019 		205,500	205,500					32,000 	4.05	73,936 —
Annual Bonus Plan Santosh T. Varghese, M.D. Stock Options Restricted Stock Unit Award Annual Bonus Plan	1/23/2019		248,600 175,560	248,600 175,560	_				32,000 —	4.05	
Kenneth Suh(4) Stock Options Restricted Stock Unit Award Annual Bonus Plan	1/23/2019		236,900	236,900	-	35,000			50,000	4.05	196,393
M. Scott Oehrlein(5) Stock Options Restricted Stock Unit Award Annual Bonus Plan	1/23/2019 		173,835	173,835	=		=		31,000 —	4.05	71,626 —

(1) The row entitled "Annual Bonus Plan" for each respective named executive officer in the table above reflects the threshold, target and maximum value of a cash bonus award to each respective named executive officer for 2019 under the Annual Bonus Plan approved by the Compensation Committee in January 2020. Please see "Compensation Discussion and Analysis" above for further detail on the maximum value of a cash bonus award to each respective named executive officer. The cash bonus award amounts actually paid under the Annual Bonus Plan to the named executive officers for 2019 are shown in the Summary Compensation Table for 2019 under the heading "Non-Equity Incentive Plan Compensation." Please see "Compensation Discussion and Analysis" above for a description of the Annual Bonus Plan.

(2) Stock options are granted at an exercise price equal to the fair market value of the Company's Common Stock, as determined by reference to the closing price reported on The Nasdaq Global Select Market on the date of grant.

(3) The grant date fair value of stock awards is calculated based on the market value of the Company's Common Stock on the date of grant. The grant date fair value of option awards is calculated using the Black-Scholes option pricing model on the date of the grant.

(4) Mr. Suh's employment with the Company terminated, effective October 31, 2019.

(5) Mr. Oehrlein's employment with the Company terminated, effective October 31, 2019.

Outstanding Equity Awards at Fiscal Year-End

The following table presents certain information concerning the outstanding equity awards held as of December 31, 2019 by each named executive officer.

	Option Awards					
Name	Grant Date	Number of Securities Underlying Unexercised Options (#) Exercisable(1)	Number of Securities Underlying Unexercised Options (#) Unexercisable(1)	Equity Incentive Plan Awards: Number of Securities Underlying Unexercised Unearned Options (#)(2)	Option Exercise Price (\$)(3)	Option Expiration Date(4)
John P. Amos	4/30/2018	112,500	157,500	—	3.70	4/30/2025
	4/30/2018	—	—	20,000	3.70	4/30/2025
	1/23/2019	—	137,500	_	4.05	1/23/2026
Mark K. Oki	10/30/2015	22,500	—	—	12.60	10/30/2022
	1/22/2016	9,156	194	—	10.60	1/22/2023
	1/27/2017	28,074	10,426	—	11.20	1/27/2024
	2/2/2018	16,041	18,959	—	4.00	2/2/2025
	4/30/2018	—	—	20,000	3.70	4/30/2025
	1/23/2019	—	32,000	—	4.05	1/23/2026
John L. Slebir	1/21/2011	16,626	—	—	87.40	1/21/2021
	1/27/2012	5,001	—	—	120.40	1/27/2022
	1/25/2013	7,001	—	—	123.90	1/25/2023
	1/28/2014	5,101	—	—	77.50	1/28/2021
	1/23/2015	24,640	—	—	27.40	1/23/2022
	1/22/2016	61,198	1,302	—	10.60	1/22/2023
	1/27/2017	31,901	11,849	—	11.20	1/27/2024
	2/2/2018	19,479	23,021	—	4.00	2/2/2025
	4/30/2018	—	—	20,000	3.70	4/30/2025
	1/23/2019	—	32,000	—	4.05	1/23/2026
Santosh T. Varghese, M.D.	4/25/2012	20,001	—	—	242.30	4/25/2022
	1/25/2013	5,251	—	—	123.90	1/25/2023
	1/28/2014	3,401	—	—	77.50	1/28/2021
	1/23/2015	13,970	—	—	27.40	1/23/2022
	1/22/2016	53,855	1,145	—	10.60	1/22/2023
	1/27/2017	28,073	10,427	—	11.20	1/27/2024
	2/2/2018	12,031	14,219	—	4.00	2/2/2025
	1/23/2019	—	32,000	—	4.05	1/23/2026
Kenneth Suh(5)	4/30/2018	116,875	—		3.70	10/31/2020
	4/30/2018	10,000	_		3.70	10/31/2020
	1/23/2019	42,500	_		4.05	10/31/2020
M. Scott Oehrlein(6)	4/30/2018	42,625	_		3.70	10/31/2020
	4/30/2018	10,000	—		3.70	10/31/2020
	1/23/2019	15,501	—		4.05	10/31/2020

(1) The stock options outstanding generally vest, subject to the employee's continued service to the Company, with respect to 25% of the options upon the one year anniversary of the grant date and 1/36th of the remaining options vesting each month thereafter, with full vesting occurring on the fourth anniversary of the date of grant. Mr. Suh's option grant on January 23, 2019 provided as follows: 12,560 of the total number of options will vest and become exercisable upon the one year anniversary of the grant date, an additional 1,040 of the total number of options will vest and become exercisable on the last day of each month thereafter for thirty-six months, and 35,000 of the total number of options will vest and become exercisable upon the Company's acquisition of a new commercial enterprise on or before January 23, 2022,

subject to his continued service to the Company. 50% of this option award for Mr. Suh vested at the time of his departure from the Company; the remaining shares were cancelled.

- (2) Messrs. Amos, Oehrlein, Oki, Suh and Slebir each received grants of 20,000 options on April 30, 2018 which will vest upon the Company achieving and sustaining a market capitalization of \$300 million or more for 30 consecutive days at any time on or prior to April 30, 2021, subject to their continued service to the Company. 50% of these option awards for Messrs. Oehrlein and Suh vested at the time of their departure from the Company; the remaining shares were cancelled. In addition, please see the disclosure in footnote (1) above regarding Mr. Suh's option grant on January 23, 2019.
- (3) Stock options are granted at an exercise price equal to the fair market value of our Common Stock, as determined by reference to the closing price reported on The Nasdaq Global Select Market on the date of grant.
- (4) Options granted in January 2013 or prior thereto generally expire 10 years from the date of grant, and options granted after January 2013 generally expire seven years from the date of grant. The option awards for Messrs. Oehrlein and Suh expire on October 31, 2020, which is the 12 month anniversary of their departure from the Company.
- (5) At the time of Mr. Suh's departure from the Company, all then-outstanding and unvested equity awards held by him were subject to 50% accelerated vesting. Any remaining unvested options were cancelled.
- (6) At the time of Mr. Oehrlein's departure from the Company, all then-outstanding and unvested equity awards held by him were subject to 50% accelerated vesting. Any remaining unvested options were cancelled.

2019 Option Exercises and Stock Vested

The following table shows the number of shares acquired pursuant to the vesting of restricted stock units by each named executive officer during the fiscal year ended December 31, 2019 and the aggregate dollar amount realized by the named executive officer upon vesting of the restricted stock units.

	Stock Awa	ards
Name	Number of Shares Acquired on Vesting(#)	Value Realized on Vesting(\$)(1)
Name John P. Amos		_
Mark K. Oki		_
John L. Slebir	162	361
Santosh T. Varghese, M.D.	92	205
Kenneth Suh		
M. Scott Oehrlein	—	

(1) The aggregate dollar amount realized upon vesting is based on the closing price of our Common Stock on The Nasdaq Global Select Market on the vesting dates.



Potential Payments Upon Termination or Change of Control for each Named Executive Officer

Based upon a hypothetical triggering date of December 31, 2019, the quantifiable benefits for each named executive officer upon the occurrence of certain specified events are set forth in the table below.

Executive benefits and payments upon termination:	Involuntary termination not for cause or by constructive termination not in connection with a change of control(\$)	Benefits in connection with a change of control(\$)	Involuntary termination not for cause or by constructive termination in connection with a change of control(\$)	Death or Disability(\$)
John P. Amos				
Base salary	545,000		817,500	_
Bonus	513,227		676,727	_
Medical continuation	37,500		56,250	_
Outplacement services	—	—	—	—
Value of accelerated stock options(1)			—	—
Mark K. Oki				
Base salary	411,000		616,500	_
Bonus	364,146		466,896	_
Medical continuation	37,500		56,250	_
Outplacement services	_		_	_
Value of accelerated stock options(1)			_	_
John L. Slebir				
Base salary	497,200		745,800	_
Bonus	440,520		564,820	_
Medical continuation	37,500		56,250	_
Outplacement services	_		_	_
Value of accelerated stock options(1)	_		_	_
Santosh T. Varghese, M.D.				
Base salary	438,900		658,350	_
Bonus	289,674		377,454	_
Medical continuation	37,500		56,250	_
Outplacement services				
Value of accelerated stock options(1)			_	
Kenneth Suh(2)(4)				
Base salary	473,800		473,800	_
Bonus	404,704		404,704	_
Medical continuation	23,579		23,579	_
Reimbursement for legal fees	10,000		10,000	
Outplacement services				
Value of accelerated stock options(1)			_	
M. Scott Oehrlein(3)(4)				
Base salary	386,300		386,300	_
Bonus	296,968		296,968	_
Medical continuation	49,855		49,855	
Outplacement services				
Value of accelerated stock options(1)		_		
······································				

(1) Represents the aggregate value of the acceleration of vesting of the named executive officer's unvested stock options based on the product of (i) the spread between the closing price of our Common Stock on December 31, 2019 of \$2.72 and the exercise price of the stock options, and (ii) the number of shares of our Common Stock underlying unvested stock options. Aggregate intrinsic value represents only the value for those stock options in which the exercise price of the option is less than the market value of our Common Stock on December 31, 2019. The exercise price of all outstanding stock option awards was greater than the market value of our Common Stock on December 31, 2019.

- (2) Termination benefits for Mr. Suh represent the amounts paid to him at the time of his departure from the Company effective October 31, 2019. Please see footnote (4) below for additional information regarding the termination benefits.
- (3) Termination benefits for Mr. Oehrlein represent the amounts paid to him at the time of his departure from the Company effective October 31, 2019. Please see footnote (4) below for additional information regarding the termination benefits.
- (4) Pursuant to the Amended Agreement (as defined below), Messrs. Oehrlein and Suh were each entitled to receive, subject to signing a release of claims in favor of the Company: (i) monthly severance payments equal to the monthly salary he was receiving immediately prior to the termination date for 12 months, (ii) monthly severance payments equal to 1/12th of his target bonus for the fiscal year in which the termination occurs for 12 months, (iii) an additional pro rata portion of his target bonus for the fiscal year in which the termination occurs, (iv) up to 12 months of reimbursement for premiums paid for the employer's portion of COBRA coverage, and (vi) any then-outstanding and unvested equity awards held by him are subject to 50% accelerated vesting. In additional provide Mr. Suh with reimbursement of up to \$10,000 for immigration related legal fees and Mr. Oehrlein with an additional six months of reimbursement for premiums paid for the employer's portion of COBRA coverage.

The Compensation Committee believes that providing our named executive officers protection against a termination of employment by the Company without cause or by a named executive officer for good reason is consistent with competitive practices and will help retain our named executive officers and maintain leadership stability. The Compensation Committee also believes that providing our named executive officers with benefits upon a change of control is in the best interests of our stockholders because change of control benefits help reduce the potential reluctance of our named executive officers to pursue certain change of control transactions that create employment uncertainty. The change of control benefits are designed to help retain the Company's named executive officers and maintain a stable work environment.

Because of the so-called "parachute" tax imposed by Section 280G of the Code, we limit the change of control benefits of our named executive officers such that no taxes will be imposed under Section 280G. For our named executive officers, we have agreed that their severance benefits will be either (i) delivered in full, or (ii) delivered as to such lesser extent which would result in no portion of such severance benefits being subject to excise tax under Section 4999 of the Code, whichever of the foregoing amounts, taking into account the applicable federal, state and local income taxes and the excise tax imposed by Section 4999, results in the receipt by the named executive officer on an after-tax basis of the greatest amount of severance benefits, notwithstanding that all or some portion of such severance benefits may be taxable under Section 4999 of the Code.

Termination and Change of Control Benefits for our Named Executive Officers

We have entered into a Third Amended and Restated Change of Control and Severance Agreement (the "Amended Agreement") with each of our named executive officers.

The Amended Agreement provides that if the named executive officer's employment with the Company is terminated without Cause or by the named executive officer for Good Reason and the termination does not occur within three months before a Change of Control or 18 months after a Change of Control (as such terms are defined in the Amended Agreement) of the Company, the named executive officer will receive, subject to signing a release of claims in favor of the Company, (i) monthly severance payments equal to the monthly salary the named executive officer was receiving immediately prior to the termination date for 12 months, (ii) monthly severance payments equal to $1/12^{\text{th}}$ of the named executive officer's target bonus for the fiscal year in which the termination occurs for 12 months, (iii) an additional pro rata portion of the named executive officer was employed by the Company (and a prior fiscal year to the extent

the bonus for such prior fiscal year has not yet been declared and paid by the Company) multiplied by the average of the actual bonus percentage payouts in the two most recent years prior to the year of termination, (iv) up to 12 months of reimbursement for premiums paid for COBRA coverage, and (vi) any thenoutstanding and unvested equity awards held by the named executive officer are subject to 50% accelerated vesting.

The Amended Agreement also provides that if the named executive officer's employment with the Company is terminated by the Company without Cause or by the named executive officer for Good Reason within three months before a Change of Control or 18 months after a Change of Control, the named executive officer will receive, subject to signing a release of claims in favor of the Company, (i) monthly severance payments equal to the monthly salary the named executive officer was receiving immediately prior to the Change of Control for 18 months, (ii) monthly severance payments equal to $1/12^{\text{th}}$ of the named executive officer's target bonus for the fiscal year in which the termination occurs for 18 months, (iii) an additional pro rata portion of the named executive officer was employed by the Company (and a prior fiscal year to the extent the bonus for such prior fiscal year has not yet been declared and paid by the Company) multiplied by the average of the actual bonus percentage payouts in the two most recent years prior to the year of termination, and (iv) up to 18 months of reimbursement for premiums paid for COBRA coverage. The Amended Agreement also provides that if the named executive officer's employment is terminated without Cause or for Good Reason within three months before a Change of Control or 18 months after a Change of Control, all equity awards granted to the named executive officer by the Company will automatically vest in full and become immediately exercisable.

For purposes of the Amended Agreement, a "Change of Control" occurs when:

- any person becomes a beneficial owner, directly or indirectly, of securities of the Company representing 15% or more of the total voting power represented by the Company's then outstanding voting securities without the approval of the Board;
- a merger or consolidation occurs, whether or not approved by the Board, other than a merger or consolidation which results in the outstanding voting securities of the Company immediately prior to the merger or consolidation to represent more than 50% of the total voting power represented by the voting securities of the Company or such surviving entity outstanding immediately after such merger or consolidation;
- the stockholders of the Company approve a plan of complete liquidation of the Company or an agreement for the sale or disposition by the Company of all or substantially all of the Company's assets; or
- there is a change in the composition of the Board, as a result of which fewer than a majority of the directors are "Incumbent Directors." Incumbent Directors are directors who are either (i) directors of the Company as of May 1, 2018, or (ii) are elected, or nominated for election, to the Board with the affirmative votes of at least a majority of the Incumbent Directors at the time of such election or nomination. An individual whose election or nomination is in connection with an actual or threatened proxy contest relating to the election of the Company's directors is not considered an Incumbent Director.

Chief Executive Officer Pay Ratio

We identified our median employee by reviewing annual base salaries for all persons who were employed by us on December 31, 2019. We annualized the base salary of all employees who were hired in 2019 but did not work for the entire year. After identifying the median employee, we calculated the annual total compensation for this employee using the same methodology we use for our named executive officers as disclosed in the Summary Compensation Table for 2019 above. The annual total compensation of our median employee was \$130,369.

Mr. Amos was appointed to serve as the Company's Chief Executive Officer, effective April 30, 2018. We calculated the Chief Executive Officer pay ratio using Mr. Amos' compensation. Mr. Amos' annual total compensation for 2019 for purposes of this Chief Executive Officer pay ratio disclosure was \$873,894. Based on this information, for 2019, the ratio of the compensation of the Chief Executive Officer to the median employee was estimated to be 7:1. The above ratio, annual total compensation amount and annualized total compensation amount have been calculated using methodologies and assumptions permitted by SEC rules.

2019 Director Compensation

The following table sets forth the compensation paid by us for the fiscal year ended December 31, 2019 to our non-employee directors:

Name	Year	Fees Earned or Paid in Cash(\$)(1)	Stock Awards(\$)(2)	Option Awards(\$)(3)	All Other Compensation (\$)	Total(\$)
Karen Ferrell(4)(6)	2019	51,250		19,365		70,615
Edward A. Kangas(4)(6)	2019	51,958	—	19,365		71,323
Thomas B. King(4)(5)(6)	2019	53,333		19,365		72,698
David Y. Norton(4)(6)	2019	102,500	—	19,365		121,865
Jorge Plutzky, M.D.(4)(6)	2019	53,750		19,365		73,115
Eric W. Roberts(4)(6)	2019	70,000		—		70,000
Herman Rosenman(4)(6)	2019	76,250		19,365		95,615
Allan L. Shaw(4)(6)(7)	2019	46,563	—	—	—	46,563

- (1) Under the cash compensation arrangement approved by the Board on April 29, 2016, each non-employee director will receive an annual retainer of \$40,000, with the Chairman of the Board of Directors receiving an additional \$25,000 per year, the Chairman of the Audit Committee receiving an additional \$20,000 per year, the Chairman of the Compensation Committee receiving an additional \$15,000 per year, the Chairman of the Nominating and Governance Committee receiving an additional \$10,000 per year, members of the Audit Committee (other than the Chairman of such Committee) receiving an additional \$10,000 per year, members of the Compensation Committee (other than the Chairman of such Committee) receiving an additional \$7,500 per year, members of the Nominating and Governance Committee) receiving an additional \$7,500 per year, and members of any unchartered committees receiving an additional \$1,500 per meeting attended. The annual retainers, less any amounts previously paid under the then existing compensation arrangement, will be paid in equal quarterly installments effective as of October 30, 2015, and the per meeting fees for any unchartered committees will be paid quarterly effective as of April 29, 2016. In addition, under the changes to the cash compensation arrangement approved by the Board on January 2, 2018, certain non-employee directors will also receive the following: the Chairman of the Corporate Development Committee will receive an additional \$17,500 per year and members of the Corporate Development Committee will receive an additional \$17,500 per year.
- (2) As of December 31, 2019, there were no restricted stock units outstanding for our non-employee directors.
- (3) In February 2020, pursuant to our equity compensation arrangement for non-employee directors, our Compensation Committee approved annual stock option awards to our then-serving non-employee directors due to their re-election to the Board at the 2019 Annual Meeting of Stockholders; such annual stock option awards were awarded for the non-employee directors'



service to the Company in 2019. As of December 31, 2019, the aggregate number of stock options outstanding for each non-employee director was as follows:

Name	Stock options outstanding as of 12/31/19
Karen Ferrell	22,500
Edward A. Kangas	22,500
Thomas B. King	107,500
David Y. Norton	37,500
Jorge Plutzky, M.D.	37,500
Eric W. Roberts	31,250
Herman Rosenman	27,500
Allan L. Shaw	51,250

- (4) Messrs. Norton and Rosenman have served as directors of the Company since July 2013, Dr. Plutzky has served as a director of the Company since May 2013, Mr. King has served as a director of the Company since May 2017, and Ms. Ferrell and Mr. Kangas have served as directors of the Company since October 2018. Messrs. Roberts and Shaw served as directors of the Company from September 2015 to October 2019.
- (5) The disclosure in the footnotes to this table include stock option awards granted to Mr. King for his role as the Company's interim Chief Executive Officer. Mr. King has been on the Company's Board since May 24, 2017. Mr. King served as the Company's interim Chief Executive Officer from December 31, 2017 to April 30, 2018 and as the Company's interim President from April 30, 2018 to May 30, 2018; Mr. King did not participate in the Company's cash and equity compensation arrangement for non-employee directors during these periods.
- (6) From February 2018 to February 2019, the Audit Committee consisted of Messrs. Norton and Rosenman and Dr. Plutzky, with Mr. Rosenman designated as the Chairman of the Audit Committee. Since February 2019, the Audit Committee has consisted of Messrs. King, Norton and Rosenman and Ms. Ferrell, with Mr. Rosenman designated as the Chairman of the Audit Committee.

From January 2018 to February 2019, the Nominating and Governance Committee consisted of Messrs. Norton and Roberts, with Mr. Norton acting as the Chairman of the Nominating and Governance Committee from January 2017 to February 2018 and designated as the Chairman of the Nominating and Governance Committee from February 2018 to February 2019. From February 2019 to June 2019, the Nominating and Governance Committee. From June 2019 to October 2019, the Nominating and Governance Committee. From June 2019 to October 2019, the Nominating and Governance Committee. From June 2019 to October 2019, the Nominating and Governance Committee. From June 2019 to October 2019, the Nominating and Governance Committee. Since October 2019, the Nominating and Governance Committee has consisted of Ms. Ferrell and Messrs. Kangas and King, with Mr. King designated as the Chairman of the Nominatine Committee.

From February 23, 2018 to February 2019, the Compensation Committee consisted of Messrs. Norton, Roberts and Rosenman, with Mr. Norton designated as the Chairman of the Compensation Committee. Since February 2019, the Compensation Committee has consisted of Messrs. Kangas, Norton and Rosenman, with Mr. Norton designated as the Chairman of the Compensation Committee from February 2019 to June 2019 and Mr. Kangas designated as the Chairman of the Compensation Committee since June 2019.

Since becoming a chartered committee of the Board on January 2, 2018 to February 2019, the Corporate Development Committee consisted of Messrs. Norton, Roberts and Rosenman and Dr. Plutzky, with Mr. Roberts designated as the Chairman of the Corporate Development Committee. From February 2019 to October 2019, the Corporate Development Committee has

consisted of Messrs. King, Norton, Roberts, Rosenman and Shaw and Dr. Plutzky, with Mr. Roberts designated as the Chairman of the Corporate Development Committee. Since October 2019, the Corporate Development Committee has consisted of Messrs. King, Norton, Rosenman and Dr. Plutzky, with Mr. King designated as the Chairman of the Corporate Development Committee.

Mr. Norton has served as the Chairman of the Board of Directors since September 2014.

(7) The disclosure in the footnotes to this table include stock option awards granted to Mr. Shaw for his role as a consultant to the Company. On February 26, 2018, Mr. Shaw entered into a Consulting Agreement, effective February 1, 2018, with the Company. The Consulting Agreement remained in effect until June 30, 2018. Effective February 1, 2018, Mr. Shaw resigned from the Company's Audit Committee and Compensation Committee, and effective October 23, 2019, Mr. Shaw resigned from the Company's Board. From February 2019 to October 2019, Mr. Shaw served as a member of the Company's Corporate Development Committee.

Our cash and equity compensation arrangements for the Company's non-employee directors are summarized below.

Under the cash compensation arrangement, each non-employee director will receive an annual retainer of \$40,000, with the Chairman of the Board of Directors receiving an additional \$25,000 per year, the Chairman of the Audit Committee receiving an additional \$20,000 per year, the Chairman of the Compensation Committee receiving an additional \$15,000 per year, the Chairman of the Nominating and Governance Committee receiving an additional \$10,000 per year, members of the Audit Committee (other than the Chairman of such Committee) receiving an additional \$10,000 per year, members of the Compensation Committee (other than the Chairman of such Committee) receiving an additional \$7,500 per year, members of the Nominating and Governance Committee (other than the Chairman of such Committee) receiving an additional \$7,500 per year, members of the Nominating and Governance Committee (other than the Chairman of such Committee) receiving an additional \$7,500 per year, members of the Nominating and Governance Committee (other than the Chairman of such Committee) receiving an additional \$1,500 per year, members of any unchartered committees receiving an additional \$1,500 per meeting attended. The annual retainers, less any amounts previously paid under the then existing compensation arrangement, will be paid in equal quarterly installments effective as of October 30, 2015, and the per meeting fees for any unchartered committees will be paid quarterly effective as of April 29, 2016.

Under the equity compensation arrangement, following the initial appointment or election to the Board, each non-employee director will be granted as determined by the Compensation Committee of the Board (i) a non-qualified stock option to purchase 22,500 shares of Common Stock with an exercise price equal to the fair market value of our Common Stock as of the date of grant, or (ii) an equivalent number of restricted stock units to afford approximately the same value of (i), or (iii) a combination thereof (the "**Initial Grant**"). Initial Grants vest monthly over three (3) years on each monthly anniversary date commencing on the date service as a non-employee director began and will continue to vest, subject to each such non-employee director continuing to be a Service Provider (as defined in the 2018 Equity Incentive Plan) on the relevant vesting dates and, if stock options, have (i) a seven (7) year term and (ii) a six (6) month post-termination exercise period.

Thereafter, provided that the non-employee director is re-elected to the Board and has served as a director for at least six (6) months as of such election date, each such non-employee director will be granted on the date of the Annual Meeting of Stockholders as determined by the Compensation Committee of the Board (i) a non-qualified stock option to purchase 15,000 shares of Common Stock with an exercise price equal to the fair market value of our Common Stock as of the date of grant, or (ii) an equivalent number of restricted stock units to afford approximately the same value of (i), or (iii) a combination thereof (the "**Subsequent Grant**"). Subsequent Grants vest monthly over one (1) year following the date of grant, subject to each such non-employee director continuing to be a Service Provider on the relevant vesting dates and, if stock options, have (i) a seven (7) year term and (ii) a six (6) month post-termination exercise period.

On January 2, 2018, the Board approved changes to the cash compensation arrangement for the Board, such that certain non-employee directors will also receive the following: the Chairman of the Corporate Development Committee will receive an additional \$17,500 per year and members of the Corporate Development Committee (other than the Chairman of such Committee) will receive an additional \$8,750 per year.

Compensation Committee Interlocks and Insider Participation

None of our directors who served on our Compensation Committee during 2019 is currently or has been, at any time since our formation, one of our officers or employees. During 2019, no executive officer served as a member of the board of directors or compensation committee of any entity that has one or more executive officers serving on our Board or our Compensation Committee. The Compensation Committee currently consists of directors Kangas, Norton and Rosenman. None of the members of our Compensation Committee during 2019 currently has or has had any relationship or transaction requiring disclosure pursuant to Item 404 of Regulation S-K.

Compensation Committee Report

The information contained in this report shall not be deemed to be "soliciting material" or "filed" with the SEC or subject to the liabilities of Section 18 of the Securities Exchange Act of 1934, as amended, except to the extent that the Company specifically incorporates it by reference into a document filed under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended.

The Compensation Committee has reviewed and discussed the Compensation Discussion and Analysis with management. Based on this review and discussion, the Compensation Committee recommended to the Board of Directors that the Compensation Discussion and Analysis be included in this Amendment No. 1 to Annual Report on Form 10-K for the year ended December 31, 2019.

COMPENSATION COMMITTEE OF THE BOARD OF DIRECTORS

Edward A. Kangas, *Chairman* David Y. Norton Herman Rosenman

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Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

Equity Compensation Plan Information

Information about our equity compensation plans at December 31, 2019 that were approved by our stockholders was as follows:

Plan Category	Number of Shares to be issued Upon Exercise of Outstanding Options and Rights	1 1 1 01	Veighted Average Exercise Price of Itstanding Options	Number of Shares Remaining Available for Future Issuance(3)
Equity compensation plans approved by stockholders(1)	2,317,743	\$	21.76	1,395,402
Equity compensation plans not approved by stockholders(2)	429,500	\$	3.70	
Total	2,747,243	\$	18.93	1,395,402

(1) Consists of four plans: our 2001 Stock Option Plan, our 2010 Equity Incentive Plan, our 2018 Equity Incentive Plan and our 1994 Employee Stock Purchase Plan.

(2) Consists of our 2018 Inducement Equity Incentive Plan.

(3) Includes 997,075 shares for our 2018 Equity Incentive Plan and 398,327 shares for our 1994 Employee Stock Purchase Plan.

SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

The following table sets forth certain information known to us with respect to beneficial ownership of our Common Stock as of April 15, 2020 by (i) each person or entity who is known by us to own beneficially more than 5% of our Common Stock; (ii) each of our directors; (iii) each of our named executive officers, as specified in the "Compensation Discussion and Analysis" section of this Amendment; and (iv) all directors and executive officers as a group. Unless otherwise noted, the address of the persons or entities shown in the table is 900 E. Hamilton Avenue, Suite 550, Campbell, California, 95008.

	Beneficially Owned Stock(1)	
Name	Number of Shares	Percent
5% Holders		
Sabby Management, LLC(2)	1,781,250	9.97%
Steven Chlavin(3)	1,025,000	5.7%
Non-Employee Directors		
Karen Ferrell(4)	26,875	*
Edward A. Kangas(5)	26,875	*
Thomas B. King(6)	110,834	*
David Y. Norton(7)	52,500	*
Jorge Plutzky, M.D.(8)	57,839	*
Herman Rosenman(9)	60,357	*
Named Executive Officers		
John P. Amos(10)	456,808	2.6%
Mark K. Oki(11)	105,016	*
John L. Slebir(12)	205,993	1.2%
Santosh T. Varghese, M.D.(13)	164,554	*
Kenneth Suh(14)	384,475	2.2%
M. Scott Oehrlein(15)	92,026	*
All directors and executive officers as a group (12 persons)(16)	1,744,153	9.8%

* Less than 1%

- (1) Applicable percentage ownership is based on 17,867,697 shares of Common Stock outstanding as of April 15, 2020. Beneficial ownership is determined in accordance with SEC rules. In computing the number of shares beneficially owned by a person and the percentage of ownership of that person, shares of Common Stock subject to options, restricted stock units and warrants held by that person that will be exercisable/vested within 60 days of April 15, 2020 are deemed outstanding. Those shares, however, are not deemed outstanding for the purpose of computing the percentage ownership of any other person. The persons named in this table have sole voting and investment power with respect to all shares of Common Stock shown as beneficially owned by them, subject to community property laws, where applicable, and except as indicated in the other footnotes to this table.
- (2) Beneficial ownership information is based on a Schedule 13G filed with the SEC on April 1, 2020. Sabby Management, LLC and its affiliates (the "Sabby Management Entities") report that Sabby Management, LLC, Sabby Volatility Warrant Master Fund, Ltd. (the "Master Fund") and Hal Mintz beneficially own, and have shared voting and dispositive power over, an aggregate of 1,781,250 shares of Common Stock. The Sabby Management Entities further report that (a) Sabby Management, LLC, a Delaware limited liability company, and Mr. Mintz do not directly own any shares of Common Stock, but each indirectly owns 1,781,250 shares of Common Stock, (b) Sabby Management, LLC indirectly owns 1,781,250 shares of Common Stock because it serves

as the investment manager of the Master Fund, a Cayman Islands company, and (c) Mr. Mintz indirectly owns 1,781,250 shares of Common Stock in his capacity as manager of Sabby Management, LLC. The address of the Master Fund is 89 Nexus Way, Camana Bay, Grand Cayman KY1-9007, Cayman Islands, the address of Sabby Management, LLC is 10 Mountainview Road, Suite 205, Upper Saddle River, New Jersey 07458 and the address of Mr. Mintz is c/o Sabby Management, LLC, 10 Mountainview Road, Suite 205, Upper Saddle River, New Jersey 07458.

- (3) Beneficial ownership information is based on a Schedule 13G filed with the SEC on February 4, 2020. Mr. Chlavin reports that he beneficially owns, and has sole voting and dispositive power over, 1,025,000 shares of Common Stock. The address of Steven Chlavin is 9663 Santa Monica Blvd., Suite 214, Beverly Hills, California, 90210.
- (4) Consists of 26,875 options to purchase shares of Common Stock exercisable within 60 days of April 15, 2020.
- (5) Consists of 26,875 options to purchase shares of Common Stock exercisable within 60 days of April 15, 2020.
- (6) Consists of 110,834 options to purchase shares of Common Stock exercisable within 60 days of April 15, 2020.
- (7) Consists of 52,500 options to purchase shares of Common Stock exercisable within 60 days of April 15, 2020.
- (8) Consists of (i) 5,339 shares of Common Stock and (ii) 52,500 options to purchase shares of Common Stock exercisable within 60 days of April 15, 2020.
- (9) Consists of (i) 12,357 shares of Common Stock, (ii) 500 shares of Common Stock Mr. Rosenman is deemed to beneficially own that are held in an Individual Retirement Account for the benefit of Mr. Rosenman, (iii) 5,000 shares of Common Stock Mr. Rosenman is deemed to beneficially own that are held by his spouse, and (iv) 42,500 options to purchase shares of Common Stock exercisable within 60 days of April 15, 2020.
- (10) Consists of (i) 170,850 shares of Common Stock, (ii) 186,458 options to purchase shares of Common Stock exercisable within 60 days of April 15, 2020, and (iii) 99,500 warrants to purchase shares of Common Stock exercisable within 60 days of April 15, 2020.
- (11) Consists of (i) 10,000 shares of Common Stock and (ii) 95,016 options to purchase shares of Common Stock exercisable within 60 days of April 15, 2020.
- (12) Consists of (i) 13,209 shares of Common Stock and (ii) 192,784 options to purchase shares of Common Stock exercisable within 60 days of April 15, 2020.
- (13) Consists of (i) 8,869 shares of Common Stock and (ii) 155,685 options to purchase shares of Common Stock exercisable within 60 days of April 15, 2020.
- (14) Consists of (i) 169,375 options to purchase shares of Common Stock exercisable within 60 days of April 15, 2020, and (ii) 215,100 warrants to purchase shares of Common Stock exercisable within 60 days of April 15, 2020.
- (15) Consists of (i) 68,126 options to purchase shares of Common Stock exercisable within 60 days of April 15, 2020, and (ii) 23,900 warrants to purchase shares of Common Stock exercisable within 60 days of April 15, 2020.
- (16) Includes (i) 1,179,528 options to purchase shares of Common Stock exercisable within 60 days of April 15, 2020 and (iii) 338,500 warrants to purchase shares of Common Stock exercisable within 60 days of April 15, 2020.

Item 13. Certain Relationships and Related Transactions, and Director Independence

Change of Control Agreements with Executive Officers

In April 2018, we entered into the Third Amended and Restated Change of Control and Severance Agreement (the "**Amended Agreement**") with each of John P. Amos, M. Scott Oehrlein, Mark K. Oki, John L. Slebir, and Santosh T. Varghese, M.D. In April 2018, our wholly own subsidiary, Willow Biopharma Inc., entered into a Change of Control and Severance Agreement with Mr. Suh. In August 2018, we entered into the Amended Agreement with Mr. Suh, on substantially the same terms as the Amended Agreement entered into with each of our other executive officers. The Amended Agreement superseded the Change of Control and Severance Agreement Mr. Suh previously entered into with Willow Biopharma Inc.

Messrs. Oehrlein and Suh's employment with the Company terminated, effective October 31, 2019. For a description of the termination benefits received by Messrs. Oehrlein and Suh, please see the section entitled "Potential Payments Upon Termination or Change of Control for each Named Executive Officer" found elsewhere in this Amendment.

The above referenced agreements recognize that there may be periods where another company, entity or individual considers the possibility of acquiring the Company or that a change in our Board may otherwise occur (collectively known as a Change of Control), with or without the approval of our Board. These agreements recognize that such an event may cause a distraction to employees, which may in turn cause employees to consider alternative employment opportunities. The Board determined that it was in the best interest of the Company to give such employees an incentive to continue their employment during periods when the threat or occurrence of a Change of Control may exist. The Amended Agreement is discussed in more detail in the section entitled "Potential Payments Upon Termination or Change of Control for each Named Executive Officer" found elsewhere in this Amendment.

Indemnification Agreements

We have entered into indemnification agreements with each of our directors and executive officers. These agreements require us to indemnify such individuals, to the fullest extent permitted by Delaware law, for certain liabilities to which they may become subject as a result of their affiliation with us.

Consulting Agreement and Stock Purchase Agreement

On February 26, 2018, the Company and Allan L. Shaw entered into the Consulting Agreement, effective February 1, 2018. Mr. Shaw served as a member of the Company's Board from September 15, 2015 to October 23, 2019. Effective February 1, 2018, Mr. Shaw resigned from the Company's Audit Committee and Compensation Committee, and effective October 23, 2019, Mr. Shaw resigned from the Company's Board. From February 2019 to October 2019, Mr. Shaw served as a member of the Company's Corporate Development Committee. Under the Consulting Agreement, Mr. Shaw provided services to the Company relating to new commercial product candidates, the outstanding debt balances of the Company and other strategic partnering opportunities and capital structure matters. The Consulting Agreement remained in effect until June 30, 2018. Under the Consulting Agreement, Mr. Shaw received an initial payment of \$60,000 for the month of February 2018 and then \$30,000 per month starting in the month of March 2018, with any partial months being paid on a pro rata basis. Mr. Shaw was also eligible to receive cash bonuses based on certain factors related to the Company, with total cash bonuses not to exceed \$250,000. No cash bonuses were paid under the Consulting Agreement.

The Consulting Agreement included that the Company would recommend at the next meeting of the Compensation Committee of the Board that Mr. Shaw be granted a stock option to purchase

30,000 shares of our Common Stock at a price per share equal to the fair market value as determined by the closing price of our Common Stock on the date of grant. On March 9, 2018, the Compensation Committee of the Board authorized and approved the grant to Mr. Shaw of a stock option to purchase 30,000 shares of our Common Stock at a price per share equal to the closing price of our Common Stock on the date of grant (\$4.90 per share). Subject to Mr. Shaw continuing to provide services under the Consulting Agreement on the relevant vesting dates, the option will vest as follows: (i) 5,000 shares subject to the option will vest on June 30, 2018, (iii) 10,000 shares subject to the option will vest on December 31, 2018 and (iv) 10,000 shares subject to the option will vest on June 30, 2019. Given that the Consulting Agreement with Mr. Shaw remained in effect until June 30, 2018, the shares described above under (i) and (ii) vested, and the shares described above under (iii) and (iv) were cancelled. The option has a seven (7) year term from the date of grant and an exercise period equal to six (6) months from the date Mr. Shaw ceases to be a Service Provider (as defined in the Company's 2010 Equity Incentive Plan).

In addition, Mr. Shaw was eligible to receive an additional fully vested stock option to purchase 10,000 shares of our Common Stock at the discretion of the Board. On June 15, 2018, the Compensation Committee of the Board authorized and approved the grant to Mr. Shaw of a fully vested stock option to purchase 10,000 shares of our Common Stock at a price per share equal to the closing price of our Common Stock on the date of grant (\$8.40 per share). The option has a seven (7) year term from the date of grant and an exercise period equal to six (6) months from the date Mr. Shaw ceases to be a Service Provider (as defined in the Company's 2010 Equity Incentive Plan).

On April 30, 2018, the Company, Willow Biopharma Inc. ("**Willow**") and the shareholders of Willow, including Mr. Amos, Mr. Oehrlein and Mr. Suh (the "**Willow Sellers**"), entered into a stock purchase agreement (the "**Stock Purchase Agreement**"). Pursuant to the Stock Purchase Agreement, the Company agreed to acquire all of the equity interest of Willow (the "**Willow Acquisition**"). Under the Stock Purchase Agreement, the Company issued to the Willow Sellers, warrants (the "**Willow Warrants**") to purchase, in aggregate, up to 357,000 shares of our Common Stock (the "**Willow Warrant Shares**") with a per share exercise price of \$3.70, the closing price of our Common Stock on April 30, 2018. The Willow Warrants are immediately exercisable, subject to adjustment, and will expire seven years after the date of issuance. The Willow Acquisition closed on April 30, 2018. In 2018, the Company paid \$1,549,613 to the Willow Sellers for fees and reimbursements relating to the Willow Acquisition, including \$527,271 to Mr. Amos, \$202,218 to Mr. Oehrlein and \$505,300 to Mr. Suh in April 2018.

Other than the above mentioned agreements, we have not been a party to any transaction or series of similar transactions in which the amount involved exceeded or will exceed \$120,000 and in which any current director, executive officer, holder of more than 5% of our Common Stock or entities affiliated with them had or will have a material interest.

Review, Approval or Ratification of Transactions with Related Parties

We, or one of our subsidiaries, may occasionally enter into transactions with certain "related parties." Related parties include our executive officers, directors, or 5% or more beneficial owners of our Common Stock and immediate family members of these persons. We refer to transactions in which the related party has a direct or indirect material interest as "related party transactions." Each related party transaction must follow the procedures set forth in the Company's Code of Business Conduct and Ethics and be reviewed and approved by the Audit Committee prior to the entering into of such transaction.

The Audit Committee considers all relevant factors when determining whether to approve a related party transaction including, without limitation, the following:

the extent of the related party's interest in the related party transaction;

- the aggregate value of the related party transaction;
- the benefit to the Company; and
- whether the transaction involves the provision of goods or services to the Company that are available from unaffiliated third parties and whether the transaction is on terms and made under circumstances that are at least as favorable to the Company as would be available in comparable transactions with or involving unaffiliated third parties.

Director Independence

As required under Rule 5605 of the Nasdaq Listing Rules, a listed company's board of directors must affirmatively determine that a majority of its directors are "independent," as defined by such listing standards. That definition includes a series of objective factors, including that the director is not an employee of the company and has not engaged in various types of business dealings with the company. Additionally, the board of directors must make a subjective determination as to each director that no relationship exists that would interfere with the exercise of independent judgment in carrying out the responsibilities of a director. In addition, the Nasdaq Listing Rules require that, subject to specified exceptions, each member of a listed company's audit, compensation, and nominating and corporate governance committees be independent and that audit committee members also satisfy independence criteria set forth in Rule 10A-3 under the Exchange Act, as implemented in the Nasdaq Listing Rules.

Consistent with these requirements, our Board has determined that each of Karen Ferrell, Edward A. Kangas, Thomas B. King, David Y. Norton, Jorge Plutzky, M.D. and Herman Rosenman, which represent six of our seven directors, currently satisfies the director independence standards of the Nasdaq Listing Rules. Mr. King served as our interim Chief Executive Officer from December 31, 2017 to April 30, 2018 and as our interim President from April 30, 2018 to May 30, 2018. Mr. King's position as an interim executive officer during such periods does not disqualify him from being considered independent under the Nasdaq Listing Rules as of the date of this Amendment. Our Board has determined that John P. Amos, our Chief Executive Officer, is not independent by virtue of his employment with the Company. During fiscal year 2019, Eric W. Roberts and Allan L. Shaw served as directors on our Board until October 22, 2019 and October 23, 2019, respectively. Our Board determined that Mr. Roberts satisfied the director independence standards of the Nasdaq Listing Rules. Our Board determined that Mr. Shaw was not independent by virtue of his prior role as a consultant with the Company. In addition, our Board has determined that each member of the Audit, Compensation and Nominating and Governance Committees satisfies the applicable independence standards for members of each of such committees established by the SEC and the Nasdaq Listing Rules.

Item 14. Principal Accounting Fees and Services

Principal Accountant Fees and Services

The Audit Committee has engaged OUM & Co. LLP ("**OUM**") as our independent registered public accounting firm beginning with the fiscal year ended December 31, 2005. The following table presents fees for professional services rendered by OUM for the audit of our annual financial

statements for fiscal years 2019 and 2018 and fees billed for audit-related services, tax services and all other services rendered by OUM for these periods:

	2019	2018
Audit Fees(1)	\$ 580,761	\$ 566,460
Audit-Related Fees(2)	_	
Tax Fees(3)		
All Other Fees(4)		_
Total Fees	\$ 580,761	\$ 566,460

- (1) Audit Fees: This category consists of fees for the audit of our annual financial statements, review of the financial statements included in our quarterly reports on Form 10-Q and services that are normally provided by the independent auditors in connection with regulatory filings or engagements, and for attestation services related to Sarbanes-Oxley compliance for those fiscal years. This category also includes advice on audit and accounting matters that arose during, or as a result of, the audit or the review of interim financial statements.
- (2) Audit-Related Fees: There were no audit-related fees billed by OUM during these periods.
- (3) Tax Fees: There were no tax fees billed by OUM during these periods.
- (4) All Other Fees: There were no other fees billed by OUM during these periods.

Pre-Approval Policy and Procedures

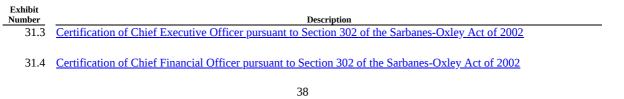
The Audit Committee reviews and pre-approves all audit and non-audit services that may be provided by OUM as well as the fees charged by OUM for such services. In its pre-approval and review of non-audit service fees, the Audit Committee considers, among other factors, the possible effect of the performance of such services on the auditors' independence. Pre-approval is generally provided for up to one year, and the Audit Committee may periodically revise the amount and/or list of services that have received class pre-approval as necessary. The Audit Committee has delegated the authority to grant pre-approvals to the Audit Committee Chairman when the full Audit Committee is unable to do so. Such pre-approvals are then reviewed by the full Audit Committee at its next regular meeting. In 2019, all audit services were pre-approved and reviewed in accordance with our policy; in 2019, there were no non-audit services.

PART IV

Item 15. Exhibits, Financial Statement Schedules

The documents identified in the Exhibit Index below are included as exhibits to, and filed with, this Amendment.

VIVUS, INC. AMENDMENT NO. 1 TO ANNUAL REPORT ON FORM 10-K FOR THE YEAR ENDED DECEMBER 31, 2019 EXHIBIT INDEX



SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Registrant has duly caused this Amendment to be signed on its behalf by the undersigned, thereunto duly authorized:

VIVUS, INC., a Delaware Corporation

By:

/s/ JOHN P. AMOS

John P. Amos Chief Executive Officer (Principal Executive Officer)

Date: April 29, 2020

CERTIFICATION OF CHIEF EXECUTIVE OFFICER PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, John P. Amos, Chief Executive Officer, certify that:

- 1. I have reviewed this Amendment No. 1 to Annual Report on Form 10-K of VIVUS, Inc. for the year ended December 31, 2019; and
- 2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report.

Date: April 29, 2020

By: /s/ JOHN P. AMOS

Name:John P. AmosTitle:Chief Executive Officer

QuickLinks

Exhibit 31.3

CERTIFICATION OF CHIEF EXECUTIVE OFFICER PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

CERTIFICATION OF CHIEF FINANCIAL OFFICER PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Mark K. Oki, Senior Vice President, Chief Financial Officer and Chief Accounting Officer, certify that:

- 1. I have reviewed this Amendment No. 1 to Annual Report on Form 10-K of VIVUS, Inc. for the year ended December 31, 2019; and
- 2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report.

Date: April 29, 2020

By: /s/ MARK K. OKI

Name:Mark K. OkiTitle:Senior Vice President, Chief Financial Officerand Chief Accounting Officer

QuickLinks

Exhibit 31.4

CERTIFICATION OF CHIEF FINANCIAL OFFICER PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002