

**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 of 1934.

For the fiscal year ended December 31, 2019.

Transition report pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934.

For the transition period from _____ to _____.

Commission File Number

001-35342

LUMOS PHARMA, INC.

(Exact name of Registrant as specified in Its Charter)

Delaware

42-1491350

(State or other jurisdiction of incorporation or organization)

(I.R.S. Employer Identification No.)

4200 Marathon Blvd., Suite 200

Austin, Texas 78756

(512) 215-2630

(Address, including zip code, and telephone number, including area code, of principal executive offices)

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, par value \$0.01	LUMO	The Nasdaq Stock Market
Securities registered pursuant to Section 12(g) of the Act:		None

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

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

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

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

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

Accelerated filer

Non-accelerated filer

Smaller reporting company

Emerging growth company

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

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

The aggregate market value of the common stock held by non-affiliates of the registrant based on the closing sale price of the registrant's common stock on June 28, 2019, as reported by the Nasdaq Global Market, was \$42,833,809. Shares of the registrant's common stock beneficially owned by each executive officer and director of the registrant and by each person known by the registrant to beneficially own 10% or more of its outstanding common stock have been excluded, in that such persons may be deemed to be affiliates. This determination of affiliate status is not necessarily conclusive.

As of April 27, 2020, there were 8,292,803 shares of the registrant's Common Stock, par value \$0.01 per share, outstanding.

EXPLANATORY NOTE

This Amendment No. 1 on Form 10-K/A (this “Amendment”) amends the Annual Report on Form 10-K of Lumos Pharma, Inc. (formerly known as NewLink Genetics Corporation, the “Company”) for the year ended December 31, 2019, originally filed with the U.S. Securities and Exchange Commission (“SEC”) on March 3, 2020 (the “Original Filing”).

This Amendment is being filed for the purpose of providing the information required by Items 10 through 14 of Part III of the Annual Report on Form 10-K. This information was previously omitted from the Original Filing in reliance on General Instruction G(3) to the Annual Report on Form 10-K, which permits the above-referenced Items to be incorporated in the Annual Report on Form 10-K by reference from a definitive proxy statement, if such definitive proxy statement is filed no later than 120 days after December 31, 2019. At this time, the Company is filing this Amendment to include Part III information in its Annual Report on Form 10-K because the Company no longer intends to file a definitive proxy statement within 120 days of December 31, 2019.

In accordance with Rule 12b-15 under the Securities Exchange Act of 1934, as amended (the “Exchange Act”), Items 10 through 14 of Part III of the Original Filing are hereby amended and restated in their entirety. In addition, pursuant to Rule 12b-15 under the Exchange Act, the Company is including Item 15 of Part IV of this Amendment, solely to file the certifications required under Section 302 of the Sarbanes-Oxley Act of 2002.

Except as described above or as otherwise expressly provided by the terms of this Amendment, no other changes have been made to the Original Filing. Except as otherwise indicated herein, this Amendment continues to speak as of the date of the Original Filing, and the Company has not updated the disclosures contained therein to reflect any events that occurred subsequent to the date of the Original Filing.

Note Regarding Our Recent Merger

On March 18, 2020, the Company, formerly known as NewLink Genetics Corporation, merged Cyclone Merger Sub, Inc., a wholly-owned subsidiary of ours, with what was then known as Lumos Pharma, Inc., and has since been renamed “Lumos Pharma Sub, Inc.” (“Private Lumos”), and changed the name “NewLink Genetics Corporation” to “Lumos Pharma, Inc.” (the “Merger”). Unless otherwise indicated, references to the “Company,” “we,” “us” or “our” refer to Lumos Pharma, Inc., formerly known as NewLink Genetics Corporation. References to “NewLink” refer to NewLink Genetics Corporation prior to the Merger.

Also on March 18, 2020, and prior to the effective time of the Merger (the “Effective Time”), the Company effected a 1-for-9 reverse stock split of its common stock (the “Reverse Stock Split”). Unless otherwise noted herein, all references to share amounts give effect to the Reverse Stock Split. Following the completion of the Merger, the business being conducted by the Company became primarily the business conducted by Private Lumos, which is a biopharmaceutical company focused on the identification, acquisition, in-license, development, and commercialization of novel products for the treatment of rare diseases. Private Lumos’ current pipeline is focused on the future development of an orally administered small molecule, the growth hormone secretagogue ibutamoren, for three rare endocrine disorders.

Immediately following the Reverse Stock Split and the completion of the Merger, there were 8,292,803 shares of the Company’s common stock outstanding. Under the terms of the Merger, Private Lumos stockholders received an aggregate of 4,146,398 shares of our common stock, at an exchange rate of (i) 0.1308319305 shares of common stock in exchange for each share of Private Lumos common stock outstanding immediately prior to the Merger, (ii) 0.0873621142 shares of our common stock in exchange for each share of Private Lumos Series A Preferred Stock outstanding immediately prior to the Merger, and (iii) 0.1996348626 shares of our common stock in exchange for each share of Private Lumos Series B Preferred Stock outstanding immediately prior to the Merger. Immediately following the Merger, the former Private Lumos stockholders beneficially owned approximately 50% of the shares of the Company and the former NewLink stockholders beneficially owned approximately 50% of the shares of the Company. For accounting purposes, Private Lumos is considered to have acquired NewLink in the Merger.

As part of the Merger, we also assumed 26,248 stock options issued and outstanding under the Lumos 2012 Equity Incentive Plan (as amended, the “Lumos 2012 EIP”), with a weighted-average exercise price of \$1.39 per share and 163,864 stock options issued and outstanding under the Lumos 2016 Stock Plan (the “Lumos 2016 Plan,” and together with the Lumos 2012 EIP, the “Lumos Plans”), with a weighted-average exercise price of \$3.66 per share. From and after the Effective Time, such options may be exercised for shares of our common stock.

Lumos Pharma, Inc.

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PART III

Item 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

Board of Directors

The following table identifies our current directors, their ages, their respective offices and positions, and their respective dates of election or appointment, in each case as of April 20, 2020.

Name	Class	Age	Position	Director Since	Current Term Expires
Richard J. Hawkins ⁽¹⁾	II	71	President, Chief Executive Officer and Chairman of the Board	2011	2020
Emmett T. Cunningham, Jr., M.D. ⁽¹⁾	I	58	Director	2016	2022
Chad A. Johnson	III	41	Director	2018	2021
Kevin Lalande ⁽¹⁾	I	47	Director	2016	2022
Joseph McCracken ⁽¹⁾	I	66	Director	2020	2022
Thomas A. Raffin, M.D.	II	73	Director	1999	2020
Lota S. Zoth	III	60	Director	2012	2021

⁽¹⁾ Appointed to our board of directors in March 2020 in connection with the Merger. If applicable, service on our board of directors prior to such appointment noted in the table above and in the narrative below includes service with Private Lumos.

Richard J. Hawkins has served as President and Chief Executive Officer and as a member of the board of directors of Private Lumos (the "Private Lumos Board") since January 2011. In addition, Mr. Hawkins currently serves on the board of directors of several life sciences companies, including Cytos Therapeutics, Inc. (Nasdaq: CYTX) and Savara Inc. (Nasdaq: SVRA), and previously served on the board of directors of SciClone Pharmaceuticals, Inc. until its acquisition in October 2017. From 2000 to 2010, Mr. Hawkins, founded and advised numerous pharmaceutical companies including Sensus, where he served as co-founder and Chairman until it was sold to Pfizer. From 1981 to 2000, Mr. Hawkins was founder, President and CEO of Pharmaco. The company later merged with PPD of Wilmington, NC to form PPD Pharmaco, one of the largest clinical contract research organizations in the world. Mr. Hawkins received his B.S. degree in biology from Ohio University. We believe that Mr. Hawkins's experience in the pharmaceutical and life sciences industries as well as his broad management experience qualify him to serve on our Board of Directors (the "Board").

Emmett T. Cunningham, Jr., M.D., Ph.D., has served as a board observer of the Private Lumos Board since 2016 and as a member of the Private Lumos Board since 2019. In addition, Dr. Cunningham is a Senior Managing Director in the Blackstone Life Sciences group, having joined Blackstone as part of its acquisition of Clarus in December of 2018. Dr. Cunningham joined Clarus in 2006 as a principal. Dr. Cunningham has led investments in the medical technology, and biotechnology space including partnerships with pharmaceutical companies. Prior to joining Clarus, Dr. Cunningham was the Senior Vice President, Medical Strategy at Eyetech Pharmaceuticals, Inc. where he led the team that developed Macugen, a first-in-class product for the treatment of age-related macular degeneration. Prior to Eyetech, Dr. Cunningham was at Pfizer, Inc. (NYSE: PFE) ("Pfizer"). Dr. Cunningham is an internationally recognized specialist in infectious and inflammatory eye disease with over 350 publications. In addition, Dr. Cunningham is a member of the boards of directors of Annexon Biosciences, Galera Therapeutics, Graybug Vision, and SFJ Pharmaceuticals Group, and serves on the Scientific Advisory Board of Aerie Pharmaceuticals (Nasdaq: AERI). Dr. Cunningham is the founder and chairman of the Ophthalmology Innovation Summit symposium held in conjunction with the annual meetings of the American Academy of Ophthalmology and the American Society of Cataract and Refractive Surgery. Dr. Cunningham received an M.D. and MPH in epidemiology and statistics from Johns Hopkins University and a Ph.D. in neuroscience from the University of California at San Diego for work done at The Salk Institute. We believe that Dr. Cunningham's experience in the pharmaceutical and life sciences industries, as well as his training as a physician, qualify him to serve on the Board.

Chad A. Johnson, J.D., has served as a member of the Board since March 2018. Mr. Johnson is currently General Counsel at Stine Seed Company. From May 2015 to April 2017, Mr. Johnson was the Assistant Corporate Secretary and Senior Corporate Counsel for Renewable Energy Group, Inc., a supplier of advanced biofuels in North America. In addition to his role as a corporate officer, Mr. Johnson was a senior in-house attorney for the company. From 2007 to April 2015, he spent eight years in roles of increasing responsibility at DuPont Pioneer, a subsidiary of DuPont and a global leading seed and agriculture biotechnology

company. Mr. Johnson is admitted to practice law in the State of Iowa and before the United States Patent and Trademark Office. Mr. Johnson graduated from Iowa State University with a Master of Science in Crop Production and Physiology and received his J.D. from Drake University Law School. We believe that Mr. Johnson's career at major biotechnology companies, service as a public company officer and experience overseeing various legal matters provides him with the background necessary for him to serve as a member of the Board.

Kevin Lalande has served as a member of the Private Lumos Board since 2014. Mr. Lalande is also a Co-Founder and Managing Director of Santé Ventures, a healthcare and life science venture capital firm founded in 2006 which currently manages \$380 million across three funds with 30 portfolio company investments. Mr. Lalande is also the Founder and Chief Investment Officer of Santé Capital, a systematic machine learning hedge fund that began trading capital in 2015 after three years of research and development. Mr. Lalande conceived the investment strategy, designed the original MindRank algorithms, and assembled a seasoned team to help drive this related line of business. Before Santé Ventures and Santé Capital, Mr. Lalande spent seven years as an investment professional with Austin Ventures, a prominent venture capital firm with \$4.0 billion under management. Prior to Austin Ventures, he was a management consultant with McKinsey & Company. Before McKinsey, he founded, built and sold three internet-based companies in the 1990s. Mr. Lalande received a B.S. in electrical & computer engineering with honors in 1996 from Brigham Young University and an MBA with highest distinction from the Harvard Business School in 2001, where he was both a Baker Scholar and a Siebel Scholar. We believe that Mr. Lalande's extensive experience as an investor and board member in pharmaceutical and life sciences companies and his knowledge gained from service on such boards qualify him to be a member of the Board.

Joseph S. McCracken has served as a member of our Board since March 2020. Dr. McCracken currently advises biopharmaceutical companies on the design and implementation of corporate strategy and business development initiatives. Dr. McCracken also serves on the board of Kindred Biosciences, Inc. (NASDAQ: KIN), as well as the boards of privately held Alkahest, Inc., Modalis Therapeutics, Inc., Regimmune Inc., and Neuropore Therapies, Inc. From July 2011 to September 2013, Dr. McCracken was Vice President and Global Head of Business Development & Licensing for Roche Pharma, a research-focused healthcare company, where he was responsible for Roche Pharma's global in-licensing and out-licensing activities. From October 2009 until July 2011, he was General Manager, Roche Pharma Japan & Asia Regional Head, Roche Partnering. Prior to joining Roche Pharma, Dr. McCracken held the position of Vice President, Business Development at Genentech for more than 9 years, and previously held similar positions at Aventis Pharma and Rhone-Poulenc Rorer. Dr. McCracken holds a B.S. in microbiology, a Master of Science in pharmacology and a Doctorate of Veterinary Medicine from The Ohio State University. We believe Dr. McCracken's extensive experience in the biotechnology and pharmaceutical industries qualifies him to serve on the Board.

Thomas A. Raffin, M.D., has served as a member of the Board since 1999 and has been the Board's Lead Independent Director since October 2010. Dr. Raffin has spent 30 years on the faculty at Stanford University School of Medicine, where he is the Colleen and Robert Haas Professor Emeritus of Medicine and Biomedical Ethics. Over the past two decades, Dr. Raffin has worked extensively in the healthcare and medical device business sectors and was an advisor to Cell Therapeutics Inc. from 1993 to 1997, Broncus Technologies from 1997 to 2004, iMedica from 1998 to 2002, and Inhale Technologies from 1998 to 2001. He co-founded Rigel Pharmaceuticals, a publicly traded company (Nasdaq: RIGL), in 1996. In 2001, he co-founded Telegraph Hill Partners, a San Francisco life sciences private equity firm as a General Partner. Dr. Raffin has been a director of the following Telegraph Hill Partners private portfolio companies: AngioScore, Inc., Confirma, Inc., Freedom Innovations, LDR Holding Corporation, PneumRx, Inc., Akoya BioSciences, Inc. and InvisALERT Solutions. Dr. Raffin received a B.A. from Stanford University and an M.D. from Stanford University School of Medicine and did his medical residency at the Peter Bent Brigham Hospital (now Brigham and Women's Hospital) in Boston, MA. We believe that Dr. Raffin's extensive medical and business background and experience provides important experience in business operations and medical technology for him to serve as a member of the Board.

Lota S. Zoth, CPA, has served as a member of the Board and Chair of the Audit Committee since November 2012. Ms. Zoth currently serves on the Board of Directors of Spark Therapeutics, Inc. (Nasdaq: ONCE), Zymeworks, Inc. and Inovio Pharmaceuticals, Inc. She also previously served on the Board of Directors for nonprofit Aeras from 2011 to 2018, Circassia Pharmaceuticals, PLC from 2015 to 2019, Hyperion Therapeutics, Inc. from 2008 to May 2015, Ikaria, Inc. from 2008 to 2014 and Orexigen Therapeutics, Inc. from 2012 to 2019. Prior to her board service, Ms. Zoth served as Chief Financial Officer of MedImmune, Inc. from 2004 through 2007, and as its Corporate Controller from 2002 to 2004. Prior to that, Ms. Zoth was a financial executive at several companies, including Sodexo Marriott Services, Inc., PSINet Inc., Marriott International, Inc. and PepsiCo, Inc. Ms. Zoth began her career as an auditor at Ernst & Young, LLP. Ms. Zoth received a BBA in accounting, summa cum laude, from Texas Tech University. We believe that Ms. Zoth's experience with the Company, as a director since 2012, brings continuity to the Board, and her extensive financial background and experience provides important experience in corporate finance, corporate management, and investor relations for her to serve as a member of the Board.

Independence of our Board of Directors

In determining independence, our Board considers the definition of "independent" set forth in the listing standards of the NASDAQ Stock Market, ("NASDAQ"), as well as other factors that contribute to effective oversight and decision-making by our Board. Our independence standards are set forth in our Corporate Governance Guidelines on our website at www.lumos-pharma.com in the "Investors & Media - Corporate Governance - Corporate Governance Guidelines" section. As required under the NASDAQ listing standards, a majority of the members of a listed company's board of directors must qualify as "independent," as affirmatively determined by our Board. Our Board consults with our counsel to ensure that our Board's determinations are consistent with relevant securities and other laws and regulations regarding the definition of "independent," including those set forth in pertinent listing standards of NASDAQ, as in effect from time to time.

Consistent with these considerations, after review of all relevant identified transactions or relationships between each director, or any of his or her family members and our Company, its senior management and its independent auditors, our Board has affirmatively determined that the following directors are independent directors within the meaning of the applicable NASDAQ listing standards: Dr. Cunningham, Mr. Johnson, Mr. Lalande, Dr. McCracken, Dr. Raffin and Ms. Zoth. In making its independence assessments, our Board found that none of these directors had a material or other disqualifying relationship with our Company.

Mr. Hawkins is not an independent director by virtue of his employment with our Company.

There are no family relationships between our directors and executive officers.

Board Leadership

Our Board is currently chaired by the President and Chief Executive Officer of our Company, Mr. Hawkins. Our Board has appointed Dr. Raffin as Lead Independent Director.

Our Company believes that combining the positions of Chief Executive Officer and Chairman of our Board, which we refer to as the Chairman, helps to ensure that our Board and management act with a common purpose. We believe combining the positions of Chief Executive Officer and Chairman is appropriate for a biopharmaceutical company focused on drug development in that it enhances our Board's focus on our progress on scientific research, clinical trials and commercialization as inputs to developing and implementing strategy. Our Company believes that combining the positions of Chief Executive Officer and Chairman provides a single, clear chain of command to execute our strategic initiatives and business plans related to drug development and commercialization. In addition, our Company believes that a combined Chief Executive Officer and Chairman is well-positioned to act as a bridge between management and our Board, facilitating the regular flow of information. Our Company also believes that it is advantageous to have a Chairman with an extensive history with and knowledge of our Company (as is the case with our Chief Executive Officer) as compared to a relatively less informed independent Chairman at this stage in our development.

Our Board appointed Dr. Raffin as the Lead Independent Director to help reinforce the independence of our Board as a whole. The position of Lead Independent Director has been structured to serve as an effective balance to a combined Chief Executive Officer and Chairman. The Lead Independent Director is empowered, among other duties and responsibilities, to develop, together with the Chief Executive Officer, the agenda for meetings of our Board, to develop, together with committee chairs, the agendas for meetings of committees, to preside over Board meetings in the absence of the officers and to oversee our Board's annual evaluation of the Chief Executive Officer's performance.

Role of Our Board Directors on Risk Oversight

One of our Board's key functions is informed oversight of our risk management process. Our Board does not have a standing risk management committee, but rather administers this oversight function directly through our Board as a whole, as well as through various Board standing committees that address risks inherent in their respective areas of oversight. In particular, while our Board is responsible for monitoring and assessing strategic risk exposure, our Audit Committee has the responsibility to consider and discuss the major financial risk exposures and the steps management has taken to monitor and control these exposures, including guidelines and policies to govern the process by which risk assessment and management is undertaken. Our Audit Committee also monitors compliance with legal and regulatory requirements with respect to SEC regulations and NASDAQ listing standards, in addition to oversight of the performance of our accounting and financial reporting processes. Our Nominating and Corporate Governance Committee monitors the effectiveness of the corporate governance guidelines, including whether they are successful in preventing illegal or improper liability-creating conduct. Our Compensation Committee assesses and monitors whether any compensation policies and programs have the potential to encourage excessive risk-taking. The entire Board and its

committees address risk management issues from time-to-time and meet at least annually with the employees responsible for risk management in the committees' respective areas of oversight. Both our Board as a whole and the various standing committees receive periodic reports from the employees responsible for risk management, as well as incidental reports as matters may arise. It is the responsibility of the committee chairs to report findings regarding material risk exposures to our Board as quickly as possible.

Meeting Attendance

Our Board met twenty times during the last fiscal year ended December 31, 2019. Our Audit Committee met five times during the 2019 fiscal year, our Compensation Committee met six times during the 2019 fiscal year, and our Nominating and Corporate Governance Committee met five times during the 2019 fiscal year. None of our incumbent directors attended fewer than 75% of the meetings of the Board or committee meetings of which he or she was a member.

It is our policy to encourage directors and nominees for director to attend the Annual Meeting. Four of our directors attended the 2019 Annual Meeting of Stockholders.

Committees of our Board of Directors

The following table sets forth the current membership of each of our Audit Committee, Compensation Committee and Nominating and Corporate Governance Committee:

Name	Audit	Compensation	Nominating and Corporate Governance
Emmett T. Cunningham, Jr., M.D.			X
Chad A. Johnson	X		Chair
Kevin Lalande		X	
Joseph McCracken	X		
Thomas A. Raffin, M.D.		Chair	X
Lota S. Zoth	Chair	X	

Each of the committees has authority to engage legal counsel or other experts or consultants, as it deems appropriate to carry out its responsibilities. Our Board has determined that, except as specifically described below, each current member of each committee meets the applicable NASDAQ rules and regulations regarding "independence" and that each member is free of any relationship that would impair his or her individual exercise of independent judgment with regard to the Company.

Below is a description of each committee of our Board.

Audit Committee

Our Audit Committee was established by our Board in accordance with Section 3(a)(58)(A) of the Securities Exchange Act of 1934, as amended, (the "Exchange Act"), to oversee our corporate accounting and financial reporting processes and audits of its financial statements. For this purpose, our Audit Committee performs several functions. Our Audit Committee evaluates the performance of and assesses the qualifications of the independent auditors; determines and approves the engagement of the independent auditors; determines whether to retain or terminate the existing independent auditors or to appoint and engage new independent auditors; reviews and approves the retention of the independent auditors to perform any proposed permissible non-audit services; monitors the rotation of partners of the independent auditors on our audit engagement team as required by law; confers with management and the independent auditors regarding the effectiveness of internal controls over financial reporting; establishes procedures, as required under applicable law, for the receipt, retention and treatment of complaints received by the Company regarding accounting, internal accounting controls or auditing matters and the confidential and anonymous submission by employees of concerns regarding questionable accounting or auditing matters; and meets to review our annual audited financial statements and quarterly financial statements with management and the independent auditor, including a review of our disclosures in our Annual Report on Form 10-K under the heading "Management's Discussion and Analysis of Financial Condition and Results of Operations."

Our Audit Committee is currently comprised of three directors: Ms. Zoth, Mr. Johnson and Dr. McCracken. Our Board has adopted a written Audit Committee charter that is available to stockholders on our website at www.lumos-pharma.com in the "Investors & Media - Corporate Governance" section.

Our Board reviews the NASDAQ listing standards definition of independence for Audit Committee members on an annual basis and has determined that each current member of our Audit Committee meets the independence requirement (as independence is currently defined in Rule 5605(c)(2)(A)(i) and (ii) of the NASDAQ listing standards).

Our Board has also determined that Ms. Zoth qualifies as an "audit committee financial expert," as defined in applicable SEC rules. Our Board made a qualitative assessment of Ms. Zoth's level of knowledge and experience based on a number of factors, including her formal education and her years of experience.

Compensation Committee

The Compensation Committee of our Board is currently comprised of three directors: Dr. Raffin, Mr. Lalande, and Ms. Zoth. All current members of our Compensation Committee are independent (as independence is currently defined in Rule 5605(d)(2) of the NASDAQ listing standards). Additionally, all current members of our Compensation Committee are "outside directors" for 162(m) purposes and non-employee directors under Rule 16b-3 of the Exchange Act. Our Board has adopted a written Compensation Committee charter that is available to stockholders on our website at www.newlinkgenetics.com in the "Investors & Media - Corporate Governance" section.

The purpose of our Compensation Committee is to discharge the responsibilities of our Board to oversee our compensation policies, plans and programs and to review and determine the compensation to be paid to our directors, executive officers and other senior management. The scope of authority and specific responsibilities of our Compensation Committee include:

- determining the compensation and other terms of employment of our executive officers and reviewing and approving corporate performance goals and objectives relevant to such compensation;
- evaluating and recommending to our Board the compensation plans and programs advisable for the Company, and evaluating and recommending the modification or termination of existing plans and programs;
- reviewing and approving the terms of any employment agreements, severance arrangements, change in control protections and any other compensatory arrangements for our executive officers;
- selecting, retaining and terminating compensation consultants to assist in its evaluation of executive and director compensation, including the sole authority to approve the consultant's reasonable fees and other retention terms; and
- reviewing and recommending to our Board the type and amount of compensation to be paid or awarded to members of our Board.

Nominating and Corporate Governance Committee

Our Nominating and Corporate Governance Committee of our Board is responsible for overseeing our corporate governance functions on behalf of our Board, making recommendations to our Board regarding corporate governance issues, identifying, reviewing and evaluating candidates to serve as directors of the Company consistent with criteria approved by our Board, reviewing and evaluating incumbent directors, recommending to our Board for selection candidates for election to our Board and making other recommendations to our Board regarding affairs relating to the directors of the Company, including director compensation.

Our Nominating and Corporate Governance Committee is currently comprised of three directors: Mr. Johnson, Dr. Cunningham and Dr. Raffin. All current members of our Nominating and Corporate Governance Committee are independent (as independence is currently defined in Rule 5605(a)(2) of the NASDAQ listing standards). Our Board has adopted a written Nominating and Corporate Governance Committee charter that is available to stockholders on our website at www.lumos-pharma.com in the "Investors & Media - Corporate Governance" section.

Our Nominating and Corporate Governance Committee believes that candidates for director should have certain minimum qualifications, including the ability to read and understand basic financial statements, being over 21 years of age and having the highest personal integrity and ethics. Our Nominating and Corporate Governance Committee also considers whether the candidate possesses the following factors among others: relevant expertise upon which to base advice and guidance to management, sufficient time to devote to the affairs of the Company, demonstrated excellence in his or her field, the ability to exercise sound business judgment and the commitment to rigorously represent the long-term interests of our stockholders. Candidates for director nominees are reviewed in the context of the current composition of our Board, the operating requirements of the Company and the long-term interests of stockholders. In conducting this assessment, our Nominating and Corporate Governance Committee typically

considers diversity, age, skills and such other factors as it deems appropriate given the current needs of our Board and the Company to maintain a balance of knowledge, experience and capability. Our Nominating and Corporate Governance Committee does not have a policy regarding how it considers diversity in selecting candidates.

In the case of incumbent directors whose terms of office are set to expire, our Nominating and Corporate Governance Committee reviews these directors' overall service to the Company during their terms, including the number of meetings attended, level of participation, quality of performance and any relationships and transactions that might impair the directors' independence. Our Nominating and Corporate Governance Committee also takes into account the results of our Board's self-evaluation, conducted annually on a group and individual basis. In the case of new director candidates, our Nominating and Corporate Governance Committee also determines whether the nominee is independent for NASDAQ purposes, which determination is based upon applicable NASDAQ listing standards, applicable SEC rules and regulations and the advice of counsel, if necessary. Our Nominating and Corporate Governance Committee then uses its network of contacts to compile a list of potential candidates, but may also engage, if it deems appropriate, a professional search firm. Our Nominating and Corporate Governance Committee conducts any appropriate and necessary inquiries into the backgrounds and qualifications of possible candidates after considering the function and needs of our Board. Our Nominating and Corporate Governance Committee meets to discuss and consider the candidates' qualifications and then selects a nominee for recommendation to our Board by majority vote. During 2015 and 2018, our Nominating and Corporate Governance Committee retained and paid a search firm to assist in the identification and evaluation of candidates for director.

In identifying potential candidates for Board membership, our Nominating and Corporate Governance Committee relies on suggestions and recommendations from our Board, stockholders, management and others. Our Nominating and Corporate Governance Committee will consider director candidates recommended by stockholders. Our Nominating and Corporate Governance Committee does not intend to alter the manner in which it evaluates candidates, including the minimum criteria set forth above based on whether or not the candidate was recommended by a stockholder.

Code of Business Conduct and Ethics

The Company has adopted its Code of Business Conduct and Ethics that applies to all officers, directors and employees. The Code of Business Conduct and Ethics is available on our website at www.lumos-pharma.com in the "Investors & Media - Corporate Governance" section. The Company amended the code of ethics in October 2015 and any future amendments or waivers to our code of ethics will be promptly disclosed on its website and as required by applicable laws, rules and regulations of the SEC and NASDAQ.

Corporate Governance Guidelines

Our Board adopted Corporate Governance Guidelines to assure that our Board will have the necessary authority and practices in place to review and evaluate our business operations as needed and to make decisions that are independent of our management. The guidelines are also intended to align the interests of directors and management with those of our stockholders. The Corporate Governance Guidelines set forth the practices our Board intends to follow with respect to board composition and selection, board meetings and involvement of senior management, Chief Executive Officer performance evaluation and succession planning and board committees and compensation. The Corporate Governance Guidelines, as well as the charters for each committee of our Board, may be viewed at www.lumos-pharma.com in the "Investors & Media - Corporate Governance" section.

DIRECTOR COMPENSATION

The following table shows certain information with respect to the compensation of all of our non-employee directors for the fiscal year ended December 31, 2019.

Name	Cash Compensation ⁽¹⁾	Option Awards (\$) ⁽²⁾ ⁽³⁾⁽⁴⁾	Total (\$)
Chad A. Johnson	\$64,000	\$30,379	\$94,379
Thomas A. Raffin, M.D.	\$106,000	\$30,379	\$136,379
Matthew L. Sherman, M.D.*	\$69,500	\$30,379	\$99,879
Ernest J. Talarico, III*	\$67,000	\$30,379	\$97,379
Lota S. Zoth	\$73,000	\$30,379	\$103,379

* Resigned as a member of our board of directors in March 2020 in connection with the closing of the Merger.

- (1) Cash compensation paid quarterly based on the annual amount of \$45,000 for all non-employee directors with additional annual cash compensation of \$27,000 for Lead Independent Director, \$18,000, \$18,000, \$15,500 and \$9,000 for the Chairs of the Audit, Science, Compensation and Nominating and Corporate Governance Committees, respectively; and \$12,000, \$10,000, \$10,000 and \$6,500 for members of the Audit, Compensation, Science and Nominating and Corporate Governance Committees, respectively.
- (2) The assumptions we used in valuing options are described under the caption "Share-Based Compensation" in note 2 to our financial statements included in our Annual Report on Form 10-K filed March 3, 2020. This column reflects compensation expense that would be recorded under FASB ASC topic 718 as stock-based compensation in our financial statements for the indicated year in connection with options we granted in the indicated year, disregarding the effects of any estimate of forfeitures related to service-based vesting.
- (3) The aggregate number of shares subject to stock option awards outstanding for each non-employee director as of December 31, 2019 are as follows after giving effect to the Reverse Stock Split:

	Option Awards
Chad A. Johnson	7,004
Thomas A. Raffin, M.D.	13,216
Ernest J. Talarico, III	11,142
Matthew L. Sherman, M.D.	7,844
Lota Zoth	8,101

- (4) Grant date fair value of 25,000 options granted in 2019 at an exercise price of \$1.69, which was the per share closing price of our common stock on the NASDAQ Global Market on the date of grant.

Non-Employee Director Compensation

The following compensation components are paid to our non-employee directors:

- Annual cash retainer fees;
- An equity grant upon initial election or appointment to our Board; and
- An annual equity grant.

Our non-employee director compensation program as in effect for the fiscal year ended December 31, 2019 is as described below. For a description of our compensation program in effect for prior years, please refer to the proxy statement for our 2019 Annual Meeting of stockholders. Under our program, each non-employee director was entitled to receive annual cash retainer fees in the amounts set forth below and were paid in cash quarterly on the first day of each quarter during their annual term commencing upon their election or re-election at each Annual Meeting of Stockholders. Such amounts were pro-rated for appointments made to our Board between our annual meetings.

Director Compensation	2019
Annual retainer fee payable to all non-employee directors	\$45,000
Additional annual retainer fee payable to the Lead Independent Director of our Board	\$27,000
Additional annual retainer fee payable to our Audit Committee Chair	\$18,000
Additional annual retainer fee payable to other Audit Committee members	\$12,000
Additional annual retainer fee payable to our Scientific Committee Chair	\$18,000
Additional annual retainer fee payable to our Compensation Committee Chair	\$15,500
Additional annual retainer fee payable to other Compensation Committee members	\$10,000
Additional annual retainer fee payable to our Nominating and Corporate Governance Committee Chair	\$9,000
Additional annual retainer fee payable to other Nominating and Corporate Governance Committee members	\$6,500

During 2019, upon election to our Board, each new non-employee director would have been eligible to receive an initial grant of stock options for a number of shares equal to \$250,000 divided by the per share grant date fair value that will be used for reporting compensation under applicable accounting guidance. Additionally, during the term of his or her service on our Board, each non-employee director receives an annual grant comprised of stock options for a number of shares equal to \$150,000 divided by the per share grant date fair value that will be used for reporting compensation under applicable accounting guidance. During 2019, we made such annual grants pursuant to our 2009 Plan since our 2010 Non-Employee Directors' Stock Award Plan did not

have sufficient shares to cover such grants and the Board elected to reduce the number of shares underlying the 2019 stock option grants to 25,000 total option awards for each non-employee director.

We also reimburse our directors, including our employee directors, for their reasonable expenses incurred in attending meetings of our Board and the committees of our Board. Other than reimbursement of any such reasonable expenses, our employee directors do not receive compensation for their service on our Board.

Director Stock Ownership Guidelines

Our stock ownership guidelines for non-employee directors anticipate that each director will, by December 31, 2019, hold shares of our common stock representing at least \$150,000 worth of common stock or 10,000 shares, whichever is less. At December 31, 2019, all of our then serving directors met the stock ownership guidelines or were making acceptable progress toward their required level. Following the closure of the Merger, these stock ownership guidelines were suspended by our Board after consideration of the practices of comparable companies in our industry.

Executive Officers

Our executive officers are appointed by and serve at the direction of our Board. The following table lists the names and positions of our current executive officers and directors:

Name	Age	Position(s)
Richard J. Hawkins ⁽¹⁾	71	President, Chief Executive Officer and Chairman
Carl W. Langren	64	Chief Financial Officer
Eugene P. Kennedy, M.D.	51	Chief Medical Officer
John McKew, Ph.D. ⁽¹⁾	55	Chief Operating Officer and Chief Scientific Officer
Bradley J. Powers	41	General Counsel
Lori D. Lawley	36	VP, Finance and Controller

(1) Appointed as an executive officer in March 2020 in connection with the Merger. Service as an executive officer prior to such appointment noted in such officers biography includes service with Private Lumos. For a brief biography of Mr. Hawkins, please see “Board of Directors” above.

Carl W. Langren has served as our Chief Financial Officer since July 2018. Previously, he was our Vice President of Finance since November 2011 and has also been Chief Financial Officer of our subsidiary BioProtection Systems Corporation since February 2005. Prior to NewLink, Mr. Langren previously served as Chief Financial Officer for each of Housby Mixer Group from 1998 to 2002 and Equity Dynamics, Inc. from 1988 to 1989. He also served as Principal in Capital Management Solutions, President of Iowa Machinery and Supply, Treasurer of DFM Corporation, and Tax Manager with McGladrey Pullen and Company. Mr. Langren received his B.A. degree from the University of Iowa.

Eugene P. Kennedy, M.D., FACS, has served as our Chief Medical Officer since November 2017, where he leads clinical development across all immunoncology product candidates as well as investigator initiated trials. From January 2014 to November 2017, Dr. Kennedy served as our Vice President for Clinical and Medical Affairs. Prior to joining NewLink, he was on faculty and clinical staff at Thomas Jefferson University in Philadelphia, Pennsylvania where he served as Associate Professor of Surgery and held leadership positions as Chief of the Section of Pancreaticobiliary Surgery and co-director of the Jefferson Pancreas, Biliary, and Related Cancers Center from January 2006 to December 2013. Previously, Dr. Kennedy held faculty positions at Johns Hopkins Hospital and the Louisiana State University School of Medicine. Dr. Kennedy obtained his undergraduate education at the University of Virginia and received his medical degree from the Medical College of Virginia. He completed a residency and fellowship in Surgery and Surgical Oncology as well as a research fellowship in tumor immunology at the Johns Hopkins Hospital.

John McKew, Ph.D., has served as the Chief Scientific Officer of Private Lumos since 2016 and as our Chief Scientific Officer and Chief Operating Officer since March 2020. From 2014 until 2016, Dr. McKew was V.P. of research for aTyr Pharma where he led research aimed at understanding and harnessing the therapeutic potential of tRNA synthetases. From 2010 until 2014, Dr. McKew worked for the NIH, during which time he served as a branch chief at the National Human Genome Research Institute Home (the “NHGRI”) from 2010 until 2013, and as the acting Scientific Director of the Division of Preclinical Innovation at the National Center for Advancing Translational Sciences (“NCATS”) from 2013 until 2014. His responsibilities included developing both the Therapeutics for Rare and Neglected Disease (“TRND”) and the Bridging Interventional Development Gaps (“BrIDGs”) programs. The department he led also included NCATS’s high throughput screening center and its Tox21 in vitro toxicology initiative. Before joining the NIH, Dr. McKew held a director level position at Wyeth Research in Cambridge, Massachusetts. Dr. McKew is also currently an Adjunct Associate Professor at the Boston University School of Medicine. Dr. McKew received a

B.S. degree in chemistry and biochemistry from State University of New York at Stony Brook, a Ph.D. in organic chemistry from the University of California, Davis, and held post-doctoral research positions at the University of Geneva and Firmenich, SA.

Bradley J. Powers has served as our General Counsel since August 2015. Prior to joining NewLink, Mr. Powers served as the General Counsel of Kinze Manufacturing, an agricultural equipment manufacturer in North America, since March 2013. Mr. Powers received a B.S. degree in biology and a M.S. degree in bioinformatics and computational biology from Iowa State University and a J.D. from Drake University Law School.

Lori D. Lawley has served as our Vice President - Finance and Controller and the principal accounting officer since July 2018. Previously, Ms. Lawley served as NewLink's Manager of SEC Reporting and Accounting Policy from April 2015 until January 2017, Director of SEC and Financial Reporting from January 2017 to November 2017 and Corporate Controller from November 2017 until July 2018. Prior to joining NewLink, Ms. Lawley worked as an auditor at Ernst and Young LLP where she served in increasing capacities from 2007 through April 2015, including as Manager from October 2011 to September 2014, and Senior Manager from October 2014 until April 2015. Ms. Lawley is a licensed certified public accountant. Ms. Lawley received her Bachelor of Business Administration and Master's in Professional Accounting from the University of Texas.

Family Relationships

There are no family relationships among any of our directors and executive officers, and there are no family relationships among any of the Company's directors and executive officers.

Item 11. EXECUTIVE COMPENSATION

The director compensation information provided in Item 10 of this Amendment is hereby incorporated by reference in this Item 11.

Summary Compensation Table

The following table sets forth information regarding compensation earned during the years ended December 31, 2019 and 2018, by the executive officers identified below, who are referred to in this Amendment as our "named executive officers".

Name and Principal Position	Year	Salary(\$)	Option Awards (\$)⁽¹⁾	Non-Equity Incentive Plan Compensation (\$)⁽²⁾	All Other Compensation (\$)⁽³⁾	Total (\$)
<i>Charles J. Link, Jr., M.D.*</i>	2019	365,483	1,064,009	220,521	70,234 ⁽⁴⁾	1,720,247
<i>Former Chief Executive & Scientific Officer</i>	2018	593,910	1,745,244	374,200	76,135 ⁽⁵⁾	2,789,489
<i>Nicholas N. Vahanian, M.D.*</i>	2019	406,778	239,648	133,877	439,000 ⁽⁶⁾	1,219,303
<i>Former President</i>	2018	495,002	712,173	180,915	24,126 ⁽⁷⁾	1,412,216
<i>Eugene P. Kennedy, M.D.</i>	2019	435,298	234,835	192,610	57,299	920,042
<i>Chief Medical Officer</i>	2018	425,000	589,073	170,000	24,640	1,208,713
<i>Carl W. Langren</i>	2019	368,192	234,835	163,020	54,467	820,514
<i>Chief Financial Officer</i>	2018	N/A	N/A	N/A	N/A	N/A
<i>Bradley J. Powers</i>	2019	336,346	100,613	151,800	45,365	634,124
<i>General Counsel and Former Principal Executive Officer</i>	2018	N/A	N/A	N/A	N/A	N/A

*Our former Chief Executive Officer and Chief Scientific Officer, Dr. Link, retired from his position as an executive and a member of our Board on August 3, 2019, and our former President, Dr. Vahanian, retired from his position as President and a member of our Board on September 27, 2019.

- (1) The assumptions we used in valuing options are described under the caption "Share-Based Compensation" in note 2 to our financial statements included in our Annual Report on Form 10-K filed March 3, 2020. This column reflects compensation expense that would be recorded under FASB ASC topic 718 as stock-based compensation in our financial statements for the indicated year in connection with options we granted in the indicated year, disregarding the effects of any estimate of forfeitures related to service-based vesting.
- (2) The amounts shown in this column represent the cash bonuses earned by the named executive officers with respect to the fiscal year under our performance-based cash bonus program. Amounts earned with respect to the fiscal year are generally paid in the first quarter following the close of the fiscal year.
- (3) Unless otherwise indicated, amounts in this column represent our contributions under our 401(k) plan.
- (4) Amount includes: (i) a \$39,000 contribution under our 401(k) plan; and (ii) \$31,234 in personal benefits received by Dr. Link that we reimbursed or paid on his behalf in 2019, including rent for an apartment near our Texas office.
- (5) Amount includes: (i) a \$24,035 contribution under our 401(k) plan; and (ii) \$52,100 in personal benefits received by Dr. Link that we reimbursed or paid on his behalf in 2018, including rent for an apartment near our Texas office.
- (6) Amount includes: (i) a \$39,000 contribution under our 401(k) plan; and (ii) \$400,000 supplemental payout in connection with his retirement.
- (7) Amount includes: (i) a \$22,615 contribution under our 401(k) plan; and (ii) \$1,511 in perquisites and personal benefits received by Dr. Vahanian that we reimbursed or paid on his behalf in 2018, including rent for an apartment near our Texas office.

Narrative Disclosure to Summary Compensation Table

Our executive compensation program consists of three primary components: base salary, short-term incentives, and long-term equity incentives.

Base Salary

Base salary is the primary fixed element of our executive compensation program. We use base salary to compensate our executive officers for services rendered during the fiscal year, and to ensure that we remain competitive in attracting and retaining executive talent.

Upon joining us, each of our executive officers, with the exception of Dr. Link, received an offer letter that provided for an initial base salary. These initial base salaries are the product of negotiation with the executive, but we generally seek to establish salaries that we believe are commensurate with the salaries paid to industry peers with comparable qualifications, experience, responsibilities and performance at similar companies. Our Compensation Committee has also relied on its members' collective experience in the marketplace for determining what they believe to be the market rate of salaries for executives of comparable companies.

Historically, we have not applied, nor do we intend to apply, specific formulas to determine base salary increases. Instead, we annually review corporate and individual performance. Our Compensation Committee examines numerous factors, including the executive's expertise, seniority, position, functional role, level of responsibility and individual performance during the previous year. Further, our Compensation Committee reviews peer and market data as provided by Radford.

Short-Term Cash Incentives

Our performance-based cash incentives are designed to provide executive officers with the opportunity to earn annual cash awards based upon the achievement of pre-specified corporate and individual performance objectives which align with and support the Company's business strategy.

Shortly before the end of each fiscal year, our Board determines the annual target bonus percentages for our executive officers for the upcoming fiscal year based on the recommendations of our Compensation Committee. Generally, each executive officer is eligible for a discretionary annual cash incentive payment up to a specified percentage of the executive officer's salary. Our Board sets these annual target bonus percentages at levels that, upon achievement of the target percentage, are likely to result in cash bonus payments that our Board believes to be approximately the level paid to high-performing executives of comparable companies in the biopharmaceutical industry.

For 2019, based upon recommendations of our Compensation Committee with the assistance of Radford, our Board maintained target bonus amounts for Dr. Link, Dr. Vahanian, and Dr. Kennedy equal to 70%, 50%, and 40% of their respective

base salaries. Our Board reserved the ability to grant bonuses in excess of the executives' target bonus percentages for extraordinary performance.

2019 Performance Objectives

The performance goals for each fiscal year are determined by the Board in the first quarter of each fiscal year, and typically include corporate and individual performance objectives which are tailored to each executive's role and responsibilities.

For 2019, the Company had the following corporate goals:

Metric	Weight	Exceeds	Meets Expectations (100%)	Partially Meets Expectations (50%)	Low (0%)
Pediatric brain tumors	30%	First patient in for Phase 2 trial	Obtain FDA feedback on development plan and execute in accordance with feedback	Complete Data Analysis and prepare FDA communication - Type B meeting request, possible Break Through Designation	Not Accomplished
NLG207 in Ovarian cancer	30%	Finalize plan for 207 drug supply	Develop Phase 2 protocol in refractory ovarian	Engage GOG or other KOLs for feedback and protocol design input	Not Accomplished
Evaluate external opportunities and execute on transactions that have the ability to transform NewLink's portfolio, provide the company with optionality and strategic diversification	20%	Complete merger and partner a candidate	Complete merger or terminate for cause and identify new target by the end of the year	Terminate merger negotiations for cause and do not identify a new target by the end of the year	Not Accomplished
Achieve use-of-cash targets per the operating plan, excluding the effects of new acquisitions or business development initiatives	20%	Extend cash runway of the company into 2022 by raising additional funds	Use <\$45M	>\$45M to <\$50M	>\$50M

At the end of the fiscal year, our Compensation Committee assesses the accomplishments of each executive versus each of the aforementioned goals and recommends earned bonus amounts to the Board for approval. The Compensation Committee retains the ability to apply negative discretion to adjust bonus amounts lower based on other corporate performance factors.

2019 Earned Bonuses

For 2019, the Compensation Committee took a two-tiered approach at determining the amount of earned bonus for each executive based on the current company conditions as well as actual performance. First, the Compensation Committee looked at the performance of each executive against each of their stated performance goals. Secondly, in light of current events and the refocus of the company as a whole, the Compensation Committee determined it to be in the best interests of the company and its stockholders to use the bonus earning as a retention device in efforts to retain key personnel. For 2019, the Compensation Committee determined that executives had achieved different percentages of their bonus objectives for 2019, and bonuses were paid accordingly.

Final bonus payouts for 2019 performance were as follows:

Executive	2019 Target Bonus			2019 Earned Bonus	
	% ⁽¹⁾	\$	%	% ⁽⁴⁾	\$
Charles J. Link, Jr., M.D.	70%	\$415,740	N/A ⁽²⁾	37%	\$220,521
Nicholas N. Vahanian, M.D.	40%	\$190,000	N/A ⁽²⁾	28%	\$133,877
Eugene P. Kennedy, M.D.	40%	\$175,100	110% ⁽³⁾	44%	\$192,610
Carl W. Langren	40%	\$148,200	110% ⁽³⁾	44%	\$163,020
Bradley J. Powers	40%	\$138,000	110% ⁽³⁾	44%	\$151,800

(1) Target bonus percentage represents a percentage of base salary.

- (2) Dr. Link and Dr. Vahanian each received a prorated bonus under the terms of their separation agreement.
- (3) Bonus awarded at 110% in consideration of the successful close of the merger.
- (4) Represents bonus percentage of target bonus actually awarded.

Long-Term Equity Compensation

Equity incentives represent the largest at-risk element of our executive compensation program. Our equity incentives are designed to align the interests of our executive officers with those of our stockholders by creating an incentive for our executive officers to maximize stockholder value and to remain employed with us despite a competitive labor market.

In 2019, target long-term incentive awards were delivered in the form of time-based stock options and performance-based stock options, weighted equally between the two award types. The Compensation Committee believes this vehicle mix further reinforces our pay for performance philosophy, as value is only provided to executives if shareholder value is created and important business milestones are met.

The awards had the following vesting and performance criteria:

Time-vesting Options - 50% of the option award vests and becomes exercisable in a series of 48 successive equal monthly installments.

Performance-based Options - The remaining 50% of the stock options vest and become exercisable as follows:

- a) 25% of such shares shall vest as to 8.34%, 8.33% and 8.33% on the 1st day of the month following an increase of closing share price on Nasdaq Stock Market by at least 33.33%, 66.66% and 100%, respectively, above the exercise price of the options when measured over 30 consecutive calendar days, provided such increase occurs within four years of the Date of Grant, otherwise such options shall be cancelled;
- b) 12.50% of such shares shall vest on the 1st day of the month following the expansion of the Company pipeline with an in-license, merger acquisition or the internal development of novel candidate;
- c) 12.50% of such shares shall vest on the 1st day of the month following enrollment of the first patient in a clinical trial that is registration eligible, the completion of each to be determined by the Board; and

2019 Equity Grants

On March 1, 2019, our Compensation Committee granted the following equity awards to our executives as follows (giving effect to the Reverse Stock Split):

Executive	Time-vesting Stock Options (#)	Performance-based Stock Options (#)
Charles J. Link, Jr., M.D.	27,777	27,777
Nicholas N. Vahanian, M.D.	10,277	10,277
Eugene P. Kennedy, M.D.	10,277	10,277
Carl W. Langren	10,277	10,277
Bradley J. Powers	4,444	4,444

Executive Stock Ownership Guidelines

In March 2017, we adopted stock ownership guidelines for our executive officers requiring each individual serving as an executive officer to maintain beneficial ownership of a dollar amount of shares of our common stock equal to three times base salary for our Chief Executive Officer, two times base salary for our President and one time base salary for other executive officers. For the purposes of determining stock ownership levels, the following forms of equity interests are included: shares owned by the executive officer directly or through a broker, or held in trust for the benefit of, the executive officer or his or her immediate family members; 50% of shares held as restricted stock; 50% of shares underlying restricted stock units; and 50% of the in-the-money value of vested stock options granted under our equity plans; and other stock or stock equivalent awards determined by the Compensation Committee. The applicable guidelines must be met within three years from the date he or she becomes subject to the stock ownership guidelines to achieve compliance. At December 31, 2019, all of our then serving executive officers met the stock ownership guidelines or were making acceptable progress toward their required level. Following the closing of the Merger, these stock ownership guidelines were suspended by our Board after consideration of the practices of comparable companies in our industry.

Anti-Hedging and Anti-Pledging Policies

We expressly prohibit our employees and directors from: (i) engaging in hedging transactions or (ii) pledging our stock as collateral.

Federal Tax Considerations

Section 162(m) of the Internal Revenue Code generally disallows public companies a tax deduction for federal income tax purposes of remuneration in excess of \$1 million paid to the chief executive officer and certain other highly compensated executive officers in any taxable year. For tax years beginning before January 1, 2018, remuneration in excess of \$1 million was deductible if it qualified as “performance-based compensation” within the meaning of Section 162(m) of the Internal Revenue Code. The exemption from Section 162(m)’s deduction limit for performance-based compensation has been repealed, effective for taxable years beginning after December 31, 2017, such that the compensation paid to our covered executive officers in excess of \$1 million will not be deductible unless it qualifies for transition relief applicable to certain arrangements in place as of November 2, 2017, that have not been subsequently materially modified. While our Compensation Committee is mindful of the benefit of being able to fully deduct the compensation paid to our named executive officers, our Compensation Committee believes that we should retain the flexibility to provide compensation to our named executive officers that is not fully tax deductible when it believes that such payments are appropriate to attract and retain executive talent or meet other business objectives. Our Compensation Committee intends to continue to compensate our named executive officers in a manner consistent with the best interests of our Company and our stockholders even if any portion of such compensation is non-deductible.

In addition to considering the tax consequences, the Compensation Committee considers the accounting consequences of its decisions, including the impact of expenses being recognized in connection with equity-based awards, in determining the size and form of different equity-based awards.

Accounting Considerations

We account for equity compensation paid to our employees in accordance with Accounting Standards Codification, or ASC, topic 718, which requires us to measure and recognize compensation expense in our financial statements for all share-based payments based upon an estimate of their fair value over the service period of the award. We record cash compensation as an expense at the time the obligation is incurred.

401(k) Plan

Our employees, including our executive officers, are eligible to participate in our 401(k) plan. Our 401(k) plan is intended to qualify as a tax qualified plan under Section 401 of the Code. Pursuant to the terms of our 401(k) plan, we provide a non-elective employer contribution of up to 3% of each participant's eligible compensation with an additional 2% discretionary contribution, or the Safe Harbor Contribution, with a possibility of additional discretionary contributions.

Other Benefits and Perquisites

We pay a portion of the premiums for medical insurance, dental insurance, life insurance and accidental death and dismemberment insurance benefits to all full-time employees, including our executive officers. These benefits are available to all employees, subject to applicable laws.

Our CEO and President also receive reimbursement or payment on their behalf for rent on an apartment near our Texas office.

Employment Agreements

We have entered into employment agreements with each of the named executive officers. The material terms of the agreements that were in effect during fiscal 2019 for the named executive officers are summarized below. Each of these agreements also contains severance and change of control provisions discussed under the heading "Potential Payments Upon Termination or Change in Control" beginning on page 17 of this Amendment.

Employment Agreement with Dr. Eugene Kennedy

Pursuant to the employment agreement between us and Dr. Kennedy dated September 30, 2019, Dr. Kennedy earns an annual base salary, which is subject to annual review and adjustment by our Board. For 2019, Dr. Kennedy earned an annual base salary of \$437,750. Dr. Kennedy is also eligible to receive an annual performance bonus based on his achievement of certain milestones and performance objectives. In 2019, Dr. Kennedy's target bonus was set at 40% of his annual base salary.

The employment agreement with Dr. Kennedy also provides that his employment with us is at-will and may be altered or terminated by either Dr. Kennedy or us at any time. However, if we terminate Dr. Kennedy's employment without just cause or if he resigns for good reason (other than in connection with a change in control of us), as long as Dr. Kennedy executes a general release in favor of us, he will be entitled to receive certain payments and other benefits, which are described in more detail under the heading "Potential Payments Upon Termination or Change in Control" beginning on page 17 of this Amendment.

The employment agreement with Dr. Kennedy further provides that if we (or any surviving or acquiring corporation) terminate Dr. Kennedy's employment without just cause or if he resigns for good reason within one month prior to or 13 months following the effective date of a change in control, as long as Dr. Kennedy executes a general release in favor of us (or any surviving or acquiring corporation), he will be entitled to receive certain payments and other benefits, which are described in more detail under the heading "Potential Payments Upon Termination or Change in Control" beginning on page 17 of this Amendment.

Employment Agreement with Carl W. Langren

Pursuant to the employment agreement between us and Mr. Langren dated September 30, 2019, Mr. Langren earns an annual base salary, which is subject to annual review and adjustment by our Board. For 2019, Mr. Langren earned an annual base salary of \$370,500. Mr. Langren is also eligible to receive an annual performance bonus based on his achievement of certain milestones and performance objectives. For 2019, Mr. Langren's target bonus was set at 40% of his annual base salary.

The employment agreement with Mr. Langren also provides that his employment with us is at-will and may be altered or terminated by either Mr. Langren or us at any time. However, if we terminate Mr. Langren's employment without just cause or if he resigns for good reason (other than in connection with a change in control of us), as long as Mr. Langren executes a general release in favor of us, he will be entitled to receive certain payments and other benefits, which are described in more detail under the heading "Potential Payments Upon Termination or Change in Control" beginning on page 17 of this Amendment.

The employment agreement with Mr. Langren further provides that if we (or any surviving or acquiring corporation) terminate Mr. Langren's employment without just cause or if he resigns for good reason within one month prior to or 13 months following the effective date of a change in control, as long as Mr. Langren executes a general release in favor of us (or any surviving or acquiring corporation), he will be entitled to receive certain payments and other benefits, which are described in more detail under the heading "Potential Payments Upon Termination or Change in Control" beginning on page 17 of this Amendment.

Employment Agreement with Bradley J. Powers

Pursuant to the employment agreement between us and Mr. Powers dated September 30, 2019, Mr. Powers earns an annual base salary, which is subject to annual review and adjustment by our Board. For 2019, Mr. Powers earned an annual base salary of \$345,000. Mr. Powers is also eligible to receive an annual performance bonus based on his achievement of certain milestones and performance objectives. For 2019, Mr. Powers' target bonus was set at 30% of his annual base salary.

The employment agreement with Mr. Powers also provides that his employment with us is at-will and may be altered or terminated by either Mr. Powers or us at any time. However, if we terminate Mr. Powers' employment without just cause or if he resigns for good reason (other than in connection with a change in control of us), as long as Mr. Powers executes a general release in favor of us, he will be entitled to receive certain payments and other benefits, which are described in more detail under the heading "Potential Payments Upon Termination or Change in Control" beginning on page 17 of this Amendment.

The employment agreement with Mr. Powers further provides that if we (or any surviving or acquiring corporation) terminate Mr. Powers' employment without just cause or if he resigns for good reason within one month prior to or 13 months following the effective date of a change in control, as long as Mr. Powers executes a general release in favor of us (or any surviving or acquiring corporation), he will be entitled to receive certain payments and other benefits, which are described in more detail under the heading "Potential Payments Upon Termination or Change in Control" beginning on page 17 of this Amendment.

Confidential Information and Inventions Agreement

Each of our named executive officers has entered into a form agreement with respect to confidential information and inventions. Among other things, this agreement obligates each named executive officer to refrain from disclosing any of our

confidential information received during the course of employment and, with some exceptions, to assign to us any inventions conceived or developed during the course of employment.

Each of our named executive officers entered into a new form of agreement with respect to confidential information and inventions on January 4, 2016. The terms of these new agreements did not materially change from those to which the executives were previously party.

Outstanding Equity Awards at December 31, 2019

The following table provides information about outstanding stock options and restricted stock units held by each of our named executive officers at December 31, 2019, after giving effect to the Reverse Stock Split. All of these options or restricted stock units were granted under our 2000 Equity Incentive Plan or our 2009 Plan, as amended.

Name	Number of Shares Underlying Unexercised Options(1)		Number of Shares Underlying Unvested Restricted Stock Units (3)	Option Grant Date	Option Exercise Price	Option Expiration Date
	(#) Exercisable	(#) Unexercisable (2)				
Charles J. Link, Jr., M.D.	9,259			3/1/2019	\$ 16.20	8/3/2021
	36,806			8/2/2019	\$ 15.39	8/3/2021
Nicholas N. Vahanian, M.D.	4,282	—		3/1/2019	\$ 16.20	11/11/2021
	1,773	—		7/31/2019	\$ 15.93	11/11/2021
	5,291	—		7/31/2019	\$ 15.93	11/11/2021
	11	—		7/31/2019	\$ 15.93	11/11/2021
	586	—		7/31/2019	\$ 15.93	11/11/2021
	794	—		7/31/2019	\$ 15.93	11/11/2021
	174	—		7/31/2019	\$ 15.93	11/11/2021
	45	—		7/31/2019	\$ 15.93	11/11/2021
	439	—		7/31/2019	\$ 15.93	11/11/2021
	1,080	—		7/31/2019	\$ 15.93	11/11/2021
	95	—		7/31/2019	\$ 15.93	11/11/2021
	1,254	—		7/31/2019	\$ 15.93	11/11/2021
	449	—		7/31/2019	\$ 15.93	11/11/2021
	1,014	—		7/31/2019	\$ 15.93	11/11/2021
	9,328	—		7/31/2019	\$ 15.93	11/11/2021
	1,085	—		7/31/2019	\$ 15.93	11/11/2021
1,085	—		7/31/2019	\$ 15.93	11/11/2021	
397	—		7/31/2019	\$ 15.93	11/11/2021	
1,085	—		7/31/2019	\$ 15.93	11/11/2021	
1,225	—		7/31/2019	\$ 15.93	11/11/2021	
2,713	—		7/31/2019	\$ 15.93	11/11/2021	
1,085	—		7/31/2019	\$ 15.93	11/11/2021	
1,493	—		7/31/2019	\$ 15.93	11/11/2021	
Eugene P. Kennedy, M.D.			122	1/4/2016	\$ 312.57	
	1,927	8,350		3/1/2019	\$ 16.20	3/1/2029
	—	1,712 (4)		3/1/2019	\$ 16.20	3/1/2029
	—	2,569 (5)		3/1/2019	\$ 16.20	3/1/2029
	—	1,714 (7)		3/1/2019	\$ 16.20	3/1/2029
	—	1,712 (8)		3/1/2019	\$ 16.20	3/1/2029
	—	2,569 (6)		3/1/2019	\$ 16.20	3/1/2029
	—	271 (9)		7/31/2019	\$ 15.93	7/31/2026
	—	26 (9)		7/31/2019	\$ 15.93	7/31/2026
	—	243 (9)		7/31/2019	\$ 15.93	7/31/2026
	—	737 (9)		7/31/2019	\$ 15.93	7/31/2026
	—	36 (9)		7/31/2019	\$ 15.93	7/31/2026
	—	8 (9)		7/31/2019	\$ 15.93	7/31/2026
	—	509 (9)		7/31/2019	\$ 15.93	7/31/2026

—	52	⁽⁹⁾	7/31/2019	\$	15.93	7/31/2026		
—	781	⁽⁹⁾	7/31/2019	\$	15.93	7/31/2026		
—	7	⁽⁹⁾	7/31/2019	\$	15.93	7/31/2026		
—	19	⁽⁹⁾	7/31/2019	\$	15.93	7/31/2026		
—	1,736	⁽⁹⁾	7/31/2019	\$	15.93	7/31/2026		
—	280	⁽⁹⁾	7/31/2019	\$	15.93	7/31/2026		
—	1,765	⁽⁹⁾	7/31/2019	\$	15.93	7/31/2026		
—	77	⁽⁹⁾	7/31/2019	\$	15.93	7/31/2026		
—	763	⁽⁹⁾	7/31/2019	\$	15.93	7/31/2026		
—	505	⁽⁹⁾	7/31/2019	\$	15.93	7/31/2026		
—	19	⁽⁹⁾	7/31/2019	\$	15.93	7/31/2026		
—	509	⁽⁹⁾	7/31/2019	\$	15.93	7/31/2026		
—	477	⁽⁹⁾	7/31/2019	\$	15.93	7/31/2026		
—	1,851	⁽⁹⁾	7/31/2019	\$	15.93	7/31/2026		
—	258	⁽⁹⁾	7/31/2019	\$	15.93	7/31/2026		
—	2,700	⁽⁹⁾	7/31/2019	\$	15.93	7/31/2026		
—	524	⁽⁹⁾	7/31/2019	\$	15.93	7/31/2026		
—	34	⁽⁹⁾	7/31/2019	\$	15.93	7/31/2026		
—	1,327	⁽⁹⁾	7/31/2019	\$	15.93	7/31/2026		
—	536	⁽⁹⁾	7/31/2019	\$	15.93	7/31/2026		
—	1,018	⁽⁹⁾	7/31/2019	\$	15.93	7/31/2026		
—	763	⁽⁹⁾	7/31/2019	\$	15.93	7/31/2026		
—	27	⁽⁹⁾	7/31/2019	\$	15.93	7/31/2026		
—	509	⁽⁹⁾	7/31/2019	\$	15.93	7/31/2026		
—	868	⁽⁹⁾	7/31/2019	\$	15.93	7/31/2026		
Carl W. Langren			87	1/4/2016	\$	312.57		
	1,927		8,350	3/1/2019	\$	16.20	3/1/2029	
—			1,712	⁽⁴⁾	3/1/2019	\$	16.20	3/1/2029
—			2,569	⁽⁷⁾	3/1/2019	\$	16.20	3/1/2029
—			1,714	⁽⁵⁾	3/1/2019	\$	16.20	3/1/2029
—			2,569	⁽⁸⁾	3/1/2019	\$	16.20	3/1/2029
—			1,712	⁽⁶⁾	3/1/2019	\$	16.20	3/1/2029
—			1,004	⁽⁹⁾	7/31/2019	\$	15.93	7/31/2026
—			541	⁽⁹⁾	7/31/2019	\$	15.93	7/31/2026
—			256	⁽⁹⁾	7/31/2019	\$	15.93	7/31/2026
—			31	⁽⁹⁾	7/31/2019	\$	15.93	7/31/2026
—			36	⁽⁹⁾	7/31/2019	\$	15.93	7/31/2026
—			254	⁽⁹⁾	7/31/2019	\$	15.93	7/31/2026
—			2,694	⁽⁹⁾	7/31/2019	\$	15.93	7/31/2026
—			132	⁽⁹⁾	7/31/2019	\$	15.93	7/31/2026
—			254	⁽⁹⁾	7/31/2019	\$	15.93	7/31/2026
—			1,273	⁽⁹⁾	7/31/2019	\$	15.93	7/31/2026
—			65	⁽⁹⁾	7/31/2019	\$	15.93	7/31/2026
—			608	⁽⁹⁾	7/31/2019	\$	15.93	7/31/2026
—			509	⁽⁹⁾	7/31/2019	\$	15.93	7/31/2026
—			382	⁽⁹⁾	7/31/2019	\$	15.93	7/31/2026
—			1,302	⁽⁹⁾	7/31/2019	\$	15.93	7/31/2026
—			36	⁽⁹⁾	7/31/2019	\$	15.93	7/31/2026
—			1,043	⁽⁹⁾	7/31/2019	\$	15.93	7/31/2026
—			387	⁽⁹⁾	7/31/2019	\$	15.93	7/31/2026
—			393	⁽⁹⁾	7/31/2019	\$	15.93	7/31/2026
—			225	⁽⁹⁾	7/31/2019	\$	15.93	7/31/2026
—			925	⁽⁹⁾	7/31/2019	\$	15.93	7/31/2026
—			382	⁽⁹⁾	7/31/2019	\$	15.93	7/31/2026

	—	245 ⁽⁹⁾	7/31/2019	\$ 15.93	7/31/2026
	—	254 ⁽⁹⁾	7/31/2019	\$ 15.93	7/31/2026
	—	477 ⁽⁹⁾	7/31/2019	\$ 15.93	7/31/2026
	—	347 ⁽⁹⁾	7/31/2019	\$ 15.93	7/31/2026
	—	1,588 ⁽⁹⁾	7/31/2019	\$ 15.93	7/31/2026
	—	535 ⁽⁹⁾	7/31/2019	\$ 15.93	7/31/2026
	—	318 ⁽⁹⁾	7/31/2019	\$ 15.93	7/31/2026
	—	182 ⁽⁹⁾	7/31/2019	\$ 15.93	7/31/2026
	—	30 ⁽⁹⁾	7/31/2019	\$ 15.93	7/31/2026
	—	743 ⁽⁹⁾	7/31/2019	\$ 15.93	7/31/2026
Bradley J. Powers	—	3,703	8/1/2018	\$ 28.53	8/1/2028
	1,851	—	8/1/2018	\$ 28.53	8/1/2028
	833	3,611	3/1/2019	\$ 16.20	3/1/2029
	—	740 ⁽⁴⁾	3/1/2019	\$ 16.20	3/1/2029
	—	740 ⁽⁵⁾	3/1/2019	\$ 16.20	3/1/2029
	—	1,111 ⁽⁷⁾	3/1/2019	\$ 16.20	3/1/2029
	—	741 ⁽⁶⁾	3/1/2019	\$ 16.20	3/1/2029
	—	1,111 ⁽⁸⁾	3/1/2019	\$ 16.20	3/1/2029
	—	16 ⁽⁹⁾	7/31/2019	\$ 15.93	7/31/2026
	—	219 ⁽⁹⁾	7/31/2019	\$ 15.93	7/31/2026
	—	37 ⁽⁹⁾	7/31/2019	\$ 15.93	7/31/2026
	—	14 ⁽⁹⁾	7/31/2019	\$ 15.93	7/31/2026
	—	94 ⁽⁹⁾	7/31/2019	\$ 15.93	7/31/2026
	—	11 ⁽⁹⁾	7/31/2019	\$ 15.93	7/31/2026
	—	258 ⁽⁹⁾	7/31/2019	\$ 15.93	7/31/2026
	—	11 ⁽⁹⁾	7/31/2019	\$ 15.93	7/31/2026
	—	95 ⁽⁹⁾	7/31/2019	\$ 15.93	7/31/2026
	—	254 ⁽⁹⁾	7/31/2019	\$ 15.93	7/31/2026
	—	57 ⁽⁹⁾	7/31/2019	\$ 15.93	7/31/2026
	—	46 ⁽⁹⁾	7/31/2019	\$ 15.93	7/31/2026
	—	4 ⁽⁹⁾	7/31/2019	\$ 15.93	7/31/2026
	—	277 ⁽⁹⁾	7/31/2019	\$ 15.93	7/31/2026
	—	62 ⁽⁹⁾	7/31/2019	\$ 15.93	7/31/2026
	—	421 ⁽⁹⁾	7/31/2019	\$ 15.93	7/31/2026
	—	11 ⁽⁹⁾	7/31/2019	\$ 15.93	7/31/2026

- (1) Unless otherwise indicated, these options have a 10-year term and vest in substantially equal monthly installments over a four-year period, subject to the recipient's continued employment with us through such vesting dates.
- (2) This column shows options that were unvested as of December 31, 2019.
- (3) Unless otherwise indicated, these restricted stock units vest annually over a four-year period, with 25% vesting on each of the first, second, third and fourth anniversaries, subject to the recipient's continued employment with us through such vesting dates.
- (4) These options will vest upon an increase of closing share price of the Company's common stock on the Nasdaq Stock Market by at least 33.33% above exercise price of the stock options, when measured over 30 consecutive calendar days (must occur within four years of the Date of Grant or such shares will be forfeited).
- (5) These options will vest upon an increase of closing share price of the Company's common stock on the Nasdaq Stock Market by at least 66.66% above exercise price of the stock options, when measured over 30 consecutive calendar days (must occur within four years of the Date of Grant or such shares will be forfeited).
- (6) These options will vest upon an increase of closing share price of the Company's common stock on the Nasdaq Stock Market by at least 100% above exercise price of the stock options, when measured over 30 consecutive calendar days (must occur within four years of the Date of Grant or such shares will be forfeited).
- (7) These options vested upon expansion of the Company pipeline with an in-license, merger, acquisition or the internal development of a novel candidate.
- (8) These options vest upon enrollment of the first patient in a clinical trial that is registration eligible.
- (9) These options were granted in connection with the forfeiture of previously held options under the stock option exchange program described in more detail and approved by stockholders at our 2019 Annual Meeting.

Potential Payments Upon Termination or Change in Control

Under our 2009 Plan, the vesting of stock options granted to our employees and officers may be accelerated in connection with specified corporate transactions and change in control transactions. Other than as set forth in the tables below, none of our other option grants provide for acceleration of vesting of any options in connection with such a transaction, except for certain options originally granted under our 2000 Equity Incentive Plan that may vest upon a change in control if the acquirer does not

assume outstanding option grants. In addition, under our 2010 Non-Employee Directors' Stock Award Plan, in the event of a change in control, 100% of the shares subject to each Director's options will vest.

Under the terms of employment agreements with certain of our named executive officers in effect as of December 31, 2019, if we terminate such named executive officer's employment for "cause" or such named executive officer resigns without "good reason," such named executive officer is entitled to the following: (i) any salary earned but unpaid prior to termination; (ii) any benefits accrued prior to termination; (iii) all accrued but unused vacation; and (iv) any business expenses that were incurred but not reimbursed as of the date of termination (collectively, the "Accrued Obligations"). Following such termination, vesting of such named executive officer's then outstanding stock options shall cease on the date of such termination.

Under the terms of employment agreements with such named executive officers, if we terminate such named executive officer's employment without cause or such named executive officer resigns with good reason (other than in connection with a change in control), and in each case such named executive officer signs a general release and written acknowledgment of his continuing obligations under his confidentiality and inventions assignment agreement with us, such named executive officer is entitled to the following: (i) payment of the Accrued Obligations; (ii) depending on the named executive officer and as described in the tables below, the equivalent of 12 or months of such named executive officer's base salary as in effect immediately prior to the termination date, payable on the same basis and at the same time as previously paid and subject to employment tax withholdings and deductions; (iii) for certain of the named executive officers and as described in the tables below, a bonus payout equal to the most recent annual bonus paid to the named executive officer or a portion thereof; (iv) depending on the named executive officer and as described in the tables below, payment of such named executive officer's COBRA premiums for 12 or 6 months to be paid in order for such named executive officer to maintain medical insurance coverage that is substantially equivalent to that which such named executive officer received immediately prior to the termination payment of premiums for his group health insurance and (v) 12 months accelerated vesting of such named executive officer's equity compensation awards (so such executive becomes vested in the portion of such awards that would have become vested if executive remained employed for 365 days after the termination date) and depending on the named executive officer and as described in the tables below, extension of the window to exercise such options for up to 12 months. In the event that such named executive officer breaches his confidentiality, non-compete or non-solicitation obligations under his confidentiality and inventions assignment agreement with us, the payments described above, except for the Accrued Obligations, shall cease, and we shall have no further obligations to such named executive officer with respect thereto. Our obligation to pay such named executive officer's COBRA premiums ceases upon such named executive officer's eligibility for comparable coverage provided by a new employer.

Under the terms of the employment agreements with the named executive officers in effect as of December 31, 2019, if we (or any surviving or acquiring corporation) terminate a named executive officer's employment without cause or a named executive officer resigns with good reason within one month prior to or 13 months following the effective date of a change in control (either constituting a "Change of Control Termination"), and in each case such named executive officer signs a general release and written acknowledgment of his continuing obligations under his confidentiality and inventions assignment agreement with us, such named executive officer is entitled to the following: (i) payment of the Accrued Obligations; (ii) depending on the named executive officer and as described in the tables below, the equivalent of 18, 12 or 9 months of such named executive officer's base salary as in effect immediately prior to the termination date, payable on the same basis and at the same time as previously paid and subject to employment tax withholdings and deductions; (iii) depending on the named executive officer and as described in the tables below, a bonus payout equal to one and one-half or one times the most recent annual cash bonus paid to the named executive officer; (iv) depending on the named executive officer as described in the tables below, payment of such named executive officer's COBRA premiums for 18, 12 or 6 months to be paid in order for such named executive officer to maintain medical insurance coverage that is substantially equivalent to that which such named executive officer received immediately prior to the termination payment of premiums for his group health insurance; and (v) we will vest 100% of the shares subject to such named executive officer's equity compensation awards and such vesting shall occur upon the occurrence of the change of control in the case of a Change of Control Termination occurring prior to the change in control or upon termination in the case of a Change of Control Termination occurring after the change of control. If a named executive officer breaches his confidentiality, non-compete or non-solicitation obligations under his confidentiality and inventions assignment agreement with us, the payments described above, except for the Accrued Obligations, shall cease, and we shall have no further obligations to such named executive officer with respect thereto. Our obligation to pay such named executive officer's COBRA premiums ceases upon such named executive officer's eligibility for comparable coverage provided by a new employer.

The following tables reflect the estimated potential payments that would be payable to each named executive officer, upon a termination or change in control of us under the terms of his employment agreement in effect as of December 31, 2019. The amounts shown below reflect only the additional payments or benefits that each named executive officer would have received upon the occurrence of the respective triggering events listed below, but they do not include the value of payments or benefits that would have been earned, or any amounts associated with equity awards that would have vested, absent the triggering event. For purposes of calculating the potential payments set forth in the tables below, we have assumed that (i) the date of termination was

December 31, 2019 and (ii) the stock price was \$2.53 (or \$22.77 after giving effect to the subsequent Reverse Stock Split), which was the per share closing price of our common stock on the NASDAQ Global Market on December 31, 2019.

Eugene P. Kennedy	Termination For Just Cause or Resignation Without Good Reason	Termination Without Just Cause or Resignation With Good Reason	Termination Without Just Cause or Resignation With Good Reason (in connection with a Change in Control)
Cash Payments			
Cash Severance	—	\$ 437,750 ⁽¹⁾	\$ 630,360 ⁽²⁾
Long-Term Incentives			
RSUs and Stock Options (Unvested and Accelerated)	—	75,137 ⁽³⁾⁽⁴⁾	269,519 ⁽³⁾⁽⁴⁾
Benefits and Perquisites			
Accrued Obligations	47,142 ⁽⁵⁾	47,142 ⁽⁵⁾	47,142 ⁽⁵⁾
Benefits Continuation	—	— ⁽⁶⁾	— ⁽⁶⁾
Total Payments Upon Termination	\$ 47,142	\$ 560,029	\$ 947,021

(1) Amount represents 12 months of his base salary in effect as of January 1, 2019.

(2) Amount represents 12 months of his base salary in effect as of January 1, 2019 and an amount equal to his most recent annual bonus.

(3) Amount represents the value of unvested restricted stock units (RSUs) as of December 31, 2019, using the value of our common stock on December 31, 2019. As per the terms of Dr. Kennedy's employment agreement, the unvested RSUs would accelerate and immediately vest under either a termination without just cause or resignation with good reason or a termination without just cause or resignation with good reason in connection with a change of control.

(4) Amount represents the in-the-money value of unvested stock options as of December 31, 2019, using the value of our common stock on December 31, 2019 based on the value of our common stock used for purposes of calculating compensation expense under FASB ASC topic 718. The number of shares underlying such stock options and the exercise price thereof are reflected in the Outstanding Equity Awards section of this Amendment.

(5) Amount represents \$47,142 in accrued vacation.

(6) Dr. Kennedy has voluntarily waived COBRA coverage.

	Termination For Just Cause or Resignation Without Good Reason	Termination Without Just Cause or Resignation With Good Reason	Termination Without Just Cause or Resignation With Good Reason (in connection with a Change in Control)
Carl W. Langren			
Cash Payments			
Cash Severance	—	\$ 370,500 ⁽¹⁾	\$ 800,280 ⁽²⁾
Long-Term Incentives			
RSUs and Stock Options (Unvested and Accelerated)	—	66,320 ⁽³⁾⁽⁴⁾	256,491 ⁽³⁾⁽⁴⁾
Benefits and Perquisites			
Accrued Obligations	79,800 ⁽⁵⁾	79,800 ⁽⁵⁾	79,800 ⁽⁵⁾
Benefits Continuation	—	17,046 ⁽⁶⁾	25,569 ⁽⁷⁾
Total Payments Upon Termination	\$ 79,800	\$ 533,666	1,162,140

(1) Amount represents 12 months of his base salary in effect as of January 1, 2019.

(2) Amount represents 18 months of his base salary in effect as of January 1, 2019 and an amount equal to 1.5 times his most recent annual bonus.

(3) Amount represents the value of unvested restricted stock units (RSUs) as of December 31, 2019, using the value of our common stock on December 31, 2019. As per the terms of Mr. Langren's employment agreement, a portion of the unvested RSUs would accelerate and immediately vest under either a termination without just cause or resignation with good reason or a termination without just cause or resignation with good reason in connection with a change of control.

(4) Amount represents the in-the-money value of unvested stock options as of December 31, 2019, using the value of our common stock on December 31, 2019 based on the value of our common stock used for purposes of calculating compensation expense under FASB ASC topic 718. The number of shares underlying such stock options and the exercise price thereof are reflected in the Outstanding Equity Awards section of this Amendment.

(5) Amount represents \$79,800 in accrued vacation.

(6) Amount represents 12 months of COBRA premiums.

(7) Amount represents 18 months of COBRA premiums.

	Termination For Just Cause or Resignation Without Good Reason	Termination Without Just Cause or Resignation With Good Reason	Termination Without Just Cause or Resignation With Good Reason (in connection with a Change in Control)
Bradley J. Powers			
Cash Payments			
Cash Severance	—	\$ 345,000 ⁽¹⁾	\$ 496,800 ⁽²⁾
Long-Term Incentives			
RSUs and Stock Options (Unvested and Accelerated)	—	17,499 ⁽³⁾	71,374 ⁽³⁾
Benefits and Perquisites			
Accrued Obligations	37,154 ⁽⁴⁾	37,154 ⁽⁴⁾	37,154 ⁽⁴⁾
Benefits Continuation	—	25,404 ⁽⁵⁾	25,404 ⁽⁵⁾
Total Payments Upon Termination	\$ 37,154	\$ 425,057	\$ 630,732

(1) Amount represents 12 months of his base salary then in effect.

(2) Amount represents 12 months of his base salary then in effect and an amount equal to 1 times his most recent annual bonus.

(3) Amount represents the in-the-money value of unvested stock options as of December 31, 2019, using the value of our common stock on December 31, 2019 based on the value of our common stock used for purposes of calculating compensation expense under FASB ASC topic 718. The number of shares underlying such stock options and the exercise price thereof are reflected in the Outstanding Equity Awards section of this Amendment.

(4) Amount represents \$37,596 in accrued vacation.

(5) Amount represents 12 months of COBRA premiums.

Item 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

Securities Authorized For Issuance Under Equity Compensation Plans

We maintain our 2009 Equity Incentive Plan, 2010 Non-Employee Directors' Stock Award Plan and 2010 Employee Stock Purchase Plan, each of which was approved by the Company's security holders, pursuant to which we may grant equity awards to eligible persons.

The following table gives information about equity awards under the foregoing plans as of December 31, 2019, after giving effect to the subsequent Reverse Stock Split:

Plan Category	Number of Securities to be Issued upon Exercise of Outstanding Options, Warrants and Rights	Weighted-Average Exercise Price of Outstanding Options, Warrants and Rights	Number of Securities Remaining Available for Future Issuance Under Equity Compensation Plans (Excluding Securities Reflected in Column(a))
Equity compensation plans approved by security holders	390,045	\$ 45.54	866,346 ⁽¹⁾⁽²⁾
Equity compensation plans not approved by security holders	190,112	\$ 3.34	—
Total	580,157		

(1) The 2009 Equity Incentive Plan incorporates an evergreen formula pursuant to which, on each January 1st, the aggregate number of shares reserved for issuance under the plan will increase by a number equal to 4% of the outstanding shares on December 31st of the preceding calendar year, or such lesser amount (or no shares) as determined by our Board. On May 9, 2019, the Company's stockholders approved an amendment to the 2009 Plan which, among other modifications, included decreasing the automatic annual "evergreen provision" from 4% to 3%, in accordance with which, on January 1 of each year, from 2020 to (and including) 2029, a number of shares of common stock in an amount equal to 3% of the total number of shares of common stock outstanding on December 31 of the preceding calendar year, or such lesser amount of shares (or no shares) approved by the Company's Board of Directors, was added or will be added to the shares reserved under the 2009 Plan.

(2) Of these shares, as of December 31, 2019, 833,840 shares remained available under the 2009 Equity Incentive Plan, 29,878 shares remained available under the 2010 Non-Employee Directors' Stock Award Plan and 2,628 shares remained available under the 2010 Employee Stock Purchase Plan.

Security Ownership of Certain Beneficial Owners and Management

The following table sets forth certain information regarding the ownership of our common stock as of April 20, 2020, except as set forth below, by: (i) each current director; (ii) each of the named executive officers specified in the Summary Compensation Table; (iii) all executive officers and directors of the Company as a group; and (iv) all those known by the Company to be beneficial owners of more than 5% of its common stock. The percentage of shares beneficially owned is computed on the basis of 8,292,803 shares of our common stock outstanding as of April 20, 2020. Shares of our common stock that a person has the right to acquire within 60 days of April 20, 2020 are deemed outstanding for purposes of computing the percentage ownership of the person holding such rights, but are not deemed outstanding for purposes of computing the percentage ownership of any other person

Name and Address of Beneficial Owner ⁽¹⁾	Shares (#)	Percent (%)
Named Executive Officers and Directors		
Richard J. Hawkins ⁽²⁾	735,985	8.9%
Emmett T. Cunningham, Jr., M.D. ⁽³⁾	—	*
Chad A. Johnson ⁽⁴⁾	2,777	*
Kevin Lalande ⁽⁵⁾	409,627	4.9%
Joseph McCracken	—	*
Thomas A. Raffin, M.D. ⁽⁶⁾	9,957	*
Lota S. Zoth ⁽⁷⁾	3,888	*

Eugene P. Kennedy, M.D. ⁽⁸⁾	8,334	*
Carl W. Langren ⁽⁹⁾	14,609	*
Lori D. Lawley ⁽¹⁰⁾	3,985	*
John McKew, Ph.D. ⁽¹¹⁾	97,609	1.2%
Bradley J. Powers ⁽¹²⁾	6,631	*
Charles J. Link, Jr., M.D. ^{**⁽¹³⁾}	76,723	*
Nicholas N. Vahanian, M.D. ^{**⁽¹⁴⁾}	41,928	*
All current executive officers and directors as a group (12 persons) ⁽¹⁵⁾	1,293,402	15.3%
5% and Greater Stockholders		
Deerfield Private Design Fund III, L.P. ⁽¹⁶⁾	936,291	11.3%
Stine Seed Farm, Inc. ⁽¹⁷⁾	873,081	10.5%
Richard J. Hawkins ⁽²⁾	735,985	8.9%
Entities affiliated with New Enterprise Associates, Inc. ⁽¹⁸⁾	526,663	6.4%
Clarus Lifesciences III, L.P. ⁽¹⁹⁾	468,145	5.6%

* Indicates beneficial ownership of less than 1% of the outstanding shares of the Company's common stock.

** Our former Chief Executive Officer and Chief Scientific Officer, Dr. Link, retired from his position as an executive and a Board member on August 3, 2019, and our former President, Dr. Vahanian retired from his position as President and as a Board member on September 27, 2019.

- (1) Unless otherwise indicated, the address of such individual is Lumos Pharma, Inc., 4200 Marathon Boulevard, Suite 200, Austin, Texas 78756.
- (2) Includes 16,410 shares Mr. Hawkins has the right to acquire through the exercise of stock options within 60 days of April 20, 2020.
- (3) Dr. Cunningham is a Senior Managing Director of an entity affiliated with Clarus Lifesciences III, L.P. Dr. Cunningham is not deemed to have any beneficial ownership in the shares held by Clarus Lifesciences III, L.P. described in footnote (16) below.
- (4) Consists of 2,777 shares Mr. Johnson has the right to acquire through the exercise of stock options within 60 days of April 20, 2020.
- (5) Consists of the shares held by Sante Health Ventures II, L.P. Mr. Lalande may be deemed to beneficially own such shares. Mr. Lalande, Joe Cunningham, M.D. and Douglas D. French, are managing directors (the "SHV Directors") of SHV Management Services, LLC ("SHV Management"). SHV Management is the general partner of SHV Management Services, L.P, which is the general partner of Santé Health Ventures II, L.P. Each of the SHV Directors, SHV Management, and SHV Management Services, L.P disclaims beneficial ownership of these securities except to the extent of its or his pecuniary interest therein. The address for this entity is 401 Congress Avenue, Suite 2950, Austin, TX 78701.
- (6) Includes 2,777 shares Dr. Raffin has the right to acquire through the exercise of stock options within 60 days of April 20, 2020.
- (7) Includes 2,777 shares Ms. Zoth has the right to acquire through the exercise of stock options within 60 days of April 20, 2020.
- (8) Includes 6,850 shares Dr. Kennedy has the right to acquire through the exercise of stock options within 60 days of April 20, 2020.
- (9) Consists of 6,850 shares Mr. Langren has the right to acquire through the exercise of stock options within 60 days of April 20, 2020, 2,238 shares of common stock held by Mr. Langren and 5,521 shares of common stock held by the Susan A. Langren 2014 DGT Trust, of which Mr. Langren's spouse is the grantor.
- (10) Includes 3,643 shares Ms. Lawley has the right to acquire through the exercise of stock options within 60 days of April 20, 2020.
- (11) Consists of 97,609 shares Dr. McKew has the right to acquire through the exercise of stock options within 60 days of April 20, 2020.
- (12) Consists of 6,549 shares Mr. Powers has the right to acquire through the exercise of stock options within 60 days of April 20, 2020, 55 shares of common stock held by Mr. Powers and 27 shares of common stock held by Mr. Power's spouse.
- (13) Includes 46,065 shares Dr. Link has the right to acquire through the exercise of stock options within 60 days of April 20, 2020.
- (14) Includes 36,763 shares Dr. Vahanian has the right to acquire through the exercise of stock options within 60 days of April 20, 2020.
- (15) Includes 134,845 shares issuable pursuant to stock options that the executive officers and directors of the Company have the right to acquire within 60 days of April 20, 2020.
- (16) Consists of shares held by Deerfield Private Design Fund III, L.P. Deerfield Mgmt III, L.P. is the general partner of, and Deerfield Management Company, L.P. is the investment advisor to, Deerfield Private Design Fund III, L.P. Mr. James E. Flynn is the sole member of the general partner of each of Deerfield Mgmt III, L.P. and Deerfield Management Company, L.P. The address for each of these entities and Mr. Flynn is 780 Third Avenue, 37th Floor, New York, NY 10017.
- (17) Address: 22555 Laredo Trail, Adel, Iowa 50003, Based solely upon a Schedule 13D filed with the SEC on October 6, 2017. Harry H. Stine, the CEO of Stine Seed Farm, Inc., may be deemed to beneficially own such shares.
- (18) Consists of (i) 2,633 shares held by NEA Ventures 2013, L.P. ("Ven 2013") and (ii) 524,030 shares held by New Enterprise Associates 14, L.P. ("NEA 14") (collectively, the "NEA Shares"). The shares held by Ven 2013 are held indirectly by Karen P. Welsh, the general partner of Ven 2013. The shares held by NEA 14 are held indirectly by NEA Partners 14, L.P. ("NEA Partners 14"), the general partner of NEA 14, NEA 14 GP LTD ("NEA 14 LTD"), the general partner of NEA Partners 14, and the individual directors (the "Directors") of NEA 14 LTD. The Directors of NEA 14 LTD are Peter J. Barris, Forest Baskett, Anthony A. Florence, Patrick J. Kerins, David M. Mott, Scott D. Sandell, and Peter W. Sonsini. All indirect holders of the above referenced shares disclaim beneficial ownership of all applicable shares except to the extent of their pecuniary interest therein. The address for each of these entities is c/o New Enterprise Associates, Inc., 1954 Greenspring Drive, Suite 600, Timonium, Maryland 21093.

- (19) Consists of shares held by Clarus Lifesciences III, L.P. (“Clarus”). Clarus Ventures III GP, L.P. is the sole general partner of Clarus. Blackstone Clarus III L.L.C. is the sole general partner of Clarus Ventures III GP, L.P. The sole member of Blackstone Clarus III L.L.C. is Blackstone Holdings II L.P. The sole general partner of Blackstone Holdings II L.P. is Blackstone Holdings I/II GP Inc. The controlling shareholder of Blackstone Holdings I/II GP Inc. is The Blackstone Group L.P. The sole general partner of The Blackstone Group L.P. is Blackstone Group Management L.L.C. Blackstone Group Management L.L.C. is wholly-owned by The Blackstone Group L.P.’s senior managing directors and controlled by its founder, Stephen A. Schwarzman. Each of Clarus Ventures III GP, L.P., Blackstone Clarus III L.L.C., Blackstone Holdings II L.P., Blackstone Holdings I/II GP Inc., The Blackstone Group L.P., Blackstone Group Management L.L.C. and Stephen A. Schwarzman may be deemed to beneficially own the common stock beneficially owned by Clarus and each disclaim beneficial ownership of all shares held by Clarus. The address for the entities is 101 Main Street, Suite 1210, Cambridge, MA 02142.

Item 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

We have not been a party since January 1, 2018 to any transactions, in which the amount involved in the transaction exceeds \$120,000 (which is less than 1% of the average of our total assets at the end of the last two completed fiscal years), and in which any of our directors, executive officers or to our knowledge, beneficial owners of more than 5% of our capital stock had or will have a direct or indirect material interest, other than compensation, termination and change in control arrangements, which are described in more detail in Item 11 and is hereby incorporated by reference into this Item 13.

Policies and Procedures for Related Person Transactions

Our Board has adopted written policies and procedures for the review of any transaction, arrangement or relationship in which we are a participant, the amount involved exceeds \$120,000 and one of our executive officers, directors, director nominees or 5% stockholders (or their immediate family members), each of whom we refer to as a "related person," has a direct or indirect material interest.

If a related person proposes to enter into such a transaction, arrangement or relationship, which we refer to as a "related person transaction," the related person must report the proposed related person transaction to our Audit Committee. The policy calls for the proposed related person transaction to be reviewed and, if deemed appropriate, approved by our Audit Committee. Whenever practicable, the reporting, review and approval will occur prior to entry into the transaction. If advance review and approval is not practicable, our Audit Committee will review, and, in its discretion, may ratify the related person transaction. Any related person transactions that are ongoing in nature will be reviewed annually.

A related person transaction reviewed under the policy will be considered approved or ratified if it is authorized by our Audit Committee after full disclosure of the related person's interest in the transaction. As appropriate for the circumstances, our Audit Committee will review and consider:

- the related person's interest in the related person transaction;
- the approximate dollar value of the amount involved in the related person transaction;
- the approximate dollar value of the amount of the related person's interest in the transaction without regard to the amount of any profit or loss;
- whether the transaction was undertaken in the ordinary course of our business;
- whether the terms of the transaction are no less favorable to us than terms that could have been reached with an unaffiliated third party;
- the purpose of, and the potential benefits to us of, the transaction; and
- any other information regarding the related person transaction or the related person in the context of the proposed transaction that would be material to investors in light of the circumstances of the particular transaction.

Our Audit Committee may approve or ratify the transaction only if the Audit Committee determines that, under all of the circumstances, the transaction is in, or is not inconsistent, with our best interests. Our Audit Committee may impose any conditions on the related person transaction that it deems appropriate.

In addition to the transactions that are excluded by the instructions to the SEC's related person transaction disclosure rule, our Board has determined that the following transactions do not create a material direct or indirect interest on behalf of related persons and, therefore, are not related person transactions for purposes of this policy:

- interests arising solely from the related person's position as an executive officer of another entity (whether or not the person is also a director of such entity), that is a participant in the transaction, where (a) the related person and all other related persons own in the aggregate less than a 10% equity interest in such entity, (b) the related person and his or her immediate family members are not involved in the negotiation of the terms of the transaction and do not receive any special benefits as a result of the transaction or (c) the amount involved in the transaction equals less than the greater of \$200,000 or 5% of the annual consolidated gross revenues of our receiving payment under the transaction; and
- a transaction that is specifically contemplated by provisions of our certificate of incorporation or bylaws.

The policy provides that transactions involving compensation of executive officers shall be reviewed and approved by our Compensation Committee in the manner specified in its charter.

Limitation of Liability and Indemnification

Our amended and restated bylaws require us to indemnify our directors to the fullest extent not prohibited by law and permit us to indemnify our officers, employees and other agents as set forth under Delaware law. We will indemnify any such person in connection with a proceeding initiated by such person only if such indemnification is expressly required by law, the proceeding was authorized by our Board, the indemnification is provided by us, in our sole discretion, pursuant to the Delaware General Corporation Law or other applicable law or is otherwise expressly required by our amended and restated bylaws. Section 145 of the Delaware General Corporation Law permits indemnification of officers, directors and other agents under specified circumstances and subject to specified limitations. Delaware law also permits a corporation not to hold its directors personally liable for monetary damages for breach of their fiduciary duties as directors, except for liability for:

- breach of their duty of loyalty to the corporation or its stockholders;
- acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law;
- unlawful payments of dividends or unlawful stock repurchases or redemptions; and
- any transaction from which the director derived an improper personal benefit.

These limitations of liability do not affect the availability of equitable remedies such as injunctive relief or rescission.

Our amended and restated bylaws also permit us to secure insurance on behalf of any officer, director, employee or other agent for any liability arising out of his or her actions in this capacity. We have obtained directors' and officers' liability insurance to cover certain liabilities described above.

We have entered into indemnity agreements with each of our directors that require us to indemnify such persons against any and all expenses, including attorneys' fees, witness fees, judgments, fines, settlements and other amounts incurred, including expenses of a derivative action, in connection with any action, suit or proceeding or alternative dispute resolution mechanism, inquiry hearing or investigation, whether threatened, pending or completed, to which any such person may be made a party by reason of the fact that such person is or was one of our directors, officers or employees, provided that such person's conduct did not constitute a breach of his or her duty of loyalty to us or our stockholders, and was not an act or omission not in good faith or which involved intentional misconduct or a knowing violation of laws. The indemnity agreements also set forth procedures that will apply in the event of a claim for indemnification thereunder. We believe that these provisions and agreements are necessary to attract and retain qualified persons as our directors.

On or about May 12, 2016, Trevor Abramson filed a putative securities class action lawsuit in the United States District Court for the Southern District of New York (the Court), captioned *Abramson v. NewLink Genetics Corp., et al.*, Case 1:16-cv-3545 (the Securities Action). Subsequently, the Court appointed Michael and Kelly Nguyen as lead plaintiffs and approved their selection of Kahn, Swick & Foti, LLC as lead counsel in the Securities Action. On October 31, 2016, the lead plaintiffs filed an amended complaint asserting claims under the federal securities laws against the Company, the Company's Chief Executive Officer Charles J. Link, Jr., and the Company's Chief Medical Officer and President Nicholas Vahanian (collectively, the Defendants). The amended complaint alleges the Defendants made material false and/or misleading statements that caused losses to the Company's investors. The Defendants filed a motion to dismiss the amended complaint on July 14, 2017. On March 29, 2018, the Court dismissed the amended complaint for failure to state a claim, without prejudice, and gave the lead plaintiffs until May 4, 2018 to file any amended complaint attempting to remedy the defects in their claims. On May 4, 2018, the lead plaintiffs filed a second amended complaint asserting claims under the federal securities laws against the Defendants. Like the first amended complaint, the second amended complaint alleges that the Defendants made material false and/or misleading statements or omissions relating to the Phase 2 and 3 trials and efficacy of the product candidate algenpantucel-L that caused losses to the Company's investors. The lead plaintiffs do not quantify any alleged damages in the second amended complaint but, in addition to attorneys' fees and costs, they sought to recover damages on behalf of themselves and other persons who purchased or otherwise acquired the Company's stock during the putative class period of September 17, 2013 through May 9, 2016, inclusive, at allegedly inflated prices and purportedly suffered financial harm as a result. The Defendants filed a motion to dismiss the second amended complaint on July 31, 2018. On February 13, 2019, the Court dismissed the second amended complaint for failure to state a claim, with prejudice, and closed the case. On March 14, 2019, lead plaintiffs filed a notice of appeal. The briefing on lead plaintiffs' appeal was completed in early July 2019 and oral argument before the Second Circuit Court of Appeals was held on October 21, 2019. The Company intends to continue defending the Securities Action vigorously.

On or about April 26, 2017, Ronald Morrow filed a shareholder derivative lawsuit on behalf of the Company in the United States District Court for the Southern District of New York, or the Court, against the Company's Chief Executive Officer Charles J. Link, Jr., the Company's Chief Medical Officer and President Nicholas Vahanian, and Company directors Thomas A. Raffin, Joseph Saluri, Ernest J. Talarico, III, Paul R. Edick, Paolo Pucci, and Lota S. Zoth (collectively, the Morrow Defendants), captioned

Morrow v. Link., et al., Case 1:17-cv-03039 (the Morrow Action). The complaint alleges that the Morrow Defendants caused the Company to issue false statements in its 2016 proxy statement regarding risk management and compensation matters in violation of federal securities law. The complaint also asserts state law claims against the Morrow Defendants for breaches of fiduciary duties, unjust enrichment, abuse of control, insider trading, gross mismanagement, and corporate waste, alleging that the Morrow Defendants made material misstatements or omissions related to the Phase 2 and 3 trials and efficacy of the product candidate algenpantucel-L, awarded themselves excessive compensation, engaged in illegal insider trading, and grossly mismanaged the Company. The plaintiff does not quantify any alleged damages in the complaint but seeks restitution for damages to the Company, attorneys' fees, costs, and expenses, as well as an order directing that proposals for strengthening board oversight be put to a vote of the Company's shareholders. The language for such proposals is not specified in the complaint. The plaintiff also contemporaneously filed a statement of relatedness, informing the Court that the Morrow Action is related to Abramson v. NewLink Genetics Corp., et al., Case 1:16-cv-3545. On May 19, 2017, the plaintiff dismissed the Morrow Action without prejudice. Also on May 19, 2017, plaintiffs' counsel in the Morrow Action filed a new shareholder derivative complaint that is substantively identical to the Morrow Action, except that the plaintiff is Rickey Ely. The latter action is captioned Ely v. Link, et al., Case 17-cv-3799, or the Ely Action. By agreement of the parties and order dated June 26, 2017, the Court temporarily stayed the Ely Action until the Securities Action is dismissed or otherwise finally resolved. Under the terms of the stay, the plaintiff in the Ely Action has until March 15, 2019 (30 days after dismissal of the Securities Action with prejudice) to file an amended derivative complaint or rest upon the current derivative complaint. By further agreement of the parties, dated March 15, 2019, the Ely Action will continue to be stayed pending the outcome of the appeal in the Securities Action. If the Securities Action continues to be dismissed in its entirety following its appeal plaintiff in the Ely Action has agreed to withdraw or dismiss the action, with prejudice. The Company disputes the claims in the Ely Action and intends to defend against them vigorously.

At present, other than the previously mentioned matters, there is no pending litigation or proceeding involving any of our directors or officers for which indemnification is required or permitted, and we are not aware of any threatened litigation or proceeding that may result in a claim for indemnification.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted by directors, executive officers or persons controlling us, we have been informed that in the opinion of the SEC, such indemnification is against public policy as expressed in the Securities Act and is therefore unenforceable.

The director independence information provided in Item 10 of this Amendment is hereby incorporated by reference in this Item 13.

Item 14. PRINCIPAL ACCOUNTING FEES AND SERVICES

Principal Accountant Services and Fees

The following table represents aggregate fees billed to NewLink for the fiscal years ended December 31, 2019 and December 31, 2018, by KPMG LLP, our principal accountant. All tax fees described below were pre-approved by our Audit Committee.

	Year Ended	
	2019	2018
Audit Fees ⁽¹⁾	\$475,090	\$524,000
Audit-Related Fees	—	—
Tax Fees ⁽²⁾	\$194,529	\$114,660
All Other Fees	—	—
Total Fees	\$669,619	\$638,660

⁽¹⁾ Represents fees for the audit of NewLink annual financial statements and of our 2018 internal control over financial reporting, review of our quarterly financial statements included in our Forms 10-Q, accounting consultations and the issuance of consents and comfort letters.

⁽²⁾ Consists of fees for tax services provided to NewLink, including tax planning and compliance services and the review of certain tax returns.

Pre-Approval Policies and Procedures

Our Audit Committee has adopted a policy and procedures for the pre-approval of audit services, audit-related services and tax services rendered by our independent registered public accounting firm. The policy generally pre-approves specified services in the defined categories of audit services, audit-related services, and tax services up to specified amounts. Pre-approval may also be given as part of our Audit Committee's approval of the scope of the engagement of the independent registered public accounting firm or on an individual explicit case-by-case basis before the independent registered public accounting firm is engaged to provide each service. The pre-approval of services has been delegated to the Chairperson of our Audit Committee, but the decision must be reported to the full Audit Committee at its next scheduled meeting.

In connection with the audit of the 2019 financial statements, our Audit Committee entered into an engagement agreement with KPMG LLP which sets forth the terms by which KPMG LLP was to perform audit services for the Company.

PART IV

Item 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES

Exhibit Number	Description	Incorporated By Reference			Filed Herewith
		Form	Filing Date	Number	
2.1	Asset Purchase Agreement, dated March 19, 2017, between BlueLink Pharmaceuticals, Inc. and Cerulean Pharma, Inc.	8-K	3/20/2017	2.1	
2.2	Agreement and Plan of Merger and Reorganization, dated September 30, 2019, by and among NewLink Genetics Corporation, Cyclone Merger Sub, Inc. and Lumos Pharma, Inc.	8-K	9/30/2019	2.1	
2.3	Amendment No. 1 to Agreement and Plan of Merger and Reorganization, dated November 19, 2019, by and among NewLink Genetics Corporation, Cyclone Merger Sub, Inc. and Lumos Pharma, Inc.	8-K	11/20/2019	2.1	
2.4	Form of Support Agreement, by and between NewLink Genetics Corporation and its directors and officer and by and between NewLink Genetics Corporation and Stine Seed Farm, Inc.	8-K	9/30/2019	2.2	
3.1	Amended and Restated Certificate of Incorporation filed on November 16, 2011	8-K	11/18/2011	3.1	
3.2	Certificate of Amendment to Restated Certificate of Incorporation filed on May 10, 2013	8-K	5/14/2013	3.1	
3.3	Amended and Restated Bylaws	8-K	9/30/2019	3.2	
4.1	Form of the Registrant's Common Stock Certificate	S-1/A	10/26/2011	4.1	
4.2	Reference is made to Exhibits 3.1, 3.2 and 3.3				
4.3	Amended and Restated Investor Rights Agreement by and between the Registrant and certain holders of the Registrant's capital stock dated as of December 1, 2010	10-Q	5/10/2012	4.3	
4.4	Description of Securities	10-K	3/3/2020	4.4	
10.1	† Form of Indemnity Agreement by and between the Registrant and its directors and executive officers	S-1/A	11/8/2011	10.11	
10.2	† 2000 Equity Incentive Plan	S-1	12/21/2010	10.2	
10.3.1	† Form of Stock Option Agreement under 2000 Equity Incentive Plan	S-1	12/21/2010	10.3	
10.3.2	† Form of Stock Option Grant Notice under 2000 Equity Incentive Plan	S-1	12/21/2010	10.4	
10.3.3	† Form of Stock Bonus Agreement under 2000 Equity Incentive Plan	S-1	12/21/2010	10.5	
10.4	† Amended and Restated 2009 Equity Incentive Plan	S-1	12/21/2010	10.6	
10.4.1	† Form of Stock Option Agreement under 2009 Equity Incentive Plan	S-1	12/21/2010	10.7	
10.4.2	† Form of Stock Option Grant Notice under 2009 Equity Incentive Plan	S-1	12/21/2010	10.8	
10.4.3	† Form of Restricted Stock Unit Award Agreement under the 2009 Equity Incentive Plan, as amended	10-Q	8/5/2014	10.6	
10.4.4	† Form of Restricted Stock Unit Grant Notice [Four Year Annual Vesting] under the 2009 Equity Incentive Plan, as amended	10-Q	8/5/2014	10.7	
10.4.5	† Form of Restricted Stock Unit Grant Notice [Immediately Vested] under the 2009 Equity Incentive Plan, as amended	10-Q	8/5/2014	10.8	
10.5	† 2010 Employee Stock Purchase Plan	8-K	5/14/2013	10.2	
10.6	† 2010 Non-Employee Directors' Stock Award Plan, as amended	10-Q	11/8/2016	10.1	
10.6.1	† Form of Restricted Stock Unit Award Agreement under the 2010 Non-Employee Directors' Stock Award Plan, as amended	10-Q	8/5/2014	10.4	
10.6.2	† Form of Restricted Stock Unit Grant Notice under the 2010 Non-Employee Directors' Stock Award Plan, as amended	10-Q	8/5/2014	10.5	
10.7	* License Agreement dated September 13, 2005 by and between the Registrant and Medical College of Georgia Research Institute, Inc.	S-1/A	11/8/2011	10.46	
10.7.1	* Amendment to License Agreement dated April 27, 2006 by and between the Registrant and Medical College of Georgia Research Institute, Inc.	S-1/A	11/8/2011	10.47	
10.7.2	* Amendment to License Agreement dated April 27, 2006 by and between the Registrant and Medical College of Georgia Research Institute, Inc.	S-1/A	11/8/2011	10.48	

10.7.3	*	Amendment to License Agreement dated February 13, 2007 by and between the Registrant and Medical College of Georgia Research Institute, Inc.	S-1/A	11/8/2011	10.49
10.7.4	*	Amendment to License Agreement dated March 28, 2006 by and between the Registrant and Medical College of Georgia Research Institute, Inc.	10-Q	11/10/2014	10.3
10.7.5	*	Amendment to License Agreement dated July 10, 2014 by and between the Registrant and Medical College of Georgia Research Institute, Inc.	10-Q	11/10/2014	10.4
10.8		Lease dated September 30, 2009 by and between the Registrant and Iowa State University Research Park Corporation	S-1	12/21/2010	10.53
10.9		Memorandum of Agreement dated November 14, 2011 by and between NewLink Genetics Corporation and Iowa State University Research Park Corporation	8-K	11/18/2011	10.1
10.10		Promissory Note executed in 2009 by and between the Registrant and Iowa State University Research Park Corporation	S-1	12/21/2010	10.54
10.11		Iowa Values Fund Agreement dated March 18, 2005 by and between the Registrant and Iowa Department of Economic Development	S-1	12/21/2010	10.56
10.12		Master Contract dated December 29, 2005 by and between the Registrant and Iowa Department of Economic Development	S-1	12/21/2010	10.58
10.13		Contract Amendment dated April 21, 2009 between the Registrant and Iowa Department of Economic Development	S-1	12/21/2010	10.59
10.14		Contract Amendment dated August 19, 2010 between the Registrant and Iowa Department of Economic Development	S-1	12/21/2010	10.57
10.15		Contract Amendment dated August 19, 2010 between the Registrant and Iowa Department of Economic Development	S-1	12/21/2010	10.60
10.16		Contract Amendment effective February 17, 2011 between the Registrant and Iowa Department of Economic Development	S-1/A	9/14/2011	10.77
10.17		Contract Amendment effective February 17, 2011 between the Registrant and Iowa Department of Economic Development	S-1/A	9/14/2011	10.78
10.18		NewLink Genetics Corporation 401(k) Prototype Plan and Trust, effective as of January 1, 2005	8-K	3/12/2012	10.2
10.19		NewLink Genetics Corporation 401(k) Adoption Agreement, effective as of January 1, 2005	8-K	3/12/2012	10.3
10.20		Material Modification to the NewLink Genetics Corporation 401(k) Adoption Agreement, effective as of January 1, 2011	8-K	3/12/2012	10.4
10.21		Settlement Agreement with the Iowa Economic Development Authority, effective as of March 26, 2012	8-K	3/28/2012	10.1
10.22		Memorandum of Agreement dated April 15, 2013 by and between the Registrant and Iowa State University Research Park Corporation	10-Q	5/8/2013	10.1
10.23		Memorandum of Agreement; Addendum to the Lease Between ISU Research Park Corporation and the Registrant dated March 1, 2010	10-Q	8/8/2013	10.2
10.24		License Agreement Amendment, by and between NewLink Genetics Corporation and Georgia Health Sciences University Research Institute, dated as of July 13, 2013	10-Q	11/12/2013	10.2
10.25	*	License and Collaboration Agreement dated November 21, 2014 by and among the Company, BioProtection Systems Corporation and Merck Sharp & Dohme Corp.	10-K	3/16/2015	10.105
10.25.1	*	Amendment to License and Collaboration Agreement dated December 5, 2017 by and among the Company, BioProtection Systems Corporation and Merck Sharp & Dohme Corp.	10-K	3/5/2018	10.48.1
10.25.2	*	Amendment to License and Collaboration Agreement by and between Merck Sharp & Dohme Corp., dated May 10, 2018	10-Q	8/6/2018	10.1
10.25.3	*	Amendment to License and Collaboration Agreement by and between the Registrant and Merck Sharp & Dohme Corp., dated October 9, 2018	10-Q	11/2/2018	10.1
10.25.4	*	Amendment No. 4 to License and Collaboration Agreement dated January 14, 2019 by and among the Company, BioProtection Systems Corporation and Merck Sharp & Dohme Corp.	10-K	3/3/2020	10.25.4
10.26		Memorandum of Agreement dated February 12, 2015; Addendum to the Lease Between ISU Research Park Corporation and NewLink Genetics Corporation dated March 1, 2010	10-K	3/16/2015	10.108

10.27	*	Sixth Amendment, effective March 15, 2016, to the License Agreement between Augusta University Research, Inc., the Georgia Health Sciences University Research Institute, Inc., and Medical College of Georgia Institute and the Registrant, dated September 13, 2005.	10-Q/A	11/3/2016	10.8	
10.28	*	Research Services Agreement, dated March 18, 2016, between the Registrant and Augusta University Research Institute, Inc.	10-Q/A	11/3/2016	10.1	
10.29		Controlled Equity Offering Sales Agreement, dated March 12, 2018, between the Registrant and Cantor Fitzgerald, Co.	8-K	3/13/2018	10.1	
10.30		License Agreement, dated March 19, 2017 between Bluelink Pharmaceuticals, Inc. and Cerulean Pharma, Inc.	8-K	3/20/2017	10.1	
10.31	†	Employment Agreement, dated July 29, 2019, by and between the Registrant and Charles J. Link	10-Q	11/6/2019	10.1	
10.32	†	Transition Agreement, dated September 27, 2019, by and between the Registrant and Dr. Nicholas N. Vahanian	8-K	9/30/2019	10.2	
10.33	†	Employment Agreement, dated September 30, 2019, by and between the Registrant and Carl Langren	8-K	9/30/2019	10.3	
10.34	†	Employment Agreement, dated September 30, 2019, by and between the Registrant and Eugene Kennedy	8-K	9/30/2019	10.4	
10.35	†	Employment Agreement, dated September 30, 2019, by and between the Registrant and Lori Lawley		9/30/2019	10.6	
10.36	†	Employment Agreement, dated September 30, 2019, by and between the Registrant and Brad Powers		9/30/2019	10.5	
10.37	*	Amended and Restated License Agreement by and between BioProtection Systems Corporation and Her Majesty the Queen in Right of Canada, as represented by the Minister of Health, acting through the Public Health Agency of Canada, dated December 5, 2017.	10-K	3/5/2018	10.61	
10.37.4		Amendment to the Amended and Restated License Agreement by and between BioProtection Systems Corporation and Her Majesty the Queen in Right of Canada, as represented by the Minister of Health, acting through the Public Health Agency of Canada, dated December 27, 2018.	10-K	3/5/2019	10.40.1	
21.1		Subsidiary Information	10-K	3/3/2020	21.1	
23.1		Consent of KPMG LLP, independent registered public accounting firm	10-K	3/3/2020	23.1	
24.1		Power of Attorney (included on signature page to Original Report)	10-K	3/3/2020	24.1	
31.1		Rule 13a-14(a)/15d-14(a) Certification to Form 10-K	10-K	3/3/2020	31.1	
31.2		Rule 13a-14(a)/15d-14(a) Certification to Form 10-K	10-K	3/3/2020	31.2	
31.3		Rule 13a-14(a)/15d-14(a) Certification to Form 10-K				X
31.4		Rule 13a-14(a)/15d-14(a) Certification to Form 10-K				X
32.1	#	Section 1350 Certification	10-K	3/3/2020	32.1	
101.INS		XBRL Instance Document	10-K	3/3/2020	101.SCH	
101.SCH		XBRL Taxonomy Extension Schema Document	10-K	3/3/2020	101.CAL	
101.CAL		XBRL Taxonomy Extension Calculation Linkbase Document	10-K	3/3/2020	101.LAB	
101.LAB		XBRL Taxonomy Extension Label Linkbase Document	10-K	3/3/2020	101.PRE	
101.PRE		XBRL Taxonomy Extension Presentation Linkbase Document	10-K	3/3/2020	101.DEF	
101.DEF		XBRL Taxonomy Extension Definition Linkbase Document	10-K	3/3/2020	101.INS	

† Indicates management contract or compensatory plan.

* Indicates confidential treatment has been requested with respect to specific portions of this exhibit. Omitted portions have been filed with the Securities and Exchange Commission pursuant to Rule 24b-2 of the Securities Exchange Act.

The certifications in Exhibit 32.1 incorporated by reference in this Amendment are not deemed filed with the Securities and Exchange Commission and are not to be incorporated by reference into any filing of the Company under the Securities Act or the Exchange Act, whether made before or after the date of this Amendment, irrespective of any general incorporation language contained in such filing.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, as amended, the Registrant has duly caused this Report to be signed on its behalf by the undersigned thereunto duly authorized.

By: /s/ Carl W. Langren
Carl W. Langren
Chief Financial Officer and Secretary
(Principal Financial Officer)
Date: April 29, 2020

CERTIFICATION

I, Richard J. Hawkins, certify that:

1. I have reviewed this Amendment No. 1 to the Annual Report on Form 10-K/A of Lumos Pharma, Inc.;
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;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: April 29, 2020

/s/ Richard J. Hawkins

By: _____

Richard J. Hawkins

Chief Executive Officer

(Principal Executive Officer)

CERTIFICATION

I, Carl W. Langren, certify that:

1. I have reviewed this Amendment No. 1 to the Annual Report on Form 10-K/A of Lumos Pharma, Inc.;
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;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: April 29, 2020

/s/ Carl W. Langren

By: _____

Carl W. Langren

Chief Financial Officer

(Principal Financial Officer)