

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

FORM 8-K

CURRENT REPORT
Pursuant to Section 13 OR 15(d) of
The Securities Exchange Act of 1934

Date of Report (Date of earliest event reported): September 30, 2019 (September 27, 2019)

NewLink Genetics Corporation
(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction
of incorporation)

001-35342
(Commission
File Number)

42-1491350
(IRS Employer
Identification No.)

2503 South Loop Drive
Ames, IA
(Address of principal executive offices)

50010
(Zip Code)

Registrant's telephone number, including area code: **(515) 296-5555**

Not applicable
(Former name or former address, if changed since last report.)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions (see General Instruction A.2. below):

- Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
- Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
- Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
- Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))
- Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock	NLNK	The Nasdaq Stock Market

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (§ 230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§ 240.12b-2 of this chapter).

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

Item 1.01 Entry into a Material Definitive Agreement.

Merger Agreement

On September 30, 2019, NewLink Genetics Corporation (“**NewLink**” or the “**Company**”), Cyclone Merger Sub, Inc., a Delaware corporation and a wholly-owned subsidiary of the Company (the “**Merger Sub**”), and Lumos Pharma, Inc., a privately-held Delaware corporation (“**Lumos**”), entered into an Agreement and Plan of Merger and Reorganization (the “**Merger Agreement**”), pursuant to which, among other things, subject to the satisfaction or waiver of the conditions set forth in the Merger Agreement, Merger Sub will merge with and into Lumos, with Lumos surviving as a wholly-owned subsidiary of NewLink (the “**Merger**”). The Merger is intended to qualify for federal income tax purposes as a tax-free reorganization under the provisions of Section 368(a) of the Internal Revenue Code of 1986, as amended.

Subject to the terms and conditions of the Merger Agreement, at the effective time of the Merger (the “**Effective Time**”), each share of Lumos capital stock outstanding immediately prior to the Effective Time (excluding shares of Lumos capital stock held as treasury stock or held or owned by Lumos or the Merger Sub prior to the Effective Time and shares held by Lumos stockholders who have exercised and perfected appraisal rights in accordance with Delaware law) shall be automatically converted solely into the right to receive a number of shares of NewLink common stock equal to the amount determined pursuant to a charter amendment to the Lumos’ certificate of incorporation (a form of which is an exhibit to the Merger Agreement) that will be filed prior to the Effective Time, at exchange ratios applicable to each type of Lumos capital stock as set forth therein. Outstanding options to purchase Lumos common stock will be assumed by NewLink and converted into options to purchase a number of shares of NewLink common stock at the exchange ratio applicable to exchanging shares of Lumos common stock for NewLink common stock.

Pursuant to such conversion, immediately following the Merger, former Lumos stockholders are expected to own approximately 50% of the aggregate number of shares of Company common stock issued and outstanding following the consummation of the Merger (the “**Post-Closing Shares**”), and the stockholders of the Company as of immediately prior to the Merger are expected to own approximately 50% of the aggregate number of Post-Closing Shares.

Immediately following the Merger, the name of the Company will be changed from “NewLink Genetics Corporation” to “Lumos Pharma, Inc.” and the name of Lumos will be changed to a name mutually agreed upon by the Company and Lumos. At the Effective Time, the Merger Agreement contemplates that the Board of Directors of the Company will consist of three members designated by the Company, three members designated by Lumos and one member mutually designated by the Company and Lumos. The executive officers of the Company immediately after the Effective Time are expected to be Rick Hawkins, as Chief Executive Officer, Eugene Kennedy, as Chief Medical Officer, John McKew, as Chief Science Officer, Carl Langren, as Chief Financial Officer, Bradley Powers, as General Counsel, Lori Lawley, as Vice President, Finance and Controller, and Chris Bembem, as Director, Business Development.

The Merger Agreement contains customary representations, warranties and covenants made by the Company and Lumos, including covenants relating to obtaining the requisite approvals of the stockholders of the Company and Lumos, indemnification of directors and officers, and the Company’s and Lumos’ conduct of their respective businesses between the date of signing the Merger Agreement and the closing of the Merger. Consummation of the Merger is subject to certain closing conditions, including, among other things, approval by the stockholders of the Company and Lumos. The Merger Agreement contains certain termination rights for both the Company and Lumos, and further provides that, upon termination of the Merger Agreement under specified circumstances, the Company or Lumos, as applicable, may be required to pay the other party a termination fee of \$2,000,000.

The Merger Agreement contemplates that the Company will also seek approval from its stockholders to amend the Company’s certificate of incorporation to effect a reverse stock split, with the split ratio to be mutually agreed to by the Company and Lumos within the range approved by the Company’s stockholders immediately prior to the Effective Time. Lumos’s stockholders and Board of Directors have both approved the Merger.

Support Agreements

In accordance with the terms of the Merger Agreement, the officers and directors of NewLink and Stine Seed Farm, Inc. (“**Stine**”), a significant stockholder of NewLink, have each entered into a support agreement with the Company (the “**Support Agreements**”).

Pursuant to the Support Agreements, each signatory will vote in favor of (i) the amendment of the Company’s certificate of incorporation to effect a reverse stock split, (ii) the issuance of shares of Company common stock to Lumos’s stockholders in connection with the contemplated transactions, (iii) the change of control of the Company pursuant to the Nasdaq rules, if required,

and (iv) any non-binding, advisory vote to approve certain compensation that may become payable to the Company's named executive officers, and will vote against any alternative acquisition proposal.

The Support Agreements prohibit each signatory from transferring its shares of NewLink capital stock, subject to specified exceptions. Each signatory is also prohibited from taking actions to solicit, facilitate or approve any alternative acquisition.

The Support Agreements will terminate automatically upon certain events, including the termination of the Merger Agreement and upon the Effective Time.

Lock-Up Agreements

Concurrently with the execution of the Merger Agreement, the officers and directors of NewLink, Stine, as well as the officers, directors and certain stockholders of Lumos have each entered into a lock-up agreement (the "**Lock-Up Agreement**") pursuant to which they have agreed, among other things, not to sell or dispose of any shares of Company common stock which are or will be beneficially owned by them at the closing of the Merger with such shares being released from such restrictions 180 days after the Effective Time, subject to specified exceptions.

The Merger Agreement, form of Support Agreement and form of Lock-Up Agreement have each been included as an exhibit to this Current Report to provide the Company's stockholders with information regarding their terms. The assertions embodied in the representations and warranties contained in the Merger Agreement are qualified by information in confidential disclosure schedules delivered by the parties in connection with the signing of the Merger Agreement. Moreover, certain representations and warranties contained in these agreements were made as of a specified date; may have been made for the purposes of allocating contractual risk between the parties to such agreements; and may be subject to contractual standards of materiality different from what might be viewed as material to the Company's stockholders. Accordingly, the representations and warranties in these agreements should not be relied on by any persons as characterizations of the actual state of facts and circumstances of the Company or any other parties thereto at the time they were made and the Company's stockholders should consider the information in these agreements in conjunction with the entirety of the factual disclosure about the Company in the Company's public reports filed with the Securities and Exchange Commission (the "SEC"). Information concerning the subject matter of the representations and warranties may change after the date of these agreements, which subsequent information may or may not be fully reflected in the Company's public disclosures. These agreements should not be read alone, but should instead be read in conjunction with each other and other information regarding the Company.

The preceding summary does not purport to be complete and is qualified in its entirety by reference to the Merger Agreement, the form of the Support Agreement and the form of Lock-up Agreement, which are filed as Exhibits 2.1, 2.2 and 10.1, respectively, and which are incorporated herein by reference.

Item 2.05. Costs Associated with Exit or Disposal Activities.

On September 30, 2019, the Board of Directors of the Company approved, and management commenced, a restructuring plan in the context of the anticipated Merger. This action is expected to be substantially completed by December 31, 2019. The objective of the restructuring is to reduce the Company's operating expenses and align the Company's personnel with the anticipated needs of the Company following the Merger. The severance charges include changes to the Company's management team.

Under the restructuring plan, the Company will reduce its workforce by 28 employees (approximately 60%), including several members of management. Affected employees will be eligible to receive severance payments and outplacement services. Affected employees will receive accelerated vesting of a portion of their stock options, an extension to the post-termination exercise period for their stock options and Company-paid COBRA coverage. In each case, employee severance benefits are contingent upon an affected employee's execution (and non-revocation) of a separation agreement, which includes a general release of claims against the Company. The Company expects that the workforce reduction and the change in the management team will decrease the Company's cash payroll expense by approximately \$5.0-\$6.0 million annually.

In connection with the restructuring and the retirement of Dr. Vahanian as described below in Item 5.02 of this Current Report, the Company estimates that it will incur aggregate restructuring charges of approximately \$4.5 million, which will be recorded in the third and fourth quarters of 2019, related to one-time termination severance payments and other employee-related costs, excluding any amounts related to stock-based compensation expense for the acceleration of stock options and the extension of post-termination stock option exercise periods. The charges that the Company expects to incur in connection with the workforce reduction is subject to a number of assumptions, and actual results may differ materially. The Company may also incur additional costs not currently contemplated due to events that may occur as a result of, or that are associated with, the workforce reduction.

Item 3.02 Unregistered Sales of Equity Securities.

The information contained above in Item 1.01 is hereby incorporated by reference into this Item 3.02. The securities of the Company to be issued as described herein will be issued without registration pursuant to the exemption provided by Section 4(a)(2) under the Securities Act of 1933, as amended.

Item 3.03 Material Modification to Rights of Security Holders.

To the extent required by Item 3.03 of Form 8-K, the information contained in Item 5.03 of this Current Report on Form 8-K is incorporated herein by reference.

Item 5.01 Changes in Control of Registrant.

The completion of the Merger will constitute a change in control of the Company. The Merger is described in Item 1.01 of this Form 8-K, which is incorporated by reference into this Item 5.01.

Item 5.02. Departure of Directors or Certain Officers; Election of Directors; Appointment of Certain Officers; Compensatory Arrangements of Certain Officers.

(b) Termination of Officers

In connection with the ongoing Merger, the Board of Directors of the Company determined to disband, effective at the closing of the Merger, the Office of Chief Executive Officer that was established by the Board of Directors on the date the Company's former CEO retired.

Dr. Vahanian's Transition Agreement

Nicholas Vahanian retired from his position as the President and member of the Board of Directors of the Company, effective September 27, 2019, and will remain an employee of the Company during a transition period of up to November 8, 2019. Dr. Vahanian's decision to retire was not related to a disagreement with the Company over any of its operations, policies or practices.

Dr. Vahanian entered into a transition agreement (the "**Transition Agreement**") with the Company, effective September 27, 2019. Under the Transition Agreement, Dr. Vahanian will be entitled to: (i) a pro-rated 2019 bonus payment based on actual 2018 bonus paid, (ii) lump sum payment equal to 18 months of his current base salary, (iii) COBRA coverage for a period up to 18 months, (iv) \$400,000 allowance for future medical costs, healthcare insurance and rehabilitation expenses, and (v) acceleration by 12 months of certain vested stock options and restricted stock units. In addition, Dr. Vahanian will receive an extension of the post-termination exercise period by two years for certain vested options. If a priority review voucher is issued in connection with the Ebola vaccine licensed to Merck Sharp & Dohme Corp. prior to December 31, 2024, Dr. Vahanian would be eligible to receive up to 0.5% of the net amount realized by the Company from the monetization that voucher. To be eligible for the separation benefits described above, Dr. Vahanian must comply with his obligations under the Transition Agreement and provide a release of claims.

The foregoing description of the terms and conditions of the Transition Agreement does not purport to be complete and is qualified in its entirety by reference to the full text of the Transition Agreement, which is attached hereto as Exhibit 10.2 and is incorporated by reference herein.

(c) Appointment of Officers

Pursuant to the Merger Agreement, the Board of Directors of the Company appointed Rick Hawkins as the CEO of the Company, effective as of the closing of the Merger. As a result of Mr. Hawkins' appointment effective as of closing of the Merger, the Board of Directors of the Company will disband the Office of the CEO, and Mr. Hawkins will be named the Principal Executive Officer of the Company.

Rick Hawkins, age 70, has been President and CEO of Lumos since its founding in 2011. In 1983, Mr. Hawkins founded and then served as the Chairman, President and CEO of Pharmaco Dynamics Research, Inc., a clinical drug development service provider that was later merged with Applied Bioscience International, Inc. in 1991. He co-founded Sensus Drug Development Corp. in 1994 and served as its Chairman before it was sold to Pharmacia & Upjohn, LLC in 2001. He also co-founded in 1995

and served as a director of Covance Biotechnology Services, Inc., a full-service contract manufacturer of recombinant proteins, before it was sold to Akzo Nobel in 2001. He co-founded in 2004 and served as CEO, President, and Chairman of LabNow, Inc., a diagnostic device company until 2010. Mr. Hawkins currently serves as a director of the publicly traded companies, Plus Therapeutics (PSTV) and Savara Pharmaceuticals (SVRA) and the private companies, ENTvantage Diagnostics, Inc., AiCure, and Aether Therapeutics, Inc.

There are no family relationships between Mr. Hawkins and any director or other executive officer, nor are there any transactions to which the Company was or is a participant and in which Mr. Hawkins has a material interest subject to disclosure under Item 404(a) of Regulation S-K. Other than the Merger Agreement, there are no arrangements or understandings between Mr. Hawkins and any other persons pursuant to which he was selected as an officer.

(e) Amended and Restated Employment Agreements

On September 30, 2019, each of Mr. Langren, Chief Financial Officer of the Company, Dr. Kennedy, Chief Medical Officer of the Company, Mr. Powers, General Counsel and Principal Executive Officer of the Company, and Ms. Lawley, Vice President, Finance and Controller and Principal Accounting Officer of the Company, entered into an amended and restated employment agreement (the "**Employment Agreements**") with the Company, which superseded and replaced any prior executive employment agreements previously entered into with each such individual.

The material terms of the Employment Agreements include: (i) an annual base salary that is subject to annual review and periodic adjustment but that cannot be decreased without the executive's express written consent or in connection with an across-the-board decrease in salaries that proportionally affects all senior executives of the Company; (ii) eligibility for an annual performance bonus targeted at a percentage of the executive's base salary and based on the Company and the executive's performance as determined by the Board and the Compensation Committee of the Board; and (iii) participation in benefit plans and programs generally available to employees and executives of the Company.

Upon the executive's termination without Cause, due to the officer's death or Disability, or resignation for Good Reason (each term as defined in the applicable Employment Agreement), and in the case of Mr. Langren, also upon his voluntary resignation without Good Reason at any time after delivery of the Company's audited financial statements for 2019 to be completed in early 2020, he provides at least 30 days advance written notice and he is not eligible for the Change in Control benefits described below at the time of his resignation, the executive is entitled to receive certain benefits, subject to the executive's execution of a separation and release agreement and continuing compliance with obligations to the Company. Such benefits include: (i) continuing base salary payments for a certain number of months (the number of months varying by executive); (ii) receipt of a prorated bonus based on the number of days worked during the year of separation; (iii) a certain number of months of accelerated vesting of the executive's outstanding equity awards (the number of months varying by executive); (iv) post-employment reimbursement of COBRA health insurance payments for a certain number of months (the number of months varying by executive); and (v) in the case of Mr. Langren, an extension of the exercise period for certain equity awards so that Mr. Langren has 365 days after the separation date to exercise any vested equity awards.

Upon the executive's termination without Cause or resignation (A) within one month before or 13 months following a Change in Control (each term as defined in the Employment Agreements) or (B) on or before the 13th month anniversary of the closing of the Merger, the executive is entitled to receive certain benefits, subject to the executive's execution of a separation and release agreement and continuing compliance with obligations to the Company. Such benefits include (i) a lump sum payment of a certain number of months of the executive's base salary (the number of months varying by executive), (ii) receipt of a bonus equal to the executive's Bonus Target (as defined in the applicable Employment Agreement) or, in the case of Mr. Langren, receipt of a bonus equal to his most recent bonus multiplied by 1.5, (iii) 100% accelerated vesting of all the executive's outstanding equity awards, (iv) 24 month extension of the exercise period of the executive's outstanding equity awards (such extension available to only certain executives), and (v) post-employment reimbursement of COBRA health insurance payments for a certain number of months (the number of months varying by executive). Under the Employment Agreements the Merger will be deemed a change of control. Upon the closing of the Merger, the parties to the Employment Agreement and all other employees will receive one year's acceleration of vesting of their stock options.

The Employment Agreements will subject the executive to non-compete and non-solicit obligations during the executive's employment and for one year after separation from the Company. The Employment Agreements also contain customary provisions related to confidential information.

The foregoing description of the terms and conditions of the Employment Agreements does not purport to be complete and is qualified in its entirety by reference to the full text of the Employment Agreements, which are attached hereto as Exhibits 10.3, 10.4, 10.5 and 10.6 and are incorporated by reference herein.

Item 5.03. Amendments to Articles of Incorporation and or Bylaws; Change in Fiscal Year.

On September 30, 2019, the Board of Directors of the Company adopted an amendment to the Company's bylaws (the "Bylaws") by, among other changes, revising Section 47 to the Bylaws. The new Section 47 of the Bylaws provides that:

Unless the corporation consents in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware (or, if and only if the Court of Chancery of the State of Delaware lacks subject matter jurisdiction, any state court located within the State of Delaware or, if and only if all such state courts lack subject matter jurisdiction, the federal district court for the District of Delaware) shall, to the fullest extent permitted by law, be the sole and exclusive forum for the following types of actions or proceedings under Delaware statutory or common law: (1) any derivative action or proceeding brought on behalf of the corporation; (2) any action asserting a claim of breach of a fiduciary duty owed by any current or former director, officer, other employee or stockholder of the corporation to the corporation or to the corporation's stockholders; (3) any action asserting a claim arising pursuant to any provision of the DGCL, the Company's certificate of incorporation or these Bylaws or as to which the DGCL confers jurisdiction on the Court of Chancery of the State of Delaware; or (4) any action asserting a claim governed by the internal affairs doctrine. Any person or entity purchasing or otherwise acquiring or holding any interest in shares of capital stock of the corporation shall be deemed to have notice of and consented to the provisions of this Section 47. This choice of forum provision does not apply to suits brought to enforce a duty or liability created by the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended, or any claim for which the federal courts have exclusive jurisdiction

The newly adopted Bylaws described above is attached as Exhibit 3.1 to this report on Form 8-K and is incorporated herein by reference.

Item 7.01. Regulation FD Disclosure.

On September 30, 2019, the Company made available a presentation titled "NewLink Genetics and Lumos Pharma Merger - Focused on Developing Therapies to Treat Rare Diseases". A copy of the presentation is attached hereto as Exhibit 99.2 and is incorporated by reference herein.

This information, including the exhibit attached hereto, shall not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), or otherwise subject to the liabilities of that section.

Item 8.01 Other Events.

On September 30, 2019, the Company issued a joint press release with Lumos relating to the Merger Agreement. A copy of the joint press release is attached hereto as Exhibit 99.1 and is incorporated by reference herein.

Additional Information about the Merger and Where to Find It

In connection with the Merger, the Company intends to file relevant materials with the SEC, including a proxy statement for its stockholders containing the information with respect to the Merger and the Merger Agreement specified in Schedule 14A promulgated under the Exchange Act and describing the proposed Merger. The proxy statement and other relevant materials (when they become available), and any other documents filed by the Company with the SEC, may be obtained free of charge at the SEC website at www.sec.gov. In addition, investors and security holders may obtain free copies of the documents filed with the SEC by the Company by directing a written request to: NewLink Genetics Corporation, 2503 South Loop Drive, Ames, IA 50010. Investors and security holders are urged to read the proxy statement and the other relevant materials when they become available before making any voting or investment decision with respect to the Merger.

Participants in the Solicitation

The Company and its directors and executive officers and Lumos and its directors and executive officers may be deemed to be participants in the solicitation of proxies from the stockholders of the Company in connection with the proposed transaction. Information regarding the special interests of these directors and executive officers in the merger will be included in the proxy statement referred to above. Additional information regarding the directors and executive officers of the Company is also included in the Company's Annual Report on Form 10-K for the year ended December 31, 2018 and the proxy statement for the Company's 2019 Annual Meeting of Stockholders. These documents are available free of charge at the SEC web site (www.sec.gov) and from the Company at the address described above.

Legal Notice Regarding Forward-Looking Statements

This Current Report on Form 8-K contains forward-looking statements. Forward-looking statements are generally identifiable by the use of words like “may,” “will,” “should,” “could,” “expect,” “anticipate,” “estimate,” “believe,” “intend,” or “project” or the negative of these words or other variations on these words or comparable terminology. The reader is cautioned not to put undue reliance on these forward-looking statements, as these statements are subject to numerous factors and uncertainties outside of our control that can make such statements untrue, including, but not limited to, the Merger not being timely completed, if completed at all; prior to the completion of the Merger, the Company’s or Lumos’ respective businesses experiencing disruptions due to transaction-related uncertainty or other factors making it more difficult to maintain relationships with employees, business partners or governmental entities; the parties being unable to successfully implement integration strategies or realize the anticipated benefits of the Merger, including the possibility that the expected synergies and cost reductions from the proposed acquisition will not be realized or will not be realized within the expected time period; risks related to cost reduction efforts; the Company’s workforce reduction costs may be greater than anticipated and the workforce reduction may have an adverse impact on the Company’s development activities. In addition, other factors that could cause actual results to differ materially are discussed in the Company’s filings with the SEC, including its most recent Annual Report on Form 10-K filed with the SEC, and its most recent Form 10-Q filings with the SEC. Investors and security holders are urged to read these documents free of charge on the SEC’s web site at <http://www.sec.gov>. The Company undertakes no obligation to publicly update or revise its forward-looking statements as a result of new information, future events or otherwise, except as required under applicable law.

Item 9.01 Financial Statements and Exhibits.

(d) Exhibits

Exhibit Number	Description
2.1*	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.
2.2	Form of Support Agreement, by and between NewLink Genetics Corporation and its directors and officers and by and between NewLink Genetics Corporation and Stine Seed Farm, Inc.
3.1	Amended and Restated Bylaws of the Company, adopted on September 30, 2019
10.1	Form of Lock-Up Agreement
10.2	Transition Agreement, by and between NewLink Genetics Corporation and Nicholas Vahanian, dated September 27, 2019
10.3	Employment Agreement, by and between NewLink Genetics Corporation and Carl Langren, dated September 30, 2019
10.4	Employment Agreement, by and between NewLink Genetics Corporation and Eugene Kennedy, dated September 30, 2019
10.5	Employment Agreement, by and between NewLink Genetics Corporation and Brad Powers, dated September 30, 2019
10.6	Employment Agreement, by and between NewLink Genetics Corporation and Lori Lawley, dated September 30, 2019
99.1	Press Release, dated September 30, 2019
99.2	Presentation titled "NewLink Genetics and Lumos Pharma Merger - Focused on Developing Therapies to Treat Rare Diseases" posted on September 30, 2019

*The schedules and exhibits to the merger agreement have been omitted pursuant to Item 601(b)(2) of Regulation S-K. A copy of any omitted schedule and/or exhibit will be furnished to the Securities and Exchange Commission upon request.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

NEWLINK GENETICS CORPORATION

Dated: September 30, 2019

By:

/s/Brad J. Powers

Name: Brad J. Powers

Title: General Counsel
(Principal Executive Officer)

**AGREEMENT AND PLAN OF MERGER
AND REORGANIZATION**

among:

NEWLINK GENETICS CORPORATION,
a Delaware corporation;

CYCLONE MERGER SUB, INC.,
a Delaware corporation; and

LUMOS PHARMA, INC.,
a Delaware corporation

Dated as of September 30, 2019

This document is intended solely for discussion purposes. It is not intended to create, and will not be deemed to create, a legally binding or enforceable agreement of any type or nature prior to the duly authorized and approved execution of this document by all parties and the delivery of an executed copy hereof by all parties to all other parties.

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AGREEMENT AND PLAN OF MERGER AND REORGANIZATION

THIS AGREEMENT AND PLAN OF MERGER AND REORGANIZATION (this "**Agreement**") is made and entered into as of September 30, 2019, by and among **NewLink Genetics Corporation**, a Delaware corporation ("**Parent**"), **Cyclone Merger Sub, Inc.**, a Delaware corporation and wholly owned subsidiary of Parent ("**Merger Sub**"), and **Lumos Pharma, Inc.**, a Delaware corporation (the "**Company**"). Certain capitalized terms used in this Agreement are defined in **Exhibit A**.

RECITALS

A. Parent and the Company intend to effect a merger of Merger Sub with and into the Company (the "**Merger**") in accordance with this Agreement and the DGCL. Upon consummation of the Merger, Merger Sub will cease to exist and the Company will become a wholly owned subsidiary of Parent.

B. The Parties intend that the Merger qualifies as a "reorganization" within the meaning of Section 368(a) of the Code, and by executing this Agreement, the Parties intend to adopt a plan of reorganization within the meaning of Treasury Regulations Sections 1.368-2(g) and 1.368-3.

C. The Parent Board has (i) determined that the Contemplated Transactions are fair to, advisable and in the best interests of Parent and its stockholders, (ii) approved and declared advisable this Agreement and the Contemplated Transactions, including the issuance of shares of the Parent Common Stock to the stockholders of the Company pursuant to the terms of this Agreement and (iii) determined to recommend, upon the terms and subject to the conditions set forth in this Agreement, that the stockholders of Parent vote to approve the Parent Stockholder Matters.

D. The Merger Sub Board has (i) determined that the Contemplated Transactions are fair to, advisable, and in the best interests of Merger Sub and its sole stockholder, (ii) approved and declared advisable this Agreement and the Contemplated Transactions and (iii) determined to recommend, upon the terms and subject to the conditions set forth in this Agreement, that the stockholder of Merger Sub votes to adopt this Agreement and thereby approve the Contemplated Transactions.

E. The Company Board has (i) determined that the Contemplated Transactions are fair to, advisable and in the best interests of the Company and its stockholders, (ii) approved and declared advisable this Agreement and the Contemplated Transactions and (iii) determined to recommend, upon the terms and subject to the conditions set forth in this Agreement, that the stockholders of the Company vote to approve the Company Stockholder Matters.

F. Concurrently with the execution and delivery of this Agreement and as a condition and inducement to Parent's willingness to enter into this Agreement, the officers, directors and stockholders of the Company listed on Section A of the Company Disclosure Schedule (solely in their capacity as stockholders of the Company) (the "**Company Signatories**") are executing lock-up agreements in substantially the form attached hereto as **Exhibit B** executed by the Company Signatories (each, a "**Company Lock-Up Agreement**").

G. Concurrently with the execution and delivery of this Agreement and as a condition and inducement to the Company's willingness to enter into this Agreement, the officers, directors and stockholder of Parent listed on Section A of the Parent Disclosure Schedule (solely in their capacity as stockholders of Parent) are executing (a) support agreements in favor of the Company in substantially the form attached hereto as **Exhibit C** (the "**Parent Stockholder Support Agreement**"), pursuant to which such Persons (the "**Parent Signatories**") have, subject to the terms and conditions set forth therein, agreed to vote all of their

shares of Parent Common Stock in favor of the Parent Stockholder Matters and against any proposals that compete with the Contemplated Transactions and (b) lock-up agreements in substantially the form attached hereto as **Exhibit B** executed by the Parent Signatories (each, a "**Parent Lock-Up Agreement**").

H. It is expected that immediately after the execution of this Agreement, the Company shall deliver the Company Stockholder Written Consent evidencing the Required Company Stockholder Vote.

AGREEMENT

The Parties, intending to be legally bound, agree as follows:

Section 1. DESCRIPTION OF TRANSACTION

1.1 **The Merger.** Upon the terms and subject to the conditions set forth in this Agreement, at the Effective Time, Merger Sub shall be merged with and into the Company, and the separate existence of Merger Sub shall cease. The Company will continue as the surviving corporation in the Merger (the "**Surviving Corporation**").

1.2 **Effects of the Merger.** The Merger shall have the effects set forth in this Agreement, the Certificate of Merger and in the applicable provisions of the DGCL. As a result of the Merger, the Company will become a wholly owned subsidiary of Parent.

1.3 **Closing; Effective Time.** Unless this Agreement is earlier terminated pursuant to the provisions of [Section 9.1](#), and subject to the satisfaction or waiver of the conditions set forth in [Sections 6, 7 and 8](#), the consummation of the Merger (the "**Closing**") shall take place remotely as promptly as practicable (but in no event later than the second Business Day following the satisfaction or waiver of the last to be satisfied or waived of the conditions set forth in [Sections 6, 7 and 8](#), other than those conditions that by their nature are to be satisfied at the Closing, but subject to the satisfaction or waiver of each of such conditions), or at such other time, date and place as Parent and the Company may mutually agree in writing. The date on which the Closing actually takes place is referred to as the "**Closing Date**." At the Closing, the Parties shall cause the Merger to be consummated by executing and filing with the Secretary of State of the State of Delaware a certificate of merger with respect to the Merger, satisfying the applicable requirements of the DGCL and in a form reasonably acceptable to Parent and the Company (the "**Certificate of Merger**"). The Merger shall become effective at the time of the filing of such Certificate of Merger with the Secretary of State of the State of Delaware or at such later time as may be specified in such Certificate of Merger with the consent of Parent and the Company (the time as of which the Merger becomes effective being referred to as the "**Effective Time**").

1.4 Certificate of Incorporation and Bylaws; Directors and Officers. At the Effective Time:

(a) the certificate of incorporation of the Surviving Corporation shall be amended and restated in its entirety to read identically to the certificate of incorporation of Merger Sub as in effect immediately prior to the Effective Time, until thereafter amended as provided by the DGCL and such certificate of incorporation; *provided, however*, that at the Effective Time (as part of the Certificate of Merger), the Surviving Company's certificate of incorporation shall be amended to (i) change the name of the Surviving Corporation to a name mutually agreed upon by Parent and the Company and (ii) make such other changes as are mutually agreed to by Parent and the Company;

(b) the certificate of incorporation of Parent shall be identical to the certificate of incorporation of Parent immediately prior to the Effective Time, until thereafter amended as provided by the DGCL and such certificate of incorporation, *provided, however*, that following the Effective Time, Parent shall file an amendment to its certificate of incorporation to (i) change the name of Parent to Lumos Pharma, Inc., (ii) as contemplated by Section 5.3(a)(i), effect the Nasdaq Reverse Split and (iii) make such other changes as are mutually agreeable to Parent and the Company;

(c) the bylaws of the Surviving Corporation shall be amended and restated in their entirety to read identically to the bylaws of Merger Sub as in effect immediately prior to the Effective Time (except that the name of the Surviving Corporation in such bylaws shall reflect the name identified in Section 1.4(a)), until thereafter amended as provided by the DGCL and such bylaws;

(d) the directors and officers of Parent, each to hold office in accordance with the certificate of incorporation and bylaws of Parent, shall be as set forth in Section 5.11; and

(e) the directors and officers of the Surviving Corporation, each to hold office in accordance with the certificate of incorporation and bylaws of the Surviving Corporation, shall be the directors and officers of Parent as set forth in Section 5.11, after giving effect to the provisions of Section 5.11, or such other persons as shall be mutually agreed upon by Parent and the Company.

1.5 Conversion of Shares.

(a) At the Effective Time, by virtue of the Merger and without any further action on the part of Parent, Merger Sub, the Company or any stockholder of the Company or Parent:

(i) any shares of Company Capital Stock held as treasury stock or held or owned by the Company or Merger Sub immediately prior to the Effective Time shall be canceled and retired and shall cease to exist, and no consideration shall be delivered in exchange therefor; and

(ii) subject to Section 1.5(c) and Section 1.8, each share of Company Capital Stock outstanding immediately prior to the Effective Time (excluding shares to be canceled pursuant to Section 1.5(a)(i), and excluding Dissenting Shares (as defined below)) shall be automatically converted solely into the right to receive a number of shares of Parent Common Stock equal to the amount determined pursuant to the Company Charter Amendment (as defined below) at the applicable Exchange Ratio set forth therein (in the aggregate, the "*Merger Consideration*").

(b) If any shares of Company Capital Stock outstanding immediately prior to the Effective Time are unvested or are subject to a repurchase option or a risk of forfeiture under any applicable restricted stock purchase agreement or other similar agreement with the Company, then the shares of Parent Common Stock issued in exchange for such shares of Company Capital Stock will to the same extent be unvested and subject to the same repurchase option or risk of forfeiture, and such shares of Parent Common Stock shall accordingly be marked with appropriate legends. The Company shall take all actions that may be reasonably necessary to ensure that, from and after the Effective Time, Parent is entitled to exercise any such repurchase option or other right set forth in any such restricted stock purchase agreement or other agreement in accordance with its terms.

(c) No fractional shares of Parent Common Stock shall be issued in connection with the Merger, and no certificates or scrip for any such fractional shares shall be issued. Any holder of Company Capital Stock who would otherwise be entitled to receive a fraction of a share of Parent Common Stock (after aggregating all fractional shares of Parent Common Stock issuable to such holder) shall, in lieu of such fraction of a share and upon surrender by such holder of a letter of transmittal in accordance with Section 1.7 and any accompanying documents as required therein, be paid in cash the dollar amount (rounded to the nearest whole cent), without interest, determined by multiplying such fraction by the Parent Closing Price.

(d) All Company Options outstanding immediately prior to the Effective Time under the Company Plans shall be treated in accordance with Section 5.4.

(e) Each share of common stock, \$0.0001 par value per share, of Merger Sub issued and outstanding immediately prior to the Effective Time shall be converted into and exchanged for one validly issued, fully paid and nonassessable share of common stock, \$0.0001 par value per share, of the

Surviving Corporation. Each stock certificate of Merger Sub evidencing ownership of any such shares shall, as of the Effective Time, evidence ownership of such shares of common stock of the Surviving Corporation.

1.6 **Closing of the Company's Transfer Books.** At the Effective Time: (a) all shares of Company Capital Stock outstanding immediately prior to the Effective Time shall be treated in accordance with Section 1.5(a), and all holders of certificates representing shares of Company Capital Stock that were outstanding immediately prior to the Effective Time shall cease to have any rights as stockholders of the Company; and (b) the stock transfer books of the Company shall be closed with respect to all shares of Company Capital Stock outstanding immediately prior to the Effective Time. No further transfer of any such shares of Company Capital Stock shall be made on such stock transfer books after the Effective Time. If, after the Effective Time, a valid certificate previously representing any shares of Company Capital Stock outstanding immediately prior to the Effective Time (a "**Company Stock Certificate**") is presented to the Exchange Agent or to the Surviving Corporation, such Company Stock Certificate shall be canceled and shall be exchanged as provided in Sections 1.5 and 1.7.

1.7 **Surrender of Certificates.**

(a) On or prior to the Closing Date, Parent and the Company shall agree upon and select a reputable bank, transfer agent or trust company to act as exchange agent in the Merger (the "**Exchange Agent**"). At the Effective Time, Parent shall deposit with the Exchange Agent: (i) certificates or evidence of book-entry shares representing the Parent Common Stock issuable pursuant to Section 1.5(a) and (ii) cash sufficient to make payments in lieu of fractional shares in accordance with Section 1.5(c). The Parent Common Stock and cash amounts so deposited with the Exchange Agent, together with any dividends or distributions received by the Exchange Agent with respect to such shares, are referred to collectively as the "**Exchange Fund**."

(b) Promptly after the Effective Time, the Parties shall cause the Exchange Agent to mail to the Persons who were record holders of shares of Company Capital Stock that were converted into the right to receive the Merger Consideration: (i) a letter of transmittal in customary form and containing such provisions as Parent may reasonably specify (including a provision confirming that delivery of Company Stock Certificates shall be effected, and risk of loss and title to Company Stock Certificates shall pass, only upon proper delivery of such Company Stock Certificates to the Exchange Agent); and (ii) instructions for effecting the surrender of Company Stock Certificates in exchange for shares of Parent Common Stock. Upon surrender of a Company Stock Certificate to the Exchange Agent for exchange, together with a duly executed letter of transmittal and such other documents as may be reasonably required by the Exchange Agent or Parent: (A) the holder of such Company Stock Certificate shall be entitled to receive in exchange therefor a certificate or certificates or book-entry shares representing the Merger Consideration (in a number of whole shares of Parent Common Stock) that such holder has the right to receive pursuant to the provisions of Section 1.5(a) (and cash in lieu of any fractional share of Parent Common Stock, pursuant to the provisions of Section 1.5(c)); and (B) the Company Stock Certificate so surrendered shall be canceled. Until surrendered as contemplated by this Section 1.7(b), each Company Stock Certificate shall be deemed, from and after the Effective Time, to represent only the right to receive a certificate or certificates or book-entry shares of Parent Common Stock, representing the Merger Consideration (and cash in lieu of any fractional share of Parent Common Stock). If any Company Stock Certificate shall have been lost, stolen or destroyed, Parent may, in its discretion and as a condition precedent to the delivery of any shares of Parent Common Stock, require the owner of such lost, stolen or destroyed Company Stock Certificate to provide an applicable affidavit with respect to such Company Stock Certificate and post a bond indemnifying Parent against any claim suffered by Parent related to the lost, stolen or destroyed Company Stock Certificate as Parent may reasonably request. In the event of a transfer of ownership of a Company Stock Certificate that is not registered in the transfer records of the Company, payment of the Merger Consideration in respect of such Company Stock Certificate may be made to a Person other than the Person in whose name such Company Stock Certificate so surrendered is registered if such Company Stock Certificate shall be properly endorsed or otherwise be in proper form for transfer and the Person requesting such payment shall pay any transfer or other Taxes required by reason of the transfer or establish to the reasonable satisfaction of Parent that such Taxes have been paid or are not applicable. The Merger Consideration and any dividends or other distributions as are payable pursuant to Section 1.7(c) shall be deemed to have been in full satisfaction of any and all rights pertaining to Company Capital Stock formerly represented by such Company Stock Certificates.

(c) No dividends or other distributions declared or made with respect to Parent Common Stock with a record date on or after the Effective Time shall be paid to the holder of any unsurrendered Company Stock Certificate with respect to the shares of Parent Common Stock that such holder has the right to receive in the Merger until such holder surrenders such Company Stock Certificate or provides an affidavit of loss or destruction in lieu thereof in accordance with this Section 1.7 (at which time (or, if later, on the applicable payment date) such holder shall be entitled, subject to the effect of applicable abandoned property, escheat or similar Laws, to receive all such dividends and distributions, without interest).

(d) Any portion of the Exchange Fund that remains undistributed to holders of Company Stock Certificates as of the date that is one year after the Closing Date shall be delivered to Parent upon demand, and any holders of Company Stock Certificates who have not theretofore surrendered their Company Stock Certificates in accordance with this Section 1.7 shall thereafter look only to Parent for satisfaction of their claims for Parent Common Stock, cash in lieu of fractional shares of Parent Common Stock, and any dividends or distributions with respect to shares of Parent Common Stock.

(e) No Party shall be liable to any holder of any Company Stock Certificate or to any other Person with respect to any shares of Parent Common Stock (or dividends or distributions with respect thereto) or for any cash amounts delivered to any public official pursuant to any applicable abandoned property Law, escheat Law or similar Law.

1.8 **Appraisal Rights.**

(a) Notwithstanding any provision of this Agreement to the contrary, shares of Company Capital Stock that are outstanding immediately prior to the Effective Time and which are held by stockholders who have exercised and perfected appraisal rights for such shares of Company Capital Stock in accordance with the DGCL (collectively, the "**Dissenting Shares**") shall not be converted into or represent the right to receive the Merger Consideration described in Section 1.5 attributable to such Dissenting Shares. Such stockholders shall be entitled to receive payment of the appraised value of such shares of Company Capital Stock held by them in accordance with the DGCL, unless and until such stockholders fail to perfect or effectively withdraw or otherwise lose their appraisal rights under the DGCL. All Dissenting Shares held by stockholders who shall have failed to perfect or shall have effectively withdrawn or lost their right to appraisal of such shares of Company Capital Stock under the DGCL (whether occurring before, at or after the Effective Time) shall thereupon be deemed to be converted into and to have become exchangeable for, as of the Effective Time, the right to receive the Merger Consideration, without interest, attributable to such Dissenting Shares upon their surrender in the manner provided in Sections 1.5 and 1.7.

(b) The Company shall give Parent prompt written notice of any demands by dissenting stockholders received by the Company, withdrawals of such demands and any other instruments served on the Company and any material correspondence received by the Company in connection with such demands, and Parent shall have the right to direct all negotiations and proceedings with respect to such demands; provided that the Company shall have the right to participate in such negotiations and proceedings. The Company shall not, except with the prior written consent of Parent, voluntarily make any payment with respect to, or settle or offer to settle, any such demands, or approve any withdrawal of any such demands or agree to do any of the foregoing.

1.9 **Further Action.** If, at any time after the Effective Time, any further action is determined by the Surviving Corporation to be necessary or desirable to carry out the purposes of this Agreement or to vest the Surviving Corporation with full right, title and possession of and to all rights and property of the Company, then the officers and directors of the Surviving Corporation shall be fully authorized, and shall use their and its commercially reasonable efforts (in the name of the Company, in the name of Merger Sub, in the name of the Surviving Corporation and otherwise) to take such action.

1.10 **Withholding.** The Parties and the Exchange Agent shall be entitled to deduct and withhold from the consideration otherwise payable pursuant to this Agreement to any holder of Company Capital Stock or any other Person such amounts as such Party or the Exchange Agent is required to deduct and withhold under the Code or any other Law with respect to the making of such payment. To the extent that amounts are so deducted and withheld and paid to the appropriate Person, such deducted and withheld amounts shall be treated for all purposes of this Agreement as having been paid to the Person in respect of whom such deduction and withholding was made.

Section 2. REPRESENTATIONS AND WARRANTIES OF THE COMPANY

Subject to Section 10.13(b), except as set forth in the disclosure schedule delivered by the Company to Parent (the "**Company Disclosure Schedule**"), the Company represents and warrants to Parent and Merger Sub as follows:

2.1 **Due Organization; No Subsidiaries.**

(a) The Company is a corporation duly incorporated, validly existing and in good standing under the Laws of Delaware and has all necessary corporate power and authority: (i) to conduct its business in the manner in which its business is currently being conducted; (ii) to own or lease and use its property and assets in the manner in which its property and assets are currently owned or leased and used; and (iii) to perform its obligations under all Contracts by which it is bound.

(b) The Company is duly licensed and qualified to do business, and is in good standing (to the extent applicable in such jurisdiction), under the Laws of all jurisdictions where the nature of its business requires such licensing or qualification other than in jurisdictions where the failure to be so qualified individually or in the aggregate would not be reasonably expected to have a Company Material Adverse Effect.

(c) The Company does not have and has never had any Subsidiaries.

(d) The Company is not and has not been, directly or indirectly, a party to, member of or participant in any partnership, joint venture or similar business Entity. The Company has not agreed to make, is not obligated to make, and is not bound by any Contract under which it may become obligated to make, any future investment in or capital contribution to any other Entity. The Company has not, at any time, been a general partner of, or has otherwise been liable for any of the debts or other obligations of, any general partnership, limited partnership or other Entity.

2.2 **Organizational Documents.** The Company has made available to Parent accurate and complete copies of the Organizational Documents of the Company in effect as of the date of this Agreement. The Company is not in breach or violation of its Organizational Documents.

2.3 **Authority; Binding Nature of Agreement.**

(a) The Company has all necessary corporate power and authority to enter into and to perform its obligations under this Agreement and, subject to receipt of the Required Company Stockholder Vote, to perform its obligations hereunder and to consummate the Contemplated Transactions. The Company Board (at meetings duly called and held) has (i) determined that the Contemplated Transactions are fair to, advisable and in the best interests of the Company and its stockholders, (ii) approved and declared advisable this Agreement and the Contemplated Transactions and (iii) determined to recommend, upon the terms and subject to the conditions set forth in this Agreement, that the stockholders of the Company vote in favor of the Company Stockholder Matters.

(b) This Agreement has been duly executed and delivered by the Company and assuming the due authorization, execution and delivery by Parent and Merger Sub, constitutes the legal, valid and binding obligation of the Company, enforceable against the Company in accordance with its terms, subject to the Enforceability Exceptions. The Company Board has approved the Contemplated Transactions.

2.4 **Vote Required.** The affirmative vote (or written consent) of (a) the holders of a majority of the shares of Company Common Stock and Company Preferred Stock, voting as a single class, and (b) the holders of a majority of the shares of Company Preferred Stock, voting together as a single class, (c) the holders of at least thirty two point three percent (32.3%) of the outstanding shares of Series B Preferred Stock, voting together as a single class, in each case, outstanding on the record date for the written consent in lieu of a meeting pursuant to Section 228 of the DGCL approving the Company Stockholder Matters, in a

form reasonably acceptable to Parent (collectively, the “**Company Stockholder Written Consent**”) and entitled to vote thereon (collectively, the “**Required Company Stockholder Vote**”), is the only vote (or written consent) of the holders of any class or series of Company Capital Stock necessary to adopt and approve the Company Stockholder Matters.

2.5 **Non-Contravention; Consents.** Subject to obtaining the Required Company Stockholder Vote and the filing of the Certificate of Merger required by the DGCL, neither (x) the execution, delivery or performance of this Agreement by the Company, nor (y) the consummation of the Contemplated Transactions, will directly or indirectly (with or without notice or lapse of time):

(a) contravene, conflict with or result in a violation of any of the provisions of the Company’s Organizational Documents;

(b) contravene, conflict with or result in a material violation of, or to the Knowledge of the Company give any Governmental Body or other Person the right to challenge the Contemplated Transactions or to exercise any material remedy or obtain any material relief under, any Law or any order, writ, injunction, judgment or decree to which the Company, or any of the assets owned or used by the Company, is subject, except as would not reasonably be expected to be material to the Company or its business;

(c) contravene, conflict with or result in a violation of any of the terms or requirements of, or give any Governmental Body the right to revoke, withdraw, suspend, cancel, terminate or modify, any Governmental Authorization that is held by the Company, except as would not reasonably be expected to be material to the Company or its business;

(d) contravene, conflict with or result in a violation or breach of, or result in a default under, any provision of any Company Material Contract, or give any Person the right to: (i) declare a default or exercise any remedy under any Company Material Contract; (ii) any material payment, rebate, chargeback, penalty or change in delivery schedule under any Company Material Contract; (iii) accelerate the maturity or performance of any Company Material Contract; or (iv) cancel, terminate or modify any term of any Company Material Contract, except in the case of any non-material breach, default, penalty or modification; or

(e) result in the imposition or creation of any Encumbrance upon or with respect to any asset owned or used by the Company (except for Permitted Encumbrances).

Except for (i) any Consent set forth on Section 2.5 of the Company Disclosure Schedule under any Company Contract, (ii) the Required Company Stockholder Vote, (iii) the filing of the Certificate of Merger with the Secretary of State of the State of Delaware pursuant to the DGCL, and (iv) such consents, waivers, approvals, orders, authorizations, registrations, declarations and filings as may be required under applicable federal and state securities Laws, the Company is not and will not be required to make any filing with or give any notice to, or to obtain any Consent from, any Person in connection with (A) the execution, delivery or performance of this Agreement and the Company Lock-Up Agreements or (B) the consummation of the Contemplated Transactions, which if individually or in the aggregate were not given or obtained, would reasonably be expected to prevent or materially delay the ability of Parent and Merger Sub to consummate the Contemplated Transactions. The Company Board has taken and will take all actions necessary to ensure that the restrictions applicable to business combinations contained in Section 203 of the DGCL are, and will be, inapplicable to the execution, delivery and performance of this Agreement, the Company Lock-Up Agreements and to the consummation of the Contemplated Transactions. No other state takeover statute or similar Law applies or purports to apply to the Merger, this Agreement, the Company Lock-Up Agreements or any of the Contemplated Transactions.

2.6 **Capitalization.**

(a) The authorized Company Capital Stock as of the date of this Agreement consists of (i) 36,000,000 shares of Company Common Stock, par value \$0.0001 per share, of which 8,933,537 shares have been issued and are outstanding as of the date of this Agreement and of which 1,350,000 shares are held by the Company as treasury shares as of the date of this Agreement, and (ii) 21,170,801 shares of preferred stock, par value \$0.0001 per share (the “**Company Preferred Stock**”), of which 21,170,801 have been issued and are outstanding as of the date of this Agreement, consisting of 11,204,513 shares of Series A Preferred Stock and 9,966,288 shares of Series B Preferred Stock. Section 2.6(a) of the Company Disclosure Schedule lists, as of the date of this Agreement each record holder of issued and outstanding Company Capital Stock and the number and type of shares of Company Capital Stock held by such holder.

(b) All of the outstanding shares of Company Common Stock and Company Preferred Stock have been duly authorized and validly issued, and are fully paid and nonassessable. Except as set forth in the Company Bylaws or Investor Agreements, none of the outstanding shares of Company Capital Stock is entitled or subject to any preemptive right, right of participation, right of maintenance or any similar right and none of the outstanding shares of Company Capital Stock is subject to any right of first refusal in favor of the Company. Except as contemplated herein and in the Company Bylaws and Investor Agreements, there is no Company Contract relating to the voting or registration of, or restricting any Person from purchasing, selling, pledging or otherwise disposing of (or granting any option or similar right with respect to), any shares of Company Capital Stock. The Company is not under any obligation, nor is it bound by any Contract pursuant to which it may become obligated, to repurchase, redeem or otherwise acquire any outstanding shares of Company Capital Stock or other securities. Section 2.6(b) of the Company Disclosure Schedule accurately and completely lists all repurchase or forfeiture rights held by the Company with respect to shares of Company Capital Stock (including shares issued pursuant to the exercise of stock options) and specifies which of those repurchase rights are currently exercisable and whether the holder of such shares of Company Capital Stock timely filed an election with the relevant Governmental Bodies under Section 83(b) of the Code with respect to such shares.

(c) Except for the Company Plans (and awards granted thereunder), the Company does not have any stock option plan or any other plan, program, agreement or arrangement providing for any equity-based compensation for any Person. As of the date of this Agreement, the Company has reserved 3,711,490 shares of Company Common Stock for issuance under the Company Plans, of which 283,537 shares have been issued and are currently outstanding, 2,229,990 shares have been reserved for issuance upon exercise of Company Options previously granted and currently outstanding under the Company Plans, and 1,197,963 shares of Company Common Stock remain available for future issuance pursuant to the Company Plans. Only shares of Company Common Stock are subject to Company Options. Section 2.6(c) of the Company Disclosure Schedule sets forth the following information with respect to each Company Option outstanding as of the date of this Agreement: (i) the name of the optionee; (ii) the number of shares of Company Common Stock subject to such Company Option at the time of grant; (iii) the number of shares of Company Common Stock subject to such Company Option as of the date of this Agreement; (iv) the exercise price of such Company Option; (v) the date on which such Company Option was granted; (vi) the applicable vesting schedule, including the number of vested and unvested shares as of the date of this Agreement and any acceleration provisions; (vii) the date on which such Company Option expires; and (viii) whether such Company Option is intended to constitute an “incentive stock option” (as defined in the Code) or a non-qualified stock option. The Company has made available to Parent accurate and complete copies of the Company Plans and all forms of stock option and other award agreements evidencing outstanding options granted thereunder. No vesting of Company Options will accelerate in connection with the closing of the Contemplated Transactions.

(d) Except for the Company Options set forth on Section 2.6(c) of the Company Disclosure Schedule, there is no: (i) outstanding subscription, option, call, warrant or right (whether or not currently exercisable) to acquire any shares of the capital stock or other securities of the Company; (ii) outstanding security, instrument or obligation that is or may become convertible into or exchangeable for any shares of the capital stock or other securities of the Company; or (iii) condition or circumstance that is reasonably likely to give rise to or provide a basis for the assertion of a claim by any Person to the effect that such Person is entitled to acquire or receive any shares of capital stock or other securities of the Company. There are no outstanding or authorized stock appreciation, phantom stock, profit participation or other similar rights with respect to the Company.

(e) All outstanding shares of Company Common Stock, Company Preferred Stock, Company Options, and other securities of the Company have been issued and granted in material compliance with (i) all applicable securities Laws and other applicable Law and (ii) all requirements set forth in applicable Contracts.

2.7 **Financial Statements.**

(a) Concurrently with the execution hereof, the Company has provided to Parent true and complete copies of (i) the Company’s audited balance sheets at December 31, 2018 and 2017 together with related audited statements of income, stockholders’ equity and cash flows, and notes thereto, of the Company for the fiscal years then ended and (ii) the Company Unaudited Interim Balance Sheet, together with the unaudited statements of income, stockholders’ equity and cash flows of the Company for the period reflected in the Company Unaudited Interim Balance Sheet (collectively, the “**Company Financials**”). The Company Financials were prepared in accordance with GAAP (except as may be indicated in the notes to such financial statements and except that the unaudited financial statements may not contain footnotes and are subject to normal and recurring year-end adjustments) and fairly present, in all material respects, the financial position and operating results of the Company as of the dates and for the periods indicated therein.

(b) The Company maintains books and records reflecting its assets and liabilities and maintains a system of internal accounting controls designed to provide reasonable assurance: (i) that transactions are executed in accordance with management’s general or specific authorizations; (ii) that transactions are recorded as necessary to permit preparation of the financial statements of the Company in accordance with GAAP; and (iii) regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the Company’s assets that could have a material effect on the financial statements of the Company. The Company maintains internal control over financial reporting that provides reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes.

(c) Section 2.7(c) of the Company Disclosure Schedule lists, and the Company has delivered to Parent accurate and complete copies of the documentation creating or governing, all securitization transactions and “off-balance sheet arrangements” (as defined in Item 303(c) of Regulation S-K under the Exchange Act) effected by the Company since January 1, 2017.

(d) There have been no formal internal investigations regarding financial reporting or accounting policies and practices discussed with, reviewed by or initiated at the direction of the chief executive officer, chief financial officer or general counsel of the Company, the Company Board or any committee thereof. Neither the Company nor its independent auditors have identified (i) any significant deficiency or material weakness in the design or operation of the system of internal accounting controls utilized by the Company, (ii) any fraud, whether or not material, that involves the Company, the Company’s management or other employees who have a role in the preparation of financial statements or the internal accounting controls utilized by the Company or (iii) any claim or allegation regarding any of the foregoing.

2.8 **Absence of Changes.** Since the date of the Company Unaudited Interim Balance Sheet, the Company has conducted its business only in the Ordinary Course of Business (except for the execution and performance of this Agreement and the discussions, negotiations and transactions related thereto) and there has not been any (a) Company Material Adverse Effect or (b) action, event or occurrence that would have required consent of Parent pursuant to Section 4.2(b) had such action, event or occurrence taken place after the execution and delivery of this Agreement.

2.9 **Absence of Undisclosed Liabilities.** As of the date hereof, the Company does not have any liability, indebtedness, obligation or expense of any kind, whether accrued, absolute, contingent, matured or unmatured (whether or not required to be reflected in the financial statements in accordance with GAAP) (each a “**Liability**”), individually or in the aggregate, of a type required to be recorded or reflected on a balance sheet or disclosed in the footnotes thereto under GAAP, except for: (a) Liabilities disclosed, reflected or reserved against in the Company Unaudited Interim Balance Sheet; (b) Liabilities that have been incurred by the Company since the date of the Company Unaudited Interim Balance Sheet in the Ordinary Course of Business; (c) Liabilities for performance of obligations of the Company under Company Contracts; (d) Liabilities incurred in connection with the Contemplated Transactions; (e) Liabilities which would not, individually or in the aggregate, reasonably be expected to be material to the Company; and (f) Liabilities described in Section 2.9 of the Company Disclosure Schedule.

2.10 **Title to Assets.** The Company owns, and has good and valid title to, or, in the case of leased properties and assets, valid leasehold interests in, all tangible properties or tangible assets and equipment used or held for use in its business or operations or purported to be owned by it that are material to the Company or its business, including: (a) all tangible assets reflected on the Company Unaudited Interim Balance Sheet; and (b) all other tangible assets reflected in the books and records of the Company as being owned by the Company. All of such assets are owned or, in the case of leased assets, leased by the Company free and clear of any Encumbrances, other than Permitted Encumbrances.

2.11 **Real Property; Leasehold.** The Company does not own and has never owned any real property. The Company has made available to Parent: (a) an accurate and complete list of all real properties with respect to which the Company directly or indirectly holds a valid leasehold interest as well as any other real estate that is in the possession of or leased by the Company, and (b) copies of all leases under which any such real property is possessed (the “*Company Real Estate Leases*”), each of which is in full force and effect, with no existing material default thereunder. The Company’s use and operation of each such leased property conforms to all applicable Laws in all material respects, and the Company has exclusive possession of each such leased property and has not granted any occupancy rights to tenants or licensees with respect to such leased property. In addition, each such leased property is free and clear of all Encumbrances other than Permitted Encumbrances.

2.12 **Intellectual Property.**

(a) **Section 2.12(a)** of the Company Disclosure Schedule identifies each item of material Company IP that is the subject of a registration or application in any jurisdiction (“*Company Registered IP*”), including, with respect to each patent and patent application: (i) the name of the applicant/registrant, (ii) the jurisdiction of application/registration, (iii) the application or registration number and (iv) any other co-owners. To the Knowledge of the Company, each of the patents and patent applications included in **Section 2.12(a)** of the Company Disclosure Schedule properly identifies by name each and every inventor of the inventions claimed therein as determined in accordance with applicable Laws of the United States. To the Knowledge of the Company, as of the date of this Agreement, no cancellation, interference, opposition, reissue, reexamination or other proceeding of any nature (other than office actions or similar communications issued by any Governmental Body in the ordinary course of prosecution of any pending applications for registration) is pending or threatened in writing, in which the scope, validity, enforceability or ownership of any Company IP is being or has been contested or challenged. To the Knowledge of the Company, each item of Company IP is valid and enforceable, and with respect to Company Registered IP, subsisting. Except as set forth in **Section 2.12(a)** of the Company Disclosure Schedule, there are no actions that must be taken within ninety (90) days of the Closing, the failure of which will result in the abandonment, lapse or cancellation of any Company Registered IP.

(b) Except as has not had and would not reasonably be expected to have, individually or in the aggregate, a Company Material Adverse Effect, the Company exclusively owns, is the sole assignee of, or has exclusively licensed all material Company IP (other than as disclosed on **Section 2.12(b)** of the Company Disclosure Schedule), free and clear of all Encumbrances other than Permitted Encumbrances. The Company IP and the Intellectual Property Rights licensed to the Company pursuant to a valid, enforceable written agreement constitute all Intellectual Property Rights used in, material to or otherwise necessary for the operation of the Company’s business as currently conducted. To the Knowledge of the Company, each Company Associate involved in the creation or development of any material Company IP, pursuant to such Company Associate’s activities on behalf of the Company, has signed a valid and enforceable written agreement containing an assignment of such Company Associate’s rights in such Company IP to the Company. Each Company Associate who has or has had access to the Company’s trade secrets or confidential information has signed a valid and enforceable written agreement containing confidentiality provisions protecting the Company IP, trade secrets and confidential information. The Company has taken commercially reasonable steps to protect and preserve the confidentiality of its trade secrets and confidential information.

(c) To the Knowledge of the Company, no funding, facilities or personnel of any Governmental Body or any university, college, research institute or other educational institution has been used to create Company IP, except for any such funding or use of facilities or personnel that does not result in such Governmental Body or institution obtaining ownership rights or a license to such Company IP or the right to receive royalties for the practice of such Company IP.

(d) **Section 2.12(d)** of the Company Disclosure Schedule sets forth each license agreement pursuant to which the Company (i) is granted a license under any material Intellectual Property Right owned by any third party that is used by the Company in its business as currently conducted (each a “*Company In-bound License*”) or (ii) grants to any third party a license under any material Company IP or material Intellectual Property Right licensed to the Company under a Company In-bound License (each a “*Company Out-bound License*”) (provided, that, Company In-bound Licenses shall not include, when entered into in the Ordinary Course of Business, material transfer agreements, clinical trial agreements, agreements with Company Associates, services agreements, commercially available Software-as-a-Service offerings or off-the-shelf software licenses; and Company Out-bound Licenses shall not include, when entered into in the Ordinary Course of Business, material transfer agreements, clinical trial agreements, services agreements, or non-exclusive outbound licenses). All Company In-bound Licenses and Company Out-bound Licenses are in full force and effect and are valid, enforceable and binding obligations of the Company and, to the Knowledge of the Company, each other party to such Company In-bound Licenses or Company Out-bound Licenses. Neither the Company, nor to the Knowledge of the Company, any other party to such Company In-bound Licenses or Company Out-bound Licenses, is in material breach under any Company In-bound Licenses or Company Out-bound Licenses.

(e) To the Knowledge of the Company: (i) the operation of the businesses of the Company as currently conducted does not infringe, misappropriate or otherwise violate any Intellectual Property Rights of any other Person and (ii) no other Person is infringing, misappropriating or otherwise violating any Company IP. No Legal Proceeding is pending (or, to the Knowledge of the Company, is threatened in writing) (A) against the Company alleging that the operation of the businesses of the Company infringes or constitutes the misappropriation or other violation of any Intellectual Property Rights of another Person or (B) by the Company alleging that another Person has infringed, misappropriated or otherwise violated any of the Company IP or any Intellectual Property Rights exclusively licensed to the Company. Since January 1, 2016, the Company has not received any written notice or other written communication alleging that the operation of the business of the Company infringes or constitutes the misappropriation or other violation of any Intellectual Property Right of another Person.

(f) None of the Company IP or, to the Knowledge of the Company, any material Intellectual Property Rights exclusively licensed to the Company is subject to any pending or outstanding injunction, directive, order, judgment or other disposition of dispute that adversely and materially restricts the use, transfer, registration or licensing by the Company of any such Company IP or material Intellectual Property Rights exclusively licensed to the Company.

(g) To the Knowledge of the Company, the Company and the operation of the Company’s business are in substantial compliance with all Laws pertaining to data privacy and data security of any personally identifiable information and sensitive business information (collectively, “*Sensitive Data*”) except to the extent that such noncompliance has not and would not reasonably be expected to have a Company Material Adverse Effect. To the Knowledge of the Company, since January 1, 2016, there have been (i) no material losses or thefts of data or security breaches relating to Sensitive Data used in the business of the Company, (ii) no violations of any security policy of the Company regarding any such Sensitive Data used in the business of the Company and (iii) no unauthorized access, unauthorized use or unintended or improper disclosure of any Sensitive Data used in the business of the Company, in each case of (i) through (iii), except as would not reasonably be expected to, individually or in the aggregate, have a Company Material Adverse Effect. The Company has taken commercially reasonable steps and implemented reasonable disaster recovery and security plans and procedures to protect the information technology systems used in, material to or necessary for operation of the Company’s business as currently conducted from unauthorized use or access. To the Knowledge of the Company, there have been no material malfunctions or unauthorized intrusions or breaches of the information technology systems used in, material to or necessary for the operation of the Company’s business as currently conducted.

2.13 **Agreements, Contracts and Commitments.**

(a) **Section 2.13(a)** of the Company Disclosure Schedule lists the following Company Contracts in effect as of the date of this Agreement (and, except with respect to clauses (xii) and (xiii) below, other than any Benefit Plans) (each, a “*Company Material Contract*” and collectively, the “*Company Material Contracts*”):

(i) each Company Contract relating to any agreement of indemnification or guaranty not entered into in the Ordinary Course of Business;

(ii) each Company Contract containing (A) any covenant limiting the freedom of the Company or the Surviving Corporation to engage in any line of business or compete with any Person, (B) any most-favored pricing arrangement, (C) any exclusivity provision or (D) any non-solicitation provision, in each case, except for restrictions that would not materially affect the ability of the Company to conduct its business;

(iii) each Company Contract relating to capital expenditures and requiring payments after the date of this Agreement in excess of \$75,000 pursuant to its express terms and not cancelable without penalty;

(iv) each Company Contract relating to the disposition or acquisition of material assets or any ownership interest in any Entity, in each case, involving payments in excess of \$75,000, other than Company Contracts in which the applicable acquisition or disposition has been consummated and there are no material ongoing obligations;

(v) each Company Contract relating to any mortgages, indentures, loans, notes or credit agreements, security agreements or other agreements or instruments relating to the borrowing of money or extension of credit or creating any material Encumbrances with respect to any assets of the Company or any loans or debt obligations with officers or directors of the Company;

(vi) each Company Contract requiring payment by or to the Company after the date of this Agreement in excess of \$75,000 pursuant to its express terms relating to: (A) any distribution agreement (identifying any that contain exclusivity provisions); (B) any agreement involving provision of services or products with respect to any pre-clinical or clinical development activities of the Company; (C) any dealer, distributor, joint marketing, alliance, joint venture, cooperation, development or other agreement currently in force under which the Company has continuing obligations to develop or market any product, technology or service, or any agreement pursuant to which the Company has continuing obligations to develop any Intellectual Property Rights that will not be owned, in whole or in part, by the Company; or (D) any Company Contract with any third party providing any services relating to the manufacture or production of any product, service or technology of the Company or any Contract to sell, distribute or commercialize any products or service of the Company;

(vii) each Company Contract with any financial advisor, broker, finder, investment banker or other similar Person, providing advisory services to the Company in connection with the Contemplated Transactions;

(viii) each Company Real Estate Lease;

(ix) each Company Contract with any Governmental Body (other than clinical trial agreements for clinical trial studies, cooperative research and development agreements and confidentiality agreements);

(x) each Company Out-bound License and Company In-bound License, and each Company Contract containing a covenant not to sue or otherwise enforce any Intellectual Property Rights;

(xi) each Company Contract containing any royalty, dividend or similar arrangement based on the revenues or profits of the Company;

(xii) each (A) Company Contract, offer letter, employment agreement or other agreement with any employee, (1) is not immediately terminable at will by the Company without advance notice, severance, or other cost or liability or (2) provides for retention payments, change of control payments, severance, accelerated vesting or any payment or benefit that may or will become due as a result of the Merger (whether alone or in connection with any other event) and (B) each Company Contract, independent contractor agreement, or other agreement with any consultant or service provider that (1) is not immediately terminable at will by the Company without more than 30 days’ prior notice, severance, or other cost or liability or (2) provides for retention payments, change of control payments, severance, accelerated vesting or any payment or benefit that may or will become due as a result of the Merger (whether alone or in connection with any other event);

(xiii) each Company Contract providing any option to receive a license or other right, any right of first negotiation, any right of first refusal or any similar right to any Person related to any material Company IP or material Intellectual Property Right licensed to the Company under a Company In-bound License;

(xiv) each Company Contract entered into in settlement of any legal proceeding or other dispute; or

(xv) any other Company Contract that is not terminable at will (with no penalty or payment) by the Company, and (A) which involves payment or receipt by the Company after the date of this Agreement under any such agreement, Contract or commitment of more than \$75,000 in the aggregate, or obligations after the date of this Agreement in excess of \$75,000 in the aggregate or (B) that is material to the business or operations of the Company.

(b) The Company has delivered or made available to Parent complete copies of all Company Material Contracts, including all amendments thereto. There are no Company Material Contracts that are not in written form. The Company has not, nor to the Company's Knowledge, as of the date of this Agreement has any other party to a Company Material Contract, breached, violated or defaulted under, or received notice that it breached, violated or defaulted under, any of the terms or conditions of any Company Material Contract in such manner as would permit any other party to cancel or terminate any such Company Material Contract, or would permit any other party to seek damages which would reasonably be expected to be material to the Company or its business. As to the Company, as of the date of this Agreement, each Company Material Contract is valid, binding, enforceable and in full force and effect, subject to the Enforceability Exceptions. No Person is renegotiating, or has a right pursuant to the terms of any Company Material Contract to change, any material amount paid or payable to the Company under any Company Material Contract or any other material term or provision of any Company Material Contract.

2.14 **Compliance; Permits; Restrictions.**

(a) The Company is, and since January 1, 2016, has been, in compliance in all material respects with all applicable Laws, including the Federal Food, Drug, and Cosmetic Act ("FDCA"), the Food and Drug Administration ("FDA") regulations adopted thereunder, the Public Health Service Act ("PHSA") and its implementing regulations and any other similar Law administered or promulgated by the FDA or other comparable Governmental Body responsible for regulation of the development, clinical testing, manufacturing, sale, marketing, distribution and importation or exportation of drug and biopharmaceutical products (each, a "**Drug Regulatory Agency**"), except for any noncompliance, either individually or in the aggregate, which would not be material to the Company. To the Knowledge of the Company, no investigation, claim, suit, proceeding, audit or other action by any Governmental Body is pending or threatened against the Company. There is no agreement, judgment, injunction, order or decree binding upon the Company which (i) has or would reasonably be expected to have the effect of prohibiting or materially impairing any business practice of the Company, any acquisition of material property by the Company or the conduct of business by the Company as currently conducted, (ii) is reasonably likely to have an adverse effect on the Company's ability to comply with or perform any covenant or obligation under this Agreement or (iii) is reasonably likely to have the effect of preventing, delaying, making illegal or otherwise interfering with the Contemplated Transactions.

(b) The Company holds all required Governmental Authorizations which are material to the operation of the business of the Company as currently conducted (the "**Company Permits**"). Section 2.14(b) of the Company Disclosure Schedule identifies each Company Permit. The Company is in material compliance with the terms of the Company Permits. No Legal Proceeding is pending or, to the Knowledge of the Company, threatened, which seeks to revoke, limit, suspend, or materially modify any Company Permit. The rights and benefits of each Company Permit will be available to the Surviving Corporation or its Subsidiaries, as applicable, immediately after the Effective Time on terms substantially identical to those enjoyed by the Company as of the date of this Agreement and immediately prior to the Effective Time.

(c) To the Knowledge of the Company, there are no proceedings pending or threatened against the Company with respect to an alleged material violation by the Company of the FDCA, FDA regulations adopted thereunder, the PHSA and its implementing regulations or any other similar Law administered or promulgated by any Drug Regulatory Agency.

(d) The Company holds all required Governmental Authorizations issuable by any Drug Regulatory Agency necessary or material to the conduct of the business of the Company as currently conducted (collectively, the "**Company Regulatory Permits**") and no such Company Regulatory Permit has been (i) revoked, withdrawn, suspended, canceled or terminated or (ii) modified in any adverse manner. The Company is in compliance in all material respects with the Company Regulatory Permits and have not received any written notice or other written communication, or to the Knowledge of the Company, any other communication from any Drug Regulatory Agency regarding (A) any material violation of or failure to comply materially with any term or requirement of any Company Regulatory Permit or (B) any revocation, withdrawal, suspension, cancellation, termination or material modification of any Company Regulatory Permit. The Company has complied in all material respects with the ICH E9 Guidance for Industry: Statistical Principles for Clinical Trials in the management of the clinical data that have been presented by the Company. To the Knowledge of the Company, there are no facts that would be reasonably likely to result in any warning, untitled or notice of violation letter or Form FDA-483 from the FDA.

(e) All clinical, pre-clinical and other studies and tests conducted by or on behalf of, or sponsored by, the Company, or in which the Company or its current products or product candidates have participated, were and, if still pending, are being conducted in all material respects in accordance with standard medical and scientific research procedures and in compliance in all material respects with the applicable regulations of any applicable Drug Regulatory Agency and other applicable Law, as applicable, including the Good Clinical Practice ("GCP") regulations under 21 C.F.R. Parts 50, 54, 56, 58 and 312. No preclinical or clinical trial conducted by or on behalf of the Company has been terminated or suspended prior to completion for safety or non-compliance reasons. Since January 1, 2016, the Company has not received any notices, correspondence, or other communications from any Drug Regulatory Agency requiring, or to the Knowledge of the Company threatening to initiate, the termination or suspension of any clinical studies conducted by or on behalf of, or sponsored by, the Company or in which the Company or its current products or product candidates have participated.

(f) To the Knowledge of the Company, the Company is not the subject of any pending or threatened investigation in respect of its business or products by the FDA pursuant to its "Fraud, Untrue Statements of Material Facts, Bribery, and Illegal Gratuities" Final Policy set forth in 56 Fed. Reg. 46191 (September 10, 1991), or any amendments thereto. To the Knowledge of the Company, neither the Company nor any of its officers, employees or agents have committed any acts, made any statement, or failed to make any statement, in each case in respect of its business or products that would violate the FDA's "Fraud, Untrue Statements of Material Facts, Bribery, and Illegal Gratuities" Final Policy, and any amendments thereto. None of the Company or any of its officers, employees or, to the Knowledge of the Company, agents has been convicted of any crime or engaged in any conduct that could result in a debarment or exclusion under (i) 21 U.S.C. Section 335a or (ii) any similar applicable Law. No debarment or exclusionary claims, actions, proceedings or investigations in respect of their business or products are pending or, to the Knowledge of the Company, threatened against the Company or any of its officers, employees or, to the Knowledge of the Company, agents.

(g) Neither Company, nor any of its officers, directors, employees or agents has been, is, or is in anticipation of being (based on a conviction by the courts or a finding of fault by a regulatory authority): (a) debarred pursuant to the Generic Drug Enforcement Act of 1992 (21 U.S.C. § 335a), as amended from time to time; (b) disqualified from participating in clinical trials pursuant to 21 C.F.R. §312.70, as amended from time to time; (c) disqualified as a testing facility under 21 C.F.R. Part 58, Subpart K, as amended from time to time; (d) excluded, debarred or suspended from or otherwise ineligible to participate in a "Federal Health Care Program" as defined in 42 U.S.C. 1320a-7b(f), as amended from time to time, or any other governmental payment, procurement or non-procurement program; or (e) included on the HHS/OIG List of Excluded Individuals/Entities, the General Services Administration's List of Parties Excluded from Federal Programs, or the FDA Debarment List. Company is not using, nor has it ever used, in any capacity any Person that has ever been, is currently, or to the Knowledge of Company is the subject of a proceeding that could lead to the Company or its officers, directors, employees or agents becoming, as applicable, a Debarred Entity, a Debarred Individual, an Excluded Entity, an Excluded Individual, or a Convicted Entity or a Convicted Individual, nor are they listed on the FDA's Disqualified/Restricted List. The Company, nor any of its officers, directors, employees or agents, has been excluded or threatened with exclusion under state or federal statutes or regulations, including under 42 U.S.C. § 1320a-7 or relevant regulations in 42 C.F.R. Part 1001, or assessed or threatened with assessment of civil money penalties pursuant to 42 C.F.R. Part 1003. Neither the Company nor to its knowledge its officers, directors, employees or agents has taken any action that would now or in the future constitute an improper inducement under federal or state healthcare laws.

(h) The Company is not a Covered Entity under the Health Insurance Portability and Accountability Act of 1996 and its implementing regulations promulgated thereunder, all as amended from time to time (collectively "HIPAA"), but the Company has complied in all material respects with all Laws relating to patient, medical or individual health information, if required, including (to the extent applicable) the standards for the privacy of Individually Identifiable Health Information at 45 C.F.R. Parts 160 and 164, Subparts A and E, the standards for the protection of Electronic Protected Health Information set forth at 45 C.F.R. Part 160 and 45 C.F.R. Part 164, Subpart A and Subpart C, the standards for transactions and code sets used in electronic transactions at 45 C.F.R. Part 160, Subpart A and Part 162, and the standards for Breach Notification for Unsecured Protected Health Information at 45 C.F.R. Part 164, Subpart D, all as amended from time to time. The Company has entered into, where required, and is in compliance in all material respects with the terms of all Business Associate (as defined in HIPAA) agreements ("**Business Associate Agreements**") to which the Company is a party or otherwise bound. To the extent applicable, the Company has created and maintained written policies and procedures to protect the privacy of all protected health information, provides training to all employees and agents as required under HIPAA, and has implemented security procedures, including physical, technical and administrative safeguards, to protect all personal information and Protected Health Information stored or transmitted in electronic form. The Company has not received written notice from the Office for Civil Rights for the U.S. Department of Health and Human Services or any other Governmental Body of any allegation regarding its failure to comply with HIPAA or any other state law or regulation applicable to the protection of individually identifiable health information or personally identifiable information. No successful Security Incident, Breach of Unsecured Protected Health Information or breach of personally identifiable information under applicable state or federal laws have occurred with respect to information maintained or transmitted to the Company or an agent or third party subject to a Business Associate Agreement with the Company. If required, the Company is currently submitting, receiving and handling or is capable of submitting receiving and handling transactions in accordance with the Standard Transaction Rule. All capitalized terms in this Section 2.14(f) not otherwise defined in this Agreement shall have the meanings set forth under HIPAA.

2.15 **Legal Proceedings; Orders.**

(a) As of the date of this Agreement, to the Knowledge of the Company, there is no material pending Legal Proceeding and no Person has threatened in writing to commence any Legal Proceeding: (i) that involves (A) the Company, (B) any Company Associate (in his or her capacity as such) or (C) any of the material assets owned or used by the Company; or (ii) that challenges, or that would have the effect of preventing, delaying, making illegal or otherwise interfering with, the Contemplated Transactions.

(b) Since January 1, 2016 through the date of this Agreement, no Legal Proceeding has been pending against the Company that resulted in material liability to the Company.

(c) There is no order, writ, injunction, judgment or decree to which the Company, or any of the material assets owned or used by the Company, is subject. To the Knowledge of the Company, no officer of the Company is subject to any order, writ, injunction, judgment or decree that prohibits such officer or employee from engaging in or continuing any conduct, activity or practice relating to the business of the Company or to any material assets owned or used by the Company.

2.16 **Tax Matters.**

(a) The Company has timely filed all income Tax Returns and other material Tax Returns that it was required to file under applicable Law. All such Tax Returns are correct and complete in all material respects and have been prepared in compliance with all applicable Law. No written claim has ever been made by any Governmental Body in any jurisdiction where the Company does not file a particular Tax Return or pay a particular Tax that the Company is subject to taxation by that jurisdiction.

(b) All income and other material Taxes due and owing by the Company on or before the date hereof (whether or not shown on any Tax Return) have been fully paid. The unpaid Taxes of the Company did not, as of the date of the Company Unaudited Interim Balance Sheet, materially exceed the reserve for Tax liability (excluding any reserve for deferred Taxes established to reflect timing differences between book and Tax items) set forth on the face of the Company Unaudited Interim Balance Sheet. Since the date of the Company Unaudited Interim Balance Sheet, the Company has not incurred any material Liability for Taxes outside the Ordinary Course of Business.

(c) All Taxes that the Company is or was required by Law to withhold or collect have been duly and timely withheld or collected in all material respects on behalf of its respective employees, independent contractors, stockholders, lenders, customers or other third parties and, have been timely paid to the proper Governmental Body or properly set aside in accounts for this purpose.

(d) There are no Encumbrances for material Taxes (other than Permitted Encumbrances) upon any of the assets of the Company.

(e) No deficiencies for income or other material Taxes with respect to the Company have been claimed, proposed or assessed by any Governmental Body in writing. There are no pending or ongoing, and to the Knowledge of the Company, threatened audits, assessments or other actions for or relating to any liability in respect of a material amount of Taxes of the Company. Neither the Company nor any of its predecessors has waived any statute of limitations in respect of any income or other material Taxes or agreed to any extension of time with respect to any income or other material Tax assessment or deficiency.

(f) The Company has not been a United States real property holding corporation within the meaning of Section 897(c)(2) of the Code during the applicable period specified in Section 897(c)(1)(A)(ii) of the Code.

(g) The Company is not a party to any Tax allocation agreement, Tax sharing agreement, Tax indemnity agreement, or similar agreement or arrangement, other than customary commercial contracts entered into in the Ordinary Course of Business the principal subject matter of which is not Taxes.

(h) The Company will not be required to include any material item of income in, or exclude any material item of deduction from, taxable income for any Tax period (or portion thereof) ending after the Closing Date as a result of any: (i) change in method of accounting for Tax purposes filed on or prior to the Closing Date; (ii) use of an improper method of accounting for a Tax period ending on or prior to the Closing Date; (iii) "closing agreement" as described in Section 7121 of the Code (or any similar provision of state, local or foreign Law) executed on or prior to the Closing Date; (iv) intercompany transaction or excess loss account described in Treasury Regulations under Section 1502 of the Code (or any similar provision of state, local or foreign Law) entered into on or prior to the Closing Date; (v) installment sale or open transaction disposition made on or prior to the Closing Date; (vi) prepaid amount received on or prior to the Closing Date; or (vii) election under Section 108(i) of the Code (or any similar provision of state, local or foreign Law) made on or prior to the Closing Date. The Company has not made any election under Section 965(h) of the Code.

(i) The Company has never been (i) a member of a consolidated, combined or unitary Tax group (other than such a group the common parent of which is the Company) or (ii) a party to any joint venture, partnership, or other arrangement that is treated as a partnership for U.S. federal income Tax purposes. The Company does not have any Liability for any material Taxes of any Person (other than the Company) under Treasury Regulations Section 1.1502-6 (or any similar provision of state, local, or foreign Law), or as a transferee or successor.

(j) The Company has not, since January 1, 2016, distributed stock of another Person, or had its stock distributed by another Person, in a transaction that was purported or intended to be governed in whole or in part by Section 355 of the Code or Section 361 of the Code (or any similar provisions of state, local or foreign Law).

(k) The Company (i) is, and since its formation has been, a domestic corporation for United States federal income tax purposes; and (ii) has never had a permanent establishment (within the meaning of an applicable Tax treaty) or otherwise had an office or fixed place of business in a country other than the United States.

(l) The Company has not participated in or been a party to a transaction that, as of the date of this Agreement, constitutes a "listed transaction" that is required to be reported to the IRS pursuant to Section 6011 of the Code and applicable Treasury Regulations thereunder.

(m) The Company has not taken or agreed to take any action or knows of any fact that would reasonably be expected to prevent the Merger from qualifying for the Intended Tax Treatment.

For purposes of this Section 2.16, each reference to the Company shall be deemed to include any Person that was liquidated into, merged with, or is otherwise a predecessor to, the Company.

2.17 **Employee and Labor Matters; Benefit Plans.**

(a) Section 2.17(a) of the Company Disclosure Schedule is a list of all Company Benefit Plans, including, without limitation, each Company Benefit Plan that provides for retirement, change in control, stay or retention, deferred compensation, incentive compensation, severance or retiree medical or life insurance benefits. "Company Benefit Plan" means each (i) "employee benefit plan" as defined in Section 3(3) of ERISA and (ii) other pension, retirement, deferred compensation, excess benefit, profit sharing, bonus, incentive, equity or equity-based (other than individual Company Options made pursuant to the Company's standard forms, in which case only representative standard forms of such stock option agreements shall be scheduled), phantom equity, employment (other than individual employment agreements made pursuant to the Company's standard forms, in which case only representative standard forms of such employment agreements shall be scheduled), offer letter (other than individual offer letters made pursuant to the Company's standard forms, in which case only representative standard forms of such offers shall be scheduled), consulting, severance, change-of-control, retention, health, life, disability, group insurance, paid-time off, holiday, welfare and fringe benefit plan, program, agreement, contract, or arrangement (whether written or unwritten, qualified or nonqualified, funded or unfunded and including any that have been frozen), in any case, maintained, contributed to, or required to be contributed to, by the Company or any of its Subsidiaries for the benefit of any current or former employee, director, officer or independent contractor of the Company or under which the Company has any actual or contingent liability (including, without limitation, as to the result of it being treated as a single employer under Code Section 414 with any other person).

(b) As applicable with respect to each Company Benefit Plan, the Company has made available to Parent, true and complete copies of (i) each Company Benefit Plan, including all amendments thereto, and in the case of an unwritten Company Benefit Plan, a written description thereof, (ii) all current trust documents, investment management contracts, custodial agreements, administrative services agreements and insurance and annuity contracts relating thereto, (iii) the current summary plan description and each summary of material modifications thereto, (iv) the most recently filed annual reports with any Governmental Body (e.g., Form 5500 and all schedules thereto), (v) the most recent IRS determination, opinion or advisory letter, (vi) the most recent summary annual reports, nondiscrimination testing reports, actuarial reports, financial statements and trustee reports, (vii) all material records, notices and filings concerning IRS or Department of Labor or other Governmental Body audits or investigations, and (viii) any written reports constituting a valuation of the Company's Capital Stock for purposes of Sections 409A or 422 of the Code, whether prepared internally by the Company or by an outside, third-party valuation firm.

(c) Each Company Benefit Plan has been maintained, operated and administered in compliance in all material respects with its terms and any related documents or agreements and the applicable provisions of ERISA, the Code and all other Laws.

(d) The Company Benefit Plans that are "employee pension benefit plans" within the meaning of Section 3(2) of ERISA and which are intended to meet the qualification requirements of Section 401(a) of the Code have received determination or opinion letters from the IRS on which they may currently rely to the effect that such plans are qualified under Section 401(a) of the Code and the related trusts are exempt from federal income Taxes under Section 501(a) of the Code, respectively, and to the Knowledge of the Company, nothing has occurred that would reasonably be expected to materially adversely affect the qualification of such Company Benefit Plan or the tax exempt status of the related trust.

(e) Neither the Company nor any Company ERISA Affiliate maintains, contributes to, is required to contribute to, or has any actual or contingent liability with respect to, (i) any "employee pension benefit plan" (within the meaning of Section 3(2) of ERISA) that is subject to Title IV or Section 302 of ERISA or Section 412 of the Code, (ii) any "multiemployer plan" (within the meaning of Section 3(37) of ERISA) or (iii) any "multiple employer plan" (within the meaning of Section 413 of the Code). No Company Benefit Plan is a self-funded group health plan that is a "multiple employer welfare arrangement" (within the meaning of Section 3(40) of ERISA).

(f) There are no pending audits or investigations by any Governmental Body involving any Company Benefit Plan, and no pending or, to the Knowledge of the Company, threatened claims (except for individual claims for benefits payable in the normal operation of the Company Benefit Plans), suits or proceedings involving any Company Benefit Plan, any fiduciary thereof or service provider thereto, in any case except as would not be reasonably expected to result in material liability to the Company. All contributions and premium payments required to have been made under any of the Company Benefit Plans or by applicable Law (without regard to any waivers granted under Section 412 of the Code), have been timely made in all material respects and neither the Company nor any Company ERISA Affiliate has any material liability for any unpaid contributions with respect to any Company Benefit Plan.

(g) Neither the Company, any Company ERISA Affiliates, nor to the Knowledge of the Company, any fiduciary, trustee or administrator of any Company Benefit Plan, has engaged in, or in connection with the Contemplated Transactions will engage in, any transaction with respect to any Company Benefit Plan which would subject any such Company Benefit Plan, the Company, or Company ERISA Affiliates or Parent to a material Tax, material penalty or material liability for a "prohibited transaction" under Section 406 of ERISA or Section 4975 of the Code.

(h) No Company Benefit Plan provides death, medical, dental, vision, life insurance or other welfare benefits beyond termination of service or retirement other than coverage mandated by Law and neither the Company nor any Company ERISA Affiliates has made a written or oral representation promising the same.

(i) Neither the execution of, nor the performance of the Contemplated Transactions will either alone or in connection with any other event(s) (i) result in any payment becoming due to any current or former employee, director, officer, or independent contractor of the Company, (ii) increase any amount of compensation or benefits otherwise payable under any Company Benefit Plan, (iii) result in the acceleration of the time of payment, funding or vesting of any benefits under any Company Benefit Plan, (iv) require any contribution or payment to fund any obligation under any Company Benefit Plan or (v) limit the right to merge, amend or terminate any Company Benefit Plan that is subject to ERISA.

(j) Neither the execution of, nor the consummation of, the Contemplated Transactions (either alone or when combined with the occurrence of any other event, including without limitation, a termination of employment) will result in the receipt or retention by any Person who is a "disqualified individual" (within the meaning of Code Section 280G) with respect to the Company of any payment or benefit under any Company Benefit Plan that is or could be characterized as a "parachute payment" (within the meaning of Code Section 280G), determined without regard to the application of Code Section 280G(b)(5).

(k) The exercise price of each Company Option granted to a U.S. taxpayer is not and never has been less than the fair market value of one share of Company Common Stock as of the grant date of such Company Option.

(l) Each Company Benefit Plan providing for deferred compensation that constitutes a "nonqualified deferred compensation plan" (as defined in Section 409A(d)(1) of the Code and the regulations promulgated thereunder) is, and has been, established, administered and maintained in material compliance with the requirements of Section 409A of the Code and the regulations promulgated thereunder in all material respects.

(m) No current or former employee, officer, director or independent contractor of the Company has any "gross up" agreements with the Company or other assurance of reimbursement by the Company for any Taxes imposed under Code Section 409A or Code Section 4999.

(n) No Company Benefit Plan is maintained outside of the United States.

(o) The Company has provided to Parent a true and correct list, as of the date of this Agreement, containing the names of all full-time and part-time employees, as well as their respective full-time or part-time status, and the names of all independent contractors and consultants (and indication as such), and, as applicable: (i) the annual dollar amount of all compensation (including wages, salary or fees, commissions, director's fees, fringe benefits, bonuses, profit sharing payments, and other payments or benefits of any type) payable to each person; (ii) dates of employment or service; (iii) title; (iv) any eligibility to receive severance, retention payment, change of control payment, or other similar compensation; (v) visa status, if applicable; (vi) work location; and (vii) with respect to employees, a designation of whether the employee is classified as exempt or non-exempt for purposes of the Fair Labor Standards Act, as amended ("FLSA") and any similar state law.

(p) The Company is not and has never been a party to, is not and has never been bound by, and does not have and has never had a duty to bargain under, any collective bargaining agreement or other Contract with a labor union, labor organization, or similar Person representing any of its employees, and there is no labor union, labor organization, or similar Person representing or, to the Knowledge of the Company, purporting to represent or seeking to represent any employees of the Company, including through the filing of a petition for representation election. There is not and has not been in the past three years, nor is

there or has there been in the past three years any threat of, any strike, slowdown, work stoppage, lockout, union election petition, demand for recognition, or any similar activity or dispute, or, to the Knowledge of the Company, any union organizing activity, against the Company. No event has occurred, and no condition or circumstance exists, that might directly or indirectly be likely to give rise to or provide a basis for the commencement of any such strike, slowdown, work stoppage, lockout, union election petition, demand for recognition, any similar activity or dispute, or, to the Knowledge of the Company, any union organizing activity.

(q) The Company is, and since January 1, 2016 has been, in material compliance with all applicable Laws respecting labor, employment, employment practices, and terms and conditions of employment, including worker classification, discrimination, harassment and retaliation, equal employment opportunities, fair employment practices, meal and rest periods, immigration, employee safety and health, payment of wages (including overtime wages), unemployment and workers' compensation, leaves of absence, hours of work, and termination of employment. Except as would not be reasonably likely to result in a material liability to the Company, with respect to employees of the Company, the Company, since January 1, 2016: (i) has withheld and reported all amounts required by Law or by agreement to be withheld and reported with respect to wages, salaries and other payments, benefits, or compensation to employees, (ii) is not liable for any arrears of wages (including overtime wages), severance pay or any Taxes or any penalty for failure to comply with any of the foregoing and (iii) is not liable for any payment to any trust or other fund governed by or maintained by or on behalf of any Governmental Body, with respect to unemployment compensation benefits, disability, social security or other benefits or obligations for employees (other than routine payments to be made in the Ordinary Course of Business). There are no actions, suits, claims, charges, lawsuits, investigations, audits or administrative matters pending or, to the Knowledge of the Company, threatened or reasonably anticipated against the Company relating to any employee, applicant for employment, consultant, employment agreement or Company Benefit Plan (other than routine claims for benefits).

(r) Except as would not be reasonably likely to result in a material liability to the Company, with respect to each individual who currently renders services to the Company, the Company has accurately classified each such individual as an employee, independent contractor, or otherwise under all applicable Laws and, for each individual classified as an employee, the Company has accurately classified him or her as exempt or non-exempt under all applicable Laws. The Company does not have any material liability with respect to any misclassification of: (a) any Person as an independent contractor rather than as an employee, (b) any employee leased from another employer or (c) any employee currently or formerly classified as exempt under all applicable Laws.

(s) Within the preceding five (5) years, the Company has not implemented any "plant closing" or "mass layoff" of employees that would reasonably be expected to require notification under the WARN Act or any similar state or local Law, no such "plant closing" or "mass layoff" will be implemented before the Closing Date without advance notification to and approval of Parent, and there has been no "employment loss" as defined by the WARN Act or comparable state law within the ninety (90) days prior to the Closing Date.

(t) There is no Legal Proceeding, claim, unfair labor practice charge or complaint, labor dispute or grievance pending or, to the Knowledge of the Company, threatened against the Company relating to labor, employment, employment practices, or terms and conditions of employment.

2.18 **Environmental Matters.** The Company is and since January 1, 2013 has complied with all applicable Environmental Laws, which compliance includes the possession by the Company of all permits and other Governmental Authorizations required under applicable Environmental Laws and compliance with the terms and conditions thereof, except for any failure to be in such compliance that, either individually or in the aggregate, would not reasonably be expected to be material to the Company or its business. The Company has not received since January 1, 2013 (or prior to that time, which is pending and unresolved), any written notice or other communication (in writing or otherwise), whether from a Governmental Body or other Person, that alleges that the Company is not in compliance with or has liability pursuant to any Environmental Law and, to the Knowledge of the Company, there are no circumstances that would reasonably be expected to prevent or interfere with the Company's compliance in any material respects with any Environmental Law, except where such failure to comply would not reasonably be expected to be material to the Company or its business. No current or (during the time a prior property was leased or controlled by the Company) prior property leased or controlled by the Company has had a release of or exposure to Hazardous Materials in material violation of or as would reasonably be expected to result in any material liability of the Company pursuant to Environmental Law. No consent, approval or Governmental Authorization of or registration or filing with any Governmental Body is required by Environmental Laws in connection with the execution and delivery of this Agreement or the Contemplated Transactions. Prior to the date hereof, the Company has provided or otherwise made available to Parent true and correct copies of all material environmental reports, assessments, studies and audits in the possession or control of the Company with respect to any property leased or controlled by the Company or any business operated by them.

2.19 **Insurance.** The Company has delivered or made available to Parent accurate and complete copies of all material insurance policies and all material self-insurance programs and arrangements relating to the business, assets, liabilities and operations of the Company. Each of such insurance policies is in full force and effect and the Company is in compliance in all material respects with the terms thereof. Other than customary end of policy notifications from insurance carriers, since January 1, 2016, the Company has not received any notice or other communication regarding any actual or possible: (i) cancellation or invalidation of any insurance policy; or (ii) refusal or denial of any coverage, reservation of rights or rejection of any material claim under any insurance policy. The Company has provided timely written notice to the appropriate insurance carrier(s) of each Legal Proceeding that is currently pending against the Company for which the Company has insurance coverage, and no such carrier has issued a denial of coverage or a reservation of rights with respect to any such Legal Proceeding, or informed the Company of its intent to do so.

2.20 **No Financial Advisors.** No broker, finder or investment banker is entitled to any brokerage fee, finder's fee, opinion fee, success fee, transaction fee or other fee or commission in connection with the Contemplated Transactions based upon arrangements made by or on behalf of the Company.

2.21 **Disclosure.** The information supplied by the Company for inclusion in the Proxy Statement (including any of the Company Financials) will not, as of the date of the Proxy Statement or as of the date such information is prepared or presented, (i) contain any statement that is inaccurate or misleading with respect to any material facts, or (ii) omit to state any material fact necessary in order to make such information, in light of the circumstances under which such information will be provided, not false or misleading.

2.22 **Transactions with Affiliates.**

(a) **Section 2.22(a)** of the Company Disclosure Schedule (i) describes any material transactions or relationships, since January 1, 2016, between, on one hand, the Company and, on the other hand, any (A) executive officer or director of the Company or, to the Knowledge of the Company, any of such executive officer's or director's immediate family members, (B) owner of more than 5% of the voting power of the outstanding Company Capital Stock or (C) to the Knowledge of the Company, any "related person" (within the meaning of Item 404 of Regulation S-K under the Securities Act) of any such officer, director or owner (other than the Company) in the case of each of (A), (B) or (C) that is of the type that would be required to be disclosed under Item 404 of Regulation S-K under the Securities Act; and (ii) identifies each Person who is (or who may be deemed to be) an Affiliate of the Company as of the date of this Agreement.

(b) **Section 2.22(b)** of the Company Disclosure Schedule lists each stockholders agreement, voting agreement, registration rights agreement, co-sale agreement or other similar Contract between the Company and any holders of Company Capital Stock, including any such Contract granting any Person investor rights, rights of first refusal, rights of first offer, registration rights, director designation rights or similar rights (collectively, the "**Investor Agreements**").

2.23 **Anti-Bribery.** None of the Company or any of its directors, officers, employees or, to the Company's Knowledge, agents or any other Person acting on their behalf has directly or indirectly made any bribes, rebates, influence payments, kickbacks, illegal payments, illegal political contributions, or other payments, in the form of cash, gifts, or otherwise, or taken any other action, in violation of the Foreign Corrupt Practices Act of 1977, the UK Bribery Act of 2010 or any other anti-bribery or anti-corruption Law (collectively, the "**Anti-Bribery Laws**"). To the Knowledge of the Company, the Company is not and has never been the subject of any investigation or inquiry by any Governmental Body with respect to potential violations of Anti-Bribery Laws.

2.24 **Disclaimer of Other Representations or Warranties.**

(a) Except as previously set forth in this **Section 2** or in any certificate delivered by the Company to Parent and/or Merger Sub pursuant to this Agreement, the Company makes no representation or warranty, express or implied, at law or in equity, with respect to it or any of its assets, liabilities or operations, and any such other representations or warranties are hereby expressly disclaimed.

(b) The Company acknowledges and agrees that, except for the representations and warranties of Parent and Merger Sub set forth in **Section 3**, none of the Company or any of their respective Representatives is relying on any other representation or warranty of Parent or any other Person made outside of **Section 3**, including regarding the accuracy or completeness of any such other representations or warranties or the omission of any material information, whether express or implied, in each case, with respect to the Contemplated Transactions.

Section 3. REPRESENTATIONS AND WARRANTIES OF PARENT AND MERGER SUB

Subject to **Section 10.13(h)**, except (a) as set forth in the disclosure schedule delivered by Parent to the Company (the "**Parent Disclosure Schedule**") or (b) as disclosed in the Parent SEC Documents filed with the SEC at least two (2) Business Days prior to the date hereof and publicly available on the SEC's Electronic Data Gathering Analysis and Retrieval system (but (i) without giving effect to any amendment thereof filed with, or furnished to the SEC on or after the date hereof and (ii) excluding any disclosures contained under the heading "Risk Factors" and any disclosure of risks included in any "forward-looking statements" disclaimer or in any other section to the extent they are forward-looking statements or cautionary, predictive or forward-looking in nature), Parent and Merger Sub represent and warrant to the Company as follows:

3.1 **Due Organization; No Subsidiaries.**

(a) Each of Parent and Merger Sub is a corporation duly incorporated, validly existing and in good standing under the Laws of Delaware, and has all necessary corporate power and authority: (i) to conduct its business in the manner in which its business is currently being conducted; (ii) to own or lease and use its property and assets in the manner in which its property and assets are currently owned or leased and used; and (iii) to perform its obligations under all Contracts by which it is bound. Since the date of its incorporation, Merger Sub has not engaged in any activities other than activities incident to its formation or in connection with or as contemplated by this Agreement.

(b) Parent is duly licensed and qualified to do business, and is in good standing (to the extent applicable in such jurisdiction), under the Laws of all jurisdictions where the nature of its business requires such licensing or qualification other than in jurisdictions where the failure to be so qualified individually or in the aggregate would not be reasonably expected to have a Parent Material Adverse Effect.

(c) Parent has no Subsidiaries, except for the Entities identified in **Section 3.1(c)** of the Parent Disclosure Schedule; and neither Parent nor any of the Entities identified in **Section 3.1(c)** of the Parent Disclosure Schedule owns any capital stock of, or any equity, ownership or profit sharing interest of any nature in, or controls directly or indirectly, any other Entity other than the Entities identified in **Section 3.1(c)** of the Parent Disclosure Schedule. Each of Parent's Subsidiaries is a corporation or other legal Entity duly organized, validly existing and, if applicable, in good standing under the Laws of the jurisdiction of its organization and has all necessary corporate or other power and authority to conduct its business in the manner in which its business is currently being conducted and to own or lease and use its property and assets in the manner in which its property and assets are currently owned or leased and used, except where the failure to have such power or authority would not be reasonably expected to have a Parent Material Adverse Effect.

(d) Parent is not and has not otherwise been, directly or indirectly, a party to, member of or participant in any partnership, joint venture or similar business Entity. Parent has not agreed and is not obligated to make, and is not bound by any Contract under which it may become obligated to make, any future investment in or capital contribution to any other Entity. Parent has not, at any time, been a general partner of, and has not otherwise been liable for any of the debts or other obligations of, any general partnership, limited partnership or other Entity.

3.2 **Organizational Documents.** Parent has made available to the Company accurate and complete copies of Parent's and Merger Sub's Organizational Documents in effect as of the date of this Agreement. Neither Parent nor Merger Sub is in breach or violation of its respective Organizational Documents.

3.3 **Authority; Binding Nature of Agreement.**

(a) Each of Parent and Merger Sub has all necessary corporate power and authority to enter into and to perform its obligations under this Agreement and, subject, with respect to Parent, to receipt of the Required Parent Stockholder Vote and, with respect to Merger Sub, the adoption of this Agreement by Parent in its capacity as sole stockholder of Merger Sub, to perform its obligations hereunder and to consummate the Contemplated Transactions. The Parent Board (at meetings duly called and held) has: (i) determined that the Contemplated Transactions are fair to, advisable and in the best interests of Parent and its stockholders; (ii) authorized, approved and declared advisable this Agreement and the Contemplated Transactions, including the issuance of shares of Parent Common Stock to the stockholders of the Company pursuant to the terms of this Agreement and the treatment of the Company Options pursuant to this Agreement; and (iii) determined to recommend, upon the terms and subject to the conditions set forth in this Agreement, that the stockholders of Parent vote to approve the Parent Stockholder Matters. The Merger Sub Board (by unanimous written consent) has: (A) determined that the Contemplated Transactions are fair to, advisable, and in the best interests of Merger Sub and its sole stockholder; (B) authorized, approved and declared advisable this Agreement and the Contemplated Transactions; and (C) determined to recommend, upon the terms and subject to the conditions set forth in this Agreement, that the stockholder of Merger Sub vote to adopt this Agreement and thereby approve the Contemplated Transactions.

(b) This Agreement has been duly executed and delivered by each of Parent and Merger Sub and, assuming the due authorization, execution and delivery by the Company, constitutes the legal, valid and binding obligation of Parent and Merger Sub, enforceable against each of Parent and Merger Sub in accordance with its terms, subject to the Enforceability Exceptions. Prior to the execution of the Parent Stockholder Support Agreements, the Parent Board approved the Parent Stockholder Support Agreements and the Contemplated Transactions.

3.4 **Vote Required.** (a) The affirmative vote of the holders of a majority of the outstanding shares of Parent Common Stock is the only vote of the holders of any class or series of Parent's capital stock necessary to approve the proposals in Section 5.3(a)(i) and (b) the affirmative vote of a majority of the votes cast at the Parent Stockholders' Meeting is the only vote of the holders of any class or series of Parent's capital stock necessary to approve the proposals in Section 5.3(a)(ii) and (iii) (the "**Required Parent Stockholder Vote**").

3.5 **Non-Contravention; Consents.** Subject to obtaining the Required Parent Stockholder Vote, the filing of the Proxy Statement with the SEC in accordance with the Exchange Act, the filing of Current Reports on Form 8-K with the SEC within four Business Days after the execution of this Agreement and the Closing Date, amending Parent's certificate of incorporation to effect the Nasdaq Reverse Split, such approvals as may be required under applicable state securities or "blue sky" laws or the rules and regulations of Nasdaq or other applicable national securities exchange or over-the-counter market, the filing of the Certificate of Merger required by the DGCL, neither (x) the execution, delivery or performance of this Agreement by Parent or Merger Sub, nor (y) the consummation of the Contemplated Transactions, will directly or indirectly (with or without notice or lapse of time):

(a) contravene, conflict with or result in a violation of any of the provisions of the Organizational Documents of Parent or Merger Sub;

(b) contravene, conflict with or result in a material violation of, or to the Knowledge of Parent give any Governmental Body or other Person the right to challenge the Contemplated Transactions or to exercise any material remedy or obtain any material relief under, any Law or any order, writ, injunction, judgment or decree to which Parent or Merger Sub, or any of the assets owned or used by Parent or Merger Sub, is subject, except as would not reasonably be expected to be material to Parent or its business;

(c) contravene, conflict with or result in a violation of any of the terms or requirements of, or give any Governmental Body the right to revoke, withdraw, suspend, cancel, terminate or modify, any Governmental Authorization that is held by Parent, except as would not reasonably be expected to be material to Parent or its business;

(d) contravene, conflict with or result in a violation or breach of, or result in a default under, any provision of any Parent Material Contract, or give any Person the right to: (i) declare a default or exercise any remedy under any Parent Material Contract; (ii) any material payment, rebate, chargeback, penalty or change in delivery schedule under any Parent Material Contract; (iii) accelerate the maturity or performance of any Parent Material Contract; or (iv) cancel, terminate or modify any term of any Parent Material Contract, except in the case of any non-material breach, default, penalty or modification; or

(e) result in the imposition or creation of any Encumbrance upon or with respect to any asset owned or used by Parent (except for Permitted Encumbrances).

Except for (i) any Consent set forth on Section 3.5 of the Parent Disclosure Schedule under any Parent Contract, (ii) the Required Parent Stockholder Vote, (iii) the filing of the Certificate of Merger with the Secretary of State of the State of Delaware pursuant to the DGCL and (iv) such consents, waivers, approvals, orders, authorizations, registrations, declarations and filings as may be required under applicable federal and state securities Laws, Parent is not and will not be required to make any filing with or give any notice to, or to obtain any Consent from, any Person in connection with (A) the execution, delivery or performance of this Agreement, the Parent Stockholder Support Agreements, and the Parent Lock-Up Agreements or (B) the consummation of the Contemplated Transactions, which if individually or in the aggregate were not given or obtained, would reasonably be expected to prevent or materially delay the ability of Parent and Merger Sub to consummate the Contemplated Transactions. The Parent Board and the Merger Sub Board have taken and will take all actions necessary to ensure that the restrictions applicable to business combinations contained in Section 203 of the DGCL are, and will be, inapplicable to the execution, delivery and performance of this Agreement, the Parent Stockholder Support Agreements, the Parent Lock-Up Agreements and to the consummation of the Contemplated Transactions. No other state Takeover Statute or similar Law applies or purports to apply to the Merger, this Agreement, the Parent Stockholder Support Agreements, the Parent Lock-Up Agreements or any of the other Contemplated Transactions.

3.6 **Capitalization.**

(a) The authorized capital stock of Parent as of the date of this Agreement consists of (i) 75,000,000 shares of Parent Common Stock, par value \$0.01 per share, of which 37,312,794 shares have been issued and are outstanding as of the close of business on the Reference Date and (ii) 5,000,000 shares of preferred stock of Parent, par value \$0.01 per share, of which no shares have been issued and are outstanding as of the date of this Agreement. Parent holds 112,209 shares of its capital stock in its treasury.

(b) All of the outstanding shares of Parent Common Stock have been duly authorized and validly issued, and are fully paid and nonassessable. None of the outstanding shares of Parent Common Stock is entitled or subject to any preemptive right, right of participation, right of maintenance or any similar right and none of the outstanding shares of Parent Common Stock is subject to any right of first refusal in favor of Parent. Except as contemplated herein, there is no Parent Contract relating to the voting or registration of, or restricting any Person from purchasing, selling, pledging or otherwise disposing of (or granting any option or similar right with respect to), any shares of Parent Common Stock. Parent is not under any obligation, nor is it bound by any Contract pursuant to which it may become obligated, to repurchase, redeem or otherwise acquire any outstanding shares of Parent Common Stock or other securities. Section 3.6(b) of the Parent Disclosure Schedule accurately and completely lists all repurchase or forfeiture rights held by the Parent with respect to shares of Parent Common Stock (including shares issued pursuant to the exercise of stock options) and specifies which of those repurchase rights are currently exercisable and whether the holder of such shares of Parent Common Stock timely filed an election with the relevant Governmental Bodies under Section 83(b) of the Code with respect to such shares.

(c) Except for the Parent Stock Plans (and awards granted thereunder), Parent does not have any stock option plan or any other plan, program, agreement or arrangement providing for any equity-based compensation for any Person. As of the close of business on the Reference Date, 5,782,588 shares of Parent Common Stock have been reserved for issuance upon exercise of Parent Options previously granted and currently outstanding under the Parent Stock Plans and 5,485,400 shares remain available for future issuance pursuant to the Parent Stock Plans. Section 3.6(c) of the Parent Disclosure Schedule sets forth the following information with respect to each Parent Option outstanding as of the date of this Agreement: (i) the name of the optionee; (ii) the number of shares of Parent Common Stock subject to such Parent Option at the time of grant; (iii) the number of shares of Parent Common Stock subject to such Parent Option as of the date of this Agreement; (iv) the exercise price of such Parent Option; (v) the date on which such Parent Option was granted; (vi) the applicable vesting schedule, including the number of vested and unvested shares as of the date of this Agreement and any acceleration provisions; (vii) the date on which such Parent Option expires; and (viii) whether such Parent Option is intended to constitute an "incentive stock option" (as defined in the Code) or a non-qualified stock option. Parent has made available to the Company accurate and complete copies of the Parent Stock Plans and all forms of the stock option and other award agreements evidencing outstanding awards granted thereunder.

(d) Except for the Parent Stock Plans and the Parent Options set forth on Section 3.6(c) of the Parent Disclosure Schedule, there is no: (i) outstanding subscription, option, call, warrant or right (whether or not currently exercisable) to acquire any shares of the capital stock or other securities of Parent or any of its Subsidiaries; (ii) outstanding security, instrument or obligation that is or may become convertible into or exchangeable for any shares of the capital stock or other securities of Parent or any of its Subsidiaries; or (iii) condition or circumstance that is reasonably likely to give rise to or provide a basis for the assertion of a claim by any Person to the effect that such Person is entitled to acquire or receive any shares of capital stock or other securities of Parent or any of its Subsidiaries. There are no outstanding or authorized stock appreciation, phantom stock, profit participation or other similar rights with respect to Parent or any of its Subsidiaries.

(e) All outstanding shares of Parent Common Stock, Parent Options, and other securities of Parent have been issued and granted in material compliance with (i) all applicable securities Laws and other applicable Law, and (ii) all requirements set forth in applicable Contracts.

3.7 **SEC Filings; Financial Statements.**

(a) Parent has delivered or made available to the Company accurate and complete copies of all registration statements, proxy statements, Certifications (as defined below) and other statements, reports, schedules, forms and other documents filed by Parent with the SEC since January 1, 2016 (the "**Parent SEC Documents**"), other than such documents that can be obtained on the SEC's website at www.sec.gov. Since January 1, 2018, all material statements, reports, schedules, forms and other documents required to have been filed by Parent or its officers with the SEC have been so filed on a timely basis. As of the time it was filed with the SEC (or, if amended or superseded by a filing prior to the date of this Agreement, then on the date of such filing), each of the Parent SEC Documents complied in all material respects with the applicable requirements of the Securities Act or the Exchange Act (as the case may be) and, as of the time they were filed, none of the Parent SEC Documents contained any untrue statement of a material fact or omitted to state a material fact required to be stated therein or necessary in order to make the statements therein, in light of the circumstances under which they were made, not misleading. The certifications and statements required by (i) Rule 13a-14 under the Exchange Act and (ii) 18 U.S.C. §1350 (Section 906 of the Sarbanes-Oxley Act) relating to the Parent SEC Documents (collectively, the "**Certifications**") are accurate and complete and comply as to form and content with all applicable Laws. As used in this Section 3.7, the term "file" and variations thereof shall be broadly construed to include any manner in which a document or information is furnished, supplied or otherwise made available to the SEC.

(b) The financial statements (including any related notes) contained or incorporated by reference in the Parent SEC Documents: (i) complied as to form in all material respects with the published rules and regulations of the SEC applicable thereto; (ii) were prepared in accordance with GAAP (except as may be indicated in the notes to such financial statements or, in the case of unaudited financial statements, except as permitted by Form 10-Q of the SEC, and except that the unaudited financial statements may not contain footnotes and are subject to normal and recurring year-end adjustments) applied on a consistent basis unless otherwise noted therein throughout the periods indicated; and (iii) fairly present, in all material respects, the financial position of Parent as of the respective dates thereof and the results of operations and cash flows of Parent for the periods covered thereby. Other than as expressly disclosed in the Parent SEC Documents filed prior to the date hereof, there has been no material change in Parent's accounting methods or principles that would be required to be disclosed in Parent's financial statements in accordance with GAAP.

(c) Parent's independent registered accounting firm has at all times since the date Parent became subject to the applicable provisions of the Sarbanes-Oxley Act been: (i) a registered public accounting firm (as defined in Section 2(a)(12) of the Sarbanes-Oxley Act); (ii) to the Knowledge of Parent, "independent" with respect to Parent within the meaning of Regulation S-X under the Exchange Act; and (iii) to the Knowledge of Parent, in compliance with subsections (g) through (l) of Section 10A of the Exchange Act and the rules and regulations promulgated by the SEC and the Public Company Accounting Oversight Board thereunder.

(d) Since January 1, 2016 through the date of this Agreement, Parent has not received any comment letter from the SEC or the staff thereof or any correspondence from officials of Nasdaq or the staff thereof relating to the delisting or maintenance of listing of the Parent Common Stock on Nasdaq.

(e) Since January 1, 2016, there have been no formal investigations regarding financial reporting or accounting policies and practices discussed with, reviewed by or initiated at the direction of the chief executive officer, chief financial officer, principal accounting officer or general counsel of Parent, the Parent Board or any committee thereof, other than ordinary course audits or reviews of accounting policies and practices or internal controls required by the Sarbanes-Oxley Act.

(f) Parent is and since January 1, 2016 has been, in compliance in all material respects with the applicable current listing and governance rules and regulations of Nasdaq.

(g) Parent maintains, and at all times since January 1, 2018 has maintained, a system of internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) of the Exchange Act) that is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with GAAP and to provide reasonable assurance (i) that transactions are recorded as necessary to permit preparation of financial statements in accordance with GAAP, (ii) that receipts and expenditures are made only in accordance with authorizations of management and the Parent Board and (iii) regarding prevention or timely detection of the unauthorized acquisition, use or disposition of Parent's assets that could have a material effect on Parent's financial statements. Parent has evaluated the effectiveness of Parent's internal control over financial reporting as of June 30, 2019 and, to the extent required by applicable Law, presented in any applicable Parent SEC Document that is a report on Form 10-K or Form 10-Q (or any amendment thereto) its conclusions about the effectiveness of the internal control over financial reporting as of the end of the period covered by such report or amendment based on such evaluation. Parent has disclosed, based on its most recent evaluation of internal control over financial reporting, to Parent's auditors and audit committee (and made available to the Company a summary of the significant aspects of such disclosure) (A) all significant deficiencies, if any, in the design or operation of internal control over financial reporting that are reasonably likely to adversely affect Parent's ability to record, process, summarize and report financial information and (B) any known fraud that involves management or other employees who have a significant role in Parent's internal control over financial reporting. Parent has not identified, based on its most recent evaluation of internal control over financial reporting, any material weaknesses in the design or operation of Parent's internal control over financial reporting.

(h) Parent maintains "disclosure controls and procedures" (as defined in Rules 13a-15(e) and 15d-15(e) of the Exchange Act) that are reasonably designed to ensure that all information required to be disclosed by Parent in the periodic reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported within the time periods required by the SEC, and that all such information is accumulated and communicated to Parent's management as appropriate to allow timely decisions regarding required disclosure and to make the Certifications.

3.8 **Absence of Changes.** Since the date of the Parent Balance Sheet, Parent and its Subsidiaries have conducted its business only in the Ordinary Course of Business (except for the execution and performance of this Agreement and the discussions, negotiations and transactions related thereto) and there has not been any (a) Parent Material Adverse Effect or (b) action, event or occurrence that would have required consent of the Company pursuant to [Section 4.1\(b\)](#) had such action, event or occurrence taken place after the execution and delivery of this Agreement.

3.9 **Absence of Undisclosed Liabilities.** As of the date hereof, Parent does not have any Liability, individually or in the aggregate, of a type required to be recorded or reflected on a balance sheet or disclosed in the footnotes thereto under GAAP, except for: (a) Liabilities disclosed, reflected or reserved against in the Parent Balance Sheet; (b) Liabilities that have been incurred by Parent since the date of the Parent Balance Sheet in the Ordinary Course of Business; (c) Liabilities for performance of obligations of Parent under Parent Contracts; (d) Liabilities incurred in connection with the Contemplated Transactions; (e) Liabilities which would not, individually or in the aggregate, reasonably be expected to be material to the Parent; and (f) Liabilities described in [Section 3.9](#) of the Parent Disclosure Schedule.

3.10 **Title to Assets.** Parent owns, and has good and valid title to, or, in the case of leased properties and assets, valid leasehold interests in, all tangible properties or tangible assets and equipment used or held for use in its business or operations or purported to be owned by it that are material to Parent or its business, including: (a) all tangible assets reflected on the Parent Balance Sheet; and (b) all other tangible assets reflected in the books and records of Parent as being owned by Parent. All of such assets are owned or, in the case of leased assets, leased by Parent free and clear of any Encumbrances, other than Permitted Encumbrances.

3.11 **Real Property; Leasehold.** Parent does not own and has never owned any real property. Parent has made available to the Company (a) an accurate and complete list of all real properties with respect to which Parent directly or indirectly holds a valid leasehold interest as well as any other real estate that is in the possession of or leased by Parent and (b) copies of all leases under which any such real property is possessed (the "**Parent Real Estate Leases**"), each of which is in full force and effect, with no existing material default thereunder. Parent's use and operation of each such leased property conforms to all applicable Laws in all material respects, and Parent has exclusive possession of each such leased property and has not granted any occupancy rights to tenants or licensees with respect to such leased property. In addition, each such leased property is free and clear of all Encumbrances other than Permitted Encumbrances.

3.12 **Intellectual Property.**

(a) [Section 3.12\(a\)](#) of the Parent Disclosure Schedule identifies each item of material Parent IP that is the subject of a registration or application in any jurisdiction ("**Parent Registered IP**"), including, with respect to each patent and patent application: (i) the name of the applicant/registrant; (ii) the jurisdiction of application/registration; (iii) the application or registration number; and (iv) any other co-owners. To the Knowledge of Parent, each of the patents and patent applications included in the [Section 3.12\(a\)](#) of the Parent Disclosure Schedule properly identifies by name each and every inventor of the inventions claimed therein as determined in accordance with applicable Laws of the United States. To the Knowledge of Parent, as of the date of this Agreement, no cancellation, interference, opposition, reissue, reexamination or other proceeding of any nature (other than office actions or similar communications issued by any Governmental Body in the ordinary course of prosecution of any pending applications for registration) is pending or threatened in writing, in which the scope, validity, enforceability or ownership of any Parent IP is being or has been contested or challenged. To the Knowledge of Parent, each item of Parent IP is valid and enforceable, and with respect to Parent Registered IP, subsisting. Except as set forth in [Section 2.12\(a\)](#) of the Parent Disclosure Schedule, there are no actions that must be taken within ninety (90) days of the Closing, the failure of which will result in the abandonment, lapse or cancellation of any Parent Registered IP.

(b) Except as has not had and would not reasonably be expected to have, individually or in the aggregate, a Parent Material Adverse Effect, Parent exclusively owns, is the sole assignee of, or has exclusively licensed all material Parent IP (other than as disclosed on [Section 3.12\(b\)](#) of the Parent Disclosure Schedule), free and clear of all Encumbrances other than Permitted Encumbrances. The Parent IP and the Intellectual Property Rights licensed to the Parent pursuant to a valid, enforceable written agreement constitute all Intellectual Property Rights used in, material to or otherwise necessary for the operation of the Parent's business as currently conducted. To the Knowledge of Parent, each Parent Associate involved in the creation or development of any material Parent IP, pursuant to such Parent Associate's activities on behalf of Parent, has signed a valid and enforceable written agreement containing an assignment of such Parent Associate's rights in such Parent IP to Parent. Each Parent Associate who has or has had access to the Parent's trade secrets or confidential information has signed a valid and enforceable written agreement containing confidentiality provisions protecting the Parent IP, trade secrets and confidential information. Parent has taken commercially reasonable steps to protect and preserve the confidentiality of its trade secrets and confidential information.

(c) To the Knowledge of Parent, no funding, facilities or personnel of any Governmental Body or any university, college, research institute or other educational institution has been used to create Parent IP, except for any such funding or use of facilities or personnel that does not result in such Governmental Body or institution obtaining ownership rights or a license to such Parent IP or the right to receive royalties for the practice of such Parent IP.

(d) [Section 3.12\(d\)](#) of Parent Disclosure Schedule sets forth each license agreement pursuant to which the Parent (i) is granted a license under any material Intellectual Property Right owned by any third party that is used by Parent in its business as currently conducted (each a "**Parent In-bound License**") or (ii) grants to any third party a license under any material Parent IP or material Intellectual Property Right licensed to the Parent under a Parent In-bound License (each a "**Parent Out-bound License**") (provided, that, Parent In-bound Licenses shall not include, when entered into in the Ordinary Course of Business, material transfer agreements, services agreements, clinical trial agreements, agreements with Parent Associates, commercially available Software-as-a-Service offerings or off-the-shelf software licenses; and Parent Out-bound Licenses shall not include, when entered into in the Ordinary Course of Business, material transfer agreements, clinical trial agreements, services agreements, or non-exclusive outbound licenses). All Parent In-bound Licenses and Parent Out-bound Licenses are in full force and effect and are valid, enforceable and binding obligations of the Parent and, to the Knowledge of Parent, each other party to such Parent In-bound Licenses or Parent Out-bound Licenses. Neither Parent, nor to the Knowledge of the Parent, any other party to such Parent In-bound Licenses or Parent Out-bound Licenses, is in material breach under any Parent In-bound Licenses or Parent Out-bound Licenses.

(e) To the Knowledge of Parent: (i) the operation of the businesses of Parent as currently conducted does not infringe, misappropriate or otherwise violate any Intellectual Property Rights of any other Person and (ii) no other Person is infringing, misappropriating or otherwise violating any Parent IP. No Legal Proceeding is pending (or, to the Knowledge of Parent, is threatened in writing) (A) against Parent alleging that the operation of the businesses of Parent infringes or constitutes the misappropriation or other violation of any Intellectual Property Rights of another Person or (B) by Parent alleging that another Person has infringed, misappropriated or otherwise violated any of Parent IP or any Intellectual Property Rights exclusively licensed to Parent. Since January 1, 2016, Parent has not received any written notice or other written communication alleging that the operation of the business of Parent infringes or constitutes the misappropriation or other violation of any Intellectual Property Right of another Person.

(f) None of Parent IP or, to the Knowledge of Parent, any material Intellectual Property Rights exclusively licensed to Parent is subject to any pending or outstanding injunction, directive, order, judgment or other disposition of dispute that adversely and materially restricts the use, transfer, registration or licensing by Parent of any such Parent IP or material Intellectual Property Rights exclusively licensed to Parent or its Subsidiaries.

(g) To the Knowledge of Parent, Parent and the operation of Parent's business are in substantial compliance with all Laws pertaining to data privacy and data security of Sensitive Data (as defined in [Section 2.12\(g\)](#)), except to the extent that such noncompliance has not and would not reasonably be expected to have a Parent Material Adverse Effect. To the Knowledge of Parent, since January 1, 2016, there have been (i) no material losses or thefts of data or security breaches relating to Sensitive Data used in the business of Parent, (ii) no violations of any security policy of Parent regarding any such Sensitive Data used in the business of Parent, (iii) no unauthorized access, unauthorized use or unintended or improper disclosure of any Sensitive Data used in the business of Parent, in each case of (i) through (iii), except as would not reasonably be expected to, individually or in the aggregate, have a Parent Material Adverse Effect. Parent has taken reasonable steps and implemented reasonable disaster recovery and security plans and procedures to protect the information technology systems used in, material to or necessary for operation of the Parent's business as currently conducted from unauthorized use or access. To the Knowledge of the Parent, there have been no material malfunctions or unauthorized intrusions or breaches of the information technology systems used in, material to or necessary for the operation of the Parent's business as currently conducted.

3.13 **Agreements, Contracts and Commitments.**

(a) [Section 3.13\(a\)](#) of the Parent Disclosure Schedule lists the following Parent Contracts in effect as of the date of this Agreement (and, except with respect to clauses (xii) and (xiii) below, other than any Benefit Plans) (each, a "**Parent Material Contract**" and collectively, the "**Parent Material Contracts**"):

(i) each Parent Contract relating to any agreement of indemnification or guaranty not entered into in the Ordinary Course of Business;

(ii) each Parent Contract containing: (A) any covenant limiting the freedom of Parent to engage in any line of business or compete with any Person; (B) any most-favored pricing arrangement; (C) any exclusivity provision; or (D) any non-solicitation provision, in each case, except for restrictions that would not materially affect the ability of Parent to conduct its business;

(iii) each Parent Contract relating to capital expenditures and requiring payments after the date of this Agreement in excess of \$75,000 pursuant to its express terms and not cancelable without penalty;

(iv) each Parent Contract relating to the disposition or acquisition of material assets or any ownership interest in any Entity, in each case, involving payments in excess of \$75,000, other than Parent Contracts in which the applicable acquisition or disposition has been consummated and there are no material ongoing obligations;

(v) each Parent Contract relating to any mortgages, indentures, loans, notes or credit agreements, security agreements or other agreements or instruments relating to the borrowing of money or extension of credit or creating any material Encumbrances with respect to any assets of Parent or any loans or debt obligations with officers or directors of Parent;

(vi) each Parent Contract requiring payment by or to Parent after the date of this Agreement in excess of \$75,000 pursuant to its express terms relating to: (A) any distribution agreement (identifying any that contain exclusivity provisions); (B) any agreement involving provision of services or products with respect to any pre-clinical or clinical development activities of Parent; (C) any dealer, distributor, joint marketing, alliance, joint venture, cooperation, development or other agreement currently in force under which Parent has continuing obligations to develop or market any product, technology or service, or any agreement pursuant to which Parent has continuing obligations to develop any Intellectual Property Rights that will not be owned, in whole or in part, by Parent; or (D) any Parent Contract with any third party providing any services relating to the manufacture or production of any product, service or technology of Parent or any Parent Contract to sell, distribute or commercialize any products or service of Parent;

(vii) each Parent Contract with any financial advisor, broker, finder, investment banker or other similar Person, providing advisory services to Parent in connection with the Contemplated Transactions;

(viii) each Parent Real Estate Lease;

(ix) each Contract with any Governmental Body (other than clinical trial agreements for clinical trial studies, cooperative research and development agreements and confidentiality agreements);

(x) each Parent Out-bound License and Parent In-bound License, and each Parent Contract containing a covenant not to sue or otherwise enforce any Intellectual Property Rights;

(xi) each Parent Contract containing any royalty, dividend or similar arrangement based on the revenues or profits of Parent;

(xii) each (A) Parent Contract, offer letter, employment agreement or other agreement with any employee that (1) is not immediately terminable at will by Parent without advance notice, severance, or other cost or liability, or (2) provides for retention payments, change of control payments, severance, accelerated vesting, or any payment or benefit that may or will become due as a result of the Merger (whether alone or in connection with any other event) and (B) each Parent Contract, independent contractor agreement, or other agreement with any consultant or service provider that (1) is not immediately terminable at will by the Company without more than 30 days' prior notice, severance, or other cost or liability or (2) provides for retention payments, change of control payments, severance, accelerated vesting or any payment or benefit that may or will become due as a result of the Merger (whether alone or in connection with any other event);

(xiii) each Parent Contract providing any option to receive a license or other right, any right of first negotiation, any right of first refusal or any similar right to any Person related to any material Parent IP or material Intellectual Property Right licensed to the Parent under a Parent In-bound License;

(xiv) each Parent Contract entered into in settlement of any legal proceeding or other dispute; or

(xv) any other Parent Contract that is not terminable at will (with no penalty or payment) by Parent and (A) which involves payment or receipt by Parent after the date of this Agreement under any such agreement, Contract or commitment of more than \$75,000 in the aggregate, or obligations after the date of this Agreement in excess of \$75,000 in the aggregate, or (B) that is material to the business or operations of Parent.

(b) Parent has delivered or made available to the Company complete copies of all Parent Material Contracts, including all amendments thereto. There are no Parent Material Contracts that are not in written form. Parent has not, nor, to Parent's Knowledge, as of the date of this Agreement, has any other party to a Parent Material Contract, breached, violated or defaulted under, or received notice that it breached, violated or defaulted under, any of the terms or conditions of any Parent Material Contract in such manner as would permit any other party to cancel or terminate any such Parent Material Contract, or would permit any other party to seek damages which would reasonably be expected to be material to Parent or its business. As to Parent, as of the date of this Agreement, each Parent Material Contract is valid, binding, enforceable and in full force and effect, subject to the Enforceability Exceptions. No Person is renegotiating, or has a right pursuant to the terms of any Parent Material Contract to change, any material amount paid or payable to Parent under any Parent Material Contract or any other material term or provision of any Parent Material Contract.

3.14 **Compliance; Permits.**

(a) Parent is, and since January 1, 2016 has been, in compliance in all material respects with all applicable Laws, including the FDCA, the FDA regulations adopted thereunder, the PHS Act and its implementing regulations and any other similar Law administered or promulgated by the FDA or other Drug Regulatory Agency, except for any noncompliance, either individually or in the aggregate, which would not be material to Parent. To the Knowledge of Parent, no investigation, claim, suit, proceeding, audit or other action by any Governmental Body is pending or threatened against Parent. There is no agreement, judgment, injunction, order or decree binding upon Parent which (i) has or would reasonably be expected to have the effect of prohibiting or materially impairing any business practice of Parent, any acquisition of material property by Parent or the conduct of business by Parent as currently conducted, (ii) is reasonably likely to have an adverse effect on Parent's ability to comply with or perform any covenant or obligation under this Agreement or (iii) is reasonably likely to have the effect of preventing, delaying, making illegal or otherwise interfering with the Contemplated Transactions.

(b) Parent holds all required Governmental Authorizations which are material to the operation of the business of Parent as currently conducted (the "**Parent Permits**"). Section 3.14(b) of the Parent Disclosure Schedule identifies each Parent Permit. Parent is in material compliance with the terms of the Parent Permits. No Legal Proceeding is pending or, to the Knowledge of Parent, threatened, which seeks to revoke, limit, suspend, or materially modify any Parent Permit.

(c) To the Knowledge of Parent, there are no proceedings pending or threatened against Parent with respect to an alleged material violation by Parent of the FDCA, FDA regulations adopted thereunder, the Public Health Service Act or any other similar Law administered or promulgated by any Drug Regulatory Agency.

(d) Parent holds all required Governmental Authorizations issuable by any Drug Regulatory Agency necessary or material to the conduct of the business of the Parent as currently conducted (collectively, the "**Parent Regulatory Permits**") and no such Parent Regulatory Permit has been (i) revoked, withdrawn, suspended, canceled or terminated or (ii) modified in any adverse manner. Parent is in compliance in all material respects with the Parent Regulatory Permits and has not received any written notice or other written communication, or to the Knowledge of Parent, any other communication from any Drug Regulatory Agency regarding (A) any material violation of or failure to comply materially with any term or requirement of any Parent Regulatory Permit or (B) any revocation, withdrawal, suspension, cancellation, termination or material modification of any Parent Regulatory Permit. Parent has complied in all material respects with the ICH E9 Guidance for Industry: Statistical Principles for Clinical Trials in the management of the clinical data that have been presented to the Company. To the Knowledge of Parent, there are no facts that would be reasonably likely to result in any warning, untitled or notice of violation letter or Form FDA-483 from the FDA.

(e) All clinical, pre-clinical and other studies and tests conducted by or on behalf of, or sponsored by, Parent, or in which Parent or its respective current products or product candidates have participated, were and, if still pending, are being conducted in all material respects in accordance with standard medical and scientific research procedures and in compliance in all material respects with the applicable regulations of any applicable Drug Regulatory Agency and other applicable Law, as applicable, including the GCP Regulations under 21 C.F.R. Parts 50, 54, 56, 58 and 312. No preclinical or clinical trial conducted by or on behalf of Parent has been terminated or suspended prior to completion for safety or non-compliance reasons. Since January 1, 2016, Parent has not received any notices, correspondence, or other communications from any Drug Regulatory Agency requiring, or to the Knowledge of Parent threatening to initiate, the termination or suspension of any clinical studies conducted by or on behalf of, or sponsored by, Parent or in which Parent or its current products or product candidates have participated.

(f) To the Knowledge of Parent, Parent is not the subject of any pending or threatened investigation in respect of its business or products by the FDA pursuant to its "Fraud, Untrue Statements of Material Facts, Bribery, and Illegal Gratuities" Final Policy set forth in 56 Fed. Reg. 46191 (September 10, 1991) and any amendments thereto. To the Knowledge of Parent, neither Parent nor any of its officers, employees or agents have committed any acts, made any statement, or has not failed to make any statement, in each case in respect of its business or products that would violate the FDA's "Fraud, Untrue Statements of Material Facts, Bribery, and Illegal Gratuities" Final Policy, and any amendments thereto. Parent or any of its officers, employees or, to the Knowledge of Parent, agents has not been convicted of any crime or engaged in any conduct that could result in a debarment or exclusion (i) under 21 U.S.C. Section 335a or (ii) any similar applicable Law. No debarment or exclusionary claims, actions, proceedings or investigations in respect of their business or products are pending or, to the Knowledge of Parent, threatened against Parent or any of its officers, employees or, to the Knowledge of Parent, agents.

(g) Neither Parent, nor any of its officers, directors, employees or agents has been, is, or is in anticipation of being (based on a conviction by the courts or a finding of fault by a regulatory authority): (a) debarred pursuant to the Generic Drug Enforcement Act of 1992 (21 U.S.C. § 335a), as amended from time to time; (b) disqualified from participating in clinical trials pursuant to 21 C.F.R. §312.70, as amended from time to time; (c) disqualified as a testing facility under 21 C.F.R. Part 58, Subpart K, as amended from time to time; (d) excluded, debarred or suspended from or otherwise ineligible to participate in a "Federal Health Care Program" as defined in 42 U.S.C. 1320a-7b(f), as amended from time to time, or any other governmental payment, procurement or non-procurement program; or (e) included on the HHS/OIG List of Excluded Individuals/Entities, the General Services Administration's List of Parties Excluded from Federal Programs, or the FDA Debarment List. Parent is not using, nor has it ever used, in any capacity any Person that has ever been, is currently, or to the Knowledge of Parent is the subject of a proceeding that could lead to the Parent or its officers, directors, employees or agents becoming, as applicable, a Debarred Entity, a Debarred Individual, an Excluded Entity, an Excluded Individual, or a Convicted Entity or a Convicted Individual, nor are they listed on the FDA's Disqualified/Restricted List. The Parent, nor any of its officers, directors, employees or agents, has been excluded or threatened with exclusion under state or federal statutes or regulations, including under 42 U.S.C. § 1320a-7 or relevant regulations in 42 C.F.R. Part 1001, or assessed or threatened with assessment of civil money penalties pursuant to 42 C.F.R. Part 1003. Neither the Parent nor to its knowledge its officers, directors, employees or agents has taken any action that would now or in the future constitute an improper inducement under federal or state healthcare laws.

(h) Parent is not a Covered Entity governed by HIPAA, but each of its health plans, if required, has complied in all material respects with all Laws relating to HIPAA, including the standards for the privacy of Individually Identifiable Health Information at 45 C.F.R. Parts 160 and 164, Subparts A and E, the standards for the protection of Electronic Protected Health Information set forth at 45 C.F.R. Part 160 and 45 C.F.R. Part 164, Subpart A and Subpart C, the standards for transactions and code sets used in electronic transactions at 45 C.F.R. Part 160, Subpart A and Part 162, and the standards for Breach Notification for Unsecured Protected Health Information at 45 C.F.R. Part 164, Subpart D, all as amended from time to time. Each of Parent's health plans has entered into, where required, and are in compliance in all material respects with the terms of all Business Associate Agreements to which Parent has signed as plan sponsor where the plan is a party or otherwise bound. Each of Parent's health plans, where required, has created and maintained written policies and procedures to protect the privacy of all protected health information, provide training to all employees and agents as required under HIPAA, and have implemented security procedures, including physical, technical and administrative safeguards, to protect all personal information and Protected Health Information stored or transmitted in electronic form. Parent has not received written notice from the Office for Civil Rights for the U.S. Department of Health and Human Services or any other Governmental Body of any allegation regarding its failure to comply with HIPAA or any other state law or regulation applicable to the protection of individually identifiable health information or personally identifiable information. No successful Security Incident, Breach of Unsecured Protected Health Information or breach of personally identifiable information under applicable state or federal laws have occurred with respect to information maintained or transmitted to Parent, or an agent or third party subject to a Business Associate Agreement with Parent. If required, Parent is currently submitting, receiving and handling or is capable of submitting receiving and handling transactions in accordance with the Standard Transaction Rule. All capitalized terms in this Section 3.14(f) not otherwise defined in this Agreement shall have the meanings set forth under HIPAA.

3.15 Legal Proceedings; Orders.

(a) As of the date of this Agreement, to the Knowledge of the Parent, there is no material pending Legal Proceeding and no Person has threatened in writing to commence any Legal Proceeding: (i) that involves (A) Parent, (B) any Parent Associate (in his or her capacity as such) or (C) any of the material assets owned or used by Parent; or (ii) that challenges, or that would have the effect of preventing, delaying, making illegal or otherwise interfering with, the Contemplated Transactions.

(b) Since January 1, 2016 through the date of this Agreement, no Legal Proceeding has been pending against Parent that resulted in material liability to Parent.

(c) There is no order, writ, injunction, judgment or decree to which Parent, or any of the material assets owned or used by Parent, is subject. To the Knowledge of Parent, no officer of Parent is subject to any order, writ, injunction, judgment or decree that prohibits such officer or employee from engaging in or continuing any conduct, activity or practice relating to the business of Parent or to any material assets owned or used by Parent.

3.16 Tax Matters.

(a) Parent and Merger Sub have timely filed all income Tax Returns and other material Tax Returns that they were required to file under applicable Law. All such Tax Returns are correct and complete in all material respects and have been prepared in compliance with all applicable Law. No written claim has ever been made by any Governmental Body in any jurisdiction where Parent or Merger Sub does not file a particular Tax Return or pay a particular Tax that Parent or Merger Sub is subject to taxation by that jurisdiction.

(b) All income and other material Taxes due and owing by Parent or Merger Sub on or before the date hereof (whether or not shown on any Tax Return) have been fully paid. The unpaid Taxes of Parent and Merger Sub did not, as of the date of the Parent Balance Sheet, materially exceed the reserve for Tax liability (excluding any reserve for deferred Taxes established to reflect timing differences between book and Tax items) set forth on the face of the Parent Balance Sheet. Since the Parent Balance Sheet Date, neither Parent nor Merger Sub has incurred any material Liability for Taxes outside the Ordinary Course of Business.

(c) All Taxes that Parent or Merger Sub are or were required by Law to withhold or collect have been duly and timely withheld or collected in all material respects on behalf of its respective employees, independent contractors, stockholders, lenders, customers or other third parties and, have been timely paid to the proper Governmental Body or properly set aside in accounts for this purpose.

(d) There are no Encumbrances for material Taxes (other than Permitted Encumbrances) upon any of the assets of Parent or Merger Sub.

(e) No deficiencies for income or other material Taxes with respect to Parent or Merger Sub have been claimed, proposed or assessed by any Governmental Body in writing. There are no pending or ongoing, and to the Knowledge of Parent, threatened audits, assessments or other actions for or relating to any liability in respect of a material amount of Taxes of Parent or Merger Sub. Neither Parent nor Merger Sub (or any of their predecessors) has waived any statute of limitations in respect of any income or other material Taxes or agreed to any extension of time with respect to any income or other material Tax assessment or deficiency.

(f) Parent has not been a United States real property holding corporation within the meaning of Section 897(c)(2) of the Code during the applicable period specified in Section 897(c)(1)(A)(ii) of the Code.

(g) Neither Parent nor Merger Sub is a party to any Tax allocation agreement, Tax sharing agreement, Tax indemnity agreement, or similar agreement or arrangement, other than customary commercial contracts entered into in the Ordinary Course of Business the principal subject matter of which is not Taxes.

(h) Neither Parent nor Merger Sub will be required to include any material item of income in, or exclude any material item of deduction from, taxable income for any Tax period (or portion thereof) ending after the Closing Date as a result of any: (i) change in method of accounting for Tax purposes filed on or prior to the Closing Date; (ii) use of an improper method of accounting for a Tax period ending on or prior to the Closing Date; (iii) "closing agreement" as described in Section 7121 of the Code (or any similar provision of state, local or foreign Law) executed on or prior to the Closing Date; (iv) intercompany transaction or excess loss account described in Treasury Regulations under Section 1502 of the Code (or any similar provision of state, local or foreign Law) entered into on or prior to the Closing Date; (v) installment sale or open transaction disposition made on or prior to the Closing Date; (vi) prepaid amount received on or prior to the Closing Date; or (vii) election under Section 108(i) of the Code (or any similar provision of state, local or foreign Law) made on or prior to the Closing Date. Parent has not made any election under Section 965(h) of the Code.

(i) Neither Parent nor Merger Sub has ever been (i) a member of a consolidated, combined or unitary Tax group (other than such a group the common parent of which is Parent) or (ii) a party to any joint venture, partnership, or other arrangement that is treated as a partnership for U.S. federal income Tax purposes. Neither Parent nor Merger Sub has any Liability for any material Taxes of any Person (other than Parent and Merger Sub) under Treasury Regulations Section 1.1502-6 (or any similar provision of state, local, or foreign Law), or as a transferee or successor.

(j) Neither Parent nor Merger Sub has, since January 1, 2016, distributed stock of another Person, or had its stock distributed by another Person, in a transaction that was purported or intended to be governed in whole or in part by Section 355 of the Code or Section 361 of the Code (or any similar provisions of state, local or foreign Law).

(k) Parent and Merger Sub (i) are, and since their formation have been, domestic corporations for United States federal income tax purpose; and (ii) has never had a permanent establishment (within the meaning of an applicable Tax treaty) or otherwise had an office or fixed place of business in a country other than the United States.

(l) Neither Parent nor Merger Sub has participated in or been a party to a transaction that, as of the date of this Agreement, constitutes a "listed transaction" that is required to be reported to the IRS pursuant to Section 6011 of the Code and applicable Treasury Regulations thereunder.

(m) Neither Parent nor Merger Sub has taken or agreed to take any action or knows of any fact that would reasonably be expected to prevent the Merger from qualifying for the Intended Tax Treatment.

For purposes of this Section 3.16, each reference to Parent or Merger Sub shall be deemed to include any Person that was liquidated into, merged with, or is otherwise a predecessor to, Parent or Merger Sub, respectively.

3.17 Employee and Labor Matters; Benefit Plans.

(a) Section 3.17(a) of the Parent Disclosure Schedule is a list of all Parent Benefit Plans, including, without limitation, each Parent Benefit Plan that provides for retirement, change in control, stay or retention deferred compensation, incentive compensation, severance or retiree medical or life insurance benefits. "**Parent Benefit Plan**" means each (i) "employee benefit plan" as defined in Section 3(3) of ERISA and (ii) other pension, retirement, deferred compensation, excess benefit, profit sharing, bonus, incentive, equity or equity-based (other than individual Parent Options made pursuant to the Parent's standard forms, in which case only representative standard forms of such stock option agreements shall be scheduled), phantom equity, employment (other than individual employment agreements made pursuant to Parent's standard forms, in which case only representative standard forms of such employment agreements shall be scheduled), offer letter (other than individual offer letters made pursuant to Parent's standard forms, in which case only representative standard forms of such offers shall be scheduled), consulting, severance, change-of-control, retention, health, life, disability, group insurance, paid-time off, holiday, welfare and fringe benefit plan, program, contract, or arrangement (whether written or unwritten, qualified or nonqualified, funded or unfunded and including any that have been frozen), in any case, maintained, contributed to, or required to be contributed to, by Parent or any of its subsidiaries for the benefit of any current or former employee, director, officer or independent contractor of Parent or under which Parent has any actual or contingent liability (including, without limitation, as to the result of it being treated as a single employer under Code Section 414 with any other person).

(b) As applicable with respect to each Parent Benefit Plan, Parent has made available to the Company, true and complete copies of (i) each Parent Benefit Plan, including all amendments thereto, and in the case of an unwritten Parent Benefit Plan, a written description thereof, (ii) all current trust documents, investment management contracts, custodial agreements, administrative services agreements and insurance and annuity contracts relating thereto, (iii) the current summary plan description and each summary of material modifications thereto, (iv) the most recently filed annual reports with any Governmental Body (e.g., Form 5500 and all schedules thereto), (v) the most recent IRS determination, opinion or advisory letter, (vi) the most recent summary annual reports, nondiscrimination testing reports, actuarial reports, financial statements and trustee reports, and (vii) all material records, notices and filings concerning IRS or Department of Labor or other Governmental Body audits or investigations.

(c) Each Parent Benefit Plan has been maintained, operated and administered in compliance in all material respects with its terms and any related documents or agreements and the applicable provisions of ERISA, the Code and all other Laws.

(d) The Parent Benefit Plans that are "employee pension benefit plans" within the meaning of Section 3(2) of ERISA and which are intended to meet the qualification requirements of Section 401(a) of the Code have received determination or opinion letters from the IRS on which they may currently rely to the effect that such plans are qualified under Section 401(a) of the Code and the related trusts are exempt from federal income Taxes under Section 501(a) of the Code, respectively, and to the Knowledge of Parent nothing has occurred that would reasonably be expected to materially adversely affect the qualification of such Parent Benefit Plan or the tax exempt status of the related trust.

(e) Neither Parent nor any Parent ERISA Affiliate maintains, contributes to, is required to contribute to, or has any actual or contingent liability with respect to, (i) any "employee pension benefit plan" (within the meaning of Section 3(2) of ERISA) that is subject to Title IV or Section 302 of ERISA or Section 412 of the Code, (ii) any "multiemployer plan" (within the meaning of Section 3(37) of ERISA), or (iii) any "multiple employer plan" (within the meaning of Section 413 of the Code). No Parent Benefit Plan is a self-funded group health plan that is a "multiple employer welfare arrangement" (within the meaning of Section 3(40) of ERISA).

(f) There are no pending audits or investigations by any Governmental Body involving any Parent Benefit Plan, and no pending or, to the Knowledge of Parent, threatened claims (except for individual claims for benefits payable in the normal operation of the Parent Benefit Plans), suits or proceedings involving any Parent Benefit Plan, any fiduciary thereof or service provider thereto, in any case, except as would not be reasonably expected to result in material liability to Parent. All contributions and premium payments required to have been made under any of the Parent Benefit Plans or by applicable Law (without regard to any waivers granted under Section 412 of the Code), have been timely made in all material respects and neither Parent nor any Parent ERISA Affiliate has any material liability for any unpaid contributions with respect to any Parent Benefit Plan.

(g) Neither Parent or any Parent ERISA Affiliates, nor to the Knowledge of Parent, any fiduciary, trustee or administrator of any Parent Benefit Plan, has engaged in, or in connection with the Contemplated Transactions will engage in, any transaction with respect to any Parent Benefit Plan which would subject any such Parent Benefit Plan, Parent or Parent ERISA Affiliates to a material Tax, material penalty or material liability for a "prohibited transaction" under Section 406 of ERISA or Section 4975 of the Code.

(h) No Parent Benefit Plan provides death, medical, dental, vision, life insurance or other welfare benefits beyond termination of service or retirement other than coverage mandated by Law and neither Parent nor any Parent ERISA Affiliates has made a written or oral representation promising the same.

(i) Neither the execution of this Agreement nor the performance of the Contemplated Transactions will either alone or in connection with any other event(s) (i) result in any payment becoming due to any current or former employee, director, officer, or independent contractor of Parent, (ii) increase any amount of compensation or benefits otherwise payable under any Parent Benefit Plan, (iii) result in the acceleration of the time of payment, funding or vesting of any benefits under any Parent Benefit Plan, (iv) require any contribution or payment to fund any obligation under any Parent Benefit Plan or (v) limit the right to merge, amend or terminate any Parent Benefit Plan that is subject to ERISA.

(j) Neither the execution of this Agreement nor the performance of the Contemplated Transactions (either alone or when combined with the occurrence of any other event, including without limitation, a termination of employment) will result in the receipt or retention by any Person who is a "disqualified individual" (within the meaning of Code Section 280G) with respect to Parent of any payment or benefit under any Parent Benefit Plan that is or could be characterized as a "parachute payment" (within the meaning of Code Section 280G), determined without regard to the application of Code Section 280G(b)(5).

(k) The exercise price of each Parent Option granted to a U.S. taxpayer is not, never has been, less than the fair market value of one share of Parent Common Stock as of the grant date of such Parent Option.

(l) Each Parent Benefit Plan providing for deferred compensation that constitutes a "nonqualified deferred compensation plan" (as defined in Section 409A(d)(1) of the Code and the regulations promulgated thereunder) is, and has been, established, administered and maintained in material compliance with the requirements of Section 409A of the Code and the regulations promulgated thereunder in all material respects.

(m) No current or former employee, officer, director or independent contractor of Parent has any "gross up" agreements with the Parent or other assurance of reimbursement by the Parent for any Taxes imposed under Code Section 409A or Code Section 4999.

(n) No Parent Benefit Plan is maintained outside of the United States.

(o) Parent has provided to the Company a true and correct list, as of the date of this Agreement, containing the names of all full-time and part-time employees, as well as their respective full-time or part-time status, and the names of all independent contractors and consultants (and indication as such), and, as applicable: (i) the annual dollar amount of all compensation (including wages, salary or fees, commissions, director's fees, fringe benefits, bonuses, profit sharing payments, and other payments or benefits of any type) payable to each person; (ii), dates of employment or service; (iii) title; (iv) any eligibility to receive severance, notice of termination, retention payment, change of control payment, or other similar compensation; (v) visa status, if applicable; (vi) work location; and (vii) with respect to employees, a designation of whether the employee is classified as exempt or non-exempt for purposes of the FLSA and any similar state law.

(p) Parent is not and never has been a party to, bound by, or has a duty to bargain under, any collective bargaining agreement or other Contract with a labor union, labor organization, or similar Person representing any of its employees, and there is no labor union, labor organization, or similar Person representing or, to the Knowledge of Parent, purporting to represent or seeking to represent any employees of Parent, including through the filing of a petition for representation election. There is not and has not been in the past three years, nor is there or has there been in the past three years any threat of, any strike, slowdown, work stoppage, lockout, union election petition, demand for recognition, or any similar activity or dispute, or, to the Knowledge of Parent, any union organizing activity, against Parent or any of its Subsidiaries. No event has occurred, and no condition or circumstance exists, that might directly or indirectly be likely to give rise to or provide a basis for the commencement of any such strike, slowdown, work stoppage, lockout, union election petition, demand for recognition, any similar activity or dispute, or, to the Knowledge of Parent, any union organizing activity.

(q) Parent is, and since January 1, 2016 has been, in material compliance with all applicable Laws respecting labor, employment, employment practices, and terms and conditions of employment, including worker classification, discrimination, harassment and retaliation, equal employment opportunities, fair employment practices, meal and rest periods, immigration, employee safety and health, payment of wages (including overtime wages), unemployment and workers' compensation, leaves of absence, hours of work, and termination of employment. Except as would not be reasonably likely to result in a material liability to Parent, with respect to employees of Parent, Parent, since January 1, 2016: (i) has withheld and reported all amounts required by Law or by agreement to be withheld and reported with respect to wages, salaries and other payments, benefits, or compensation to employees; (ii) is not liable for any arrears of wages (including overtime wages), severance pay or any Taxes or any penalty for failure to comply with any of the foregoing; and (iii) is not liable for any payment to any trust or other fund governed by or maintained by or on behalf of any Governmental Body, with respect to unemployment compensation benefits, disability, social security or other benefits or obligations for employees (other than routine payments to be made in the Ordinary Course of Business). There are no actions, suits, claims, charges, lawsuits, investigations, audits or administrative matters pending or, to the Knowledge of the Company, threatened or reasonably anticipated against Parent relating to any employee, applicant for employment, consultant, employment agreement or Parent Benefit Plan (other than routine claims for benefits).

(r) Except as would not be reasonably likely to result in a material liability to Parent, with respect to each individual who currently renders services to Parent, Parent has accurately classified each such individual as an employee, independent contractor, or otherwise under all applicable Laws and, for each individual classified as an employee, Parent has accurately classified him or her as exempt or non-exempt under all applicable Laws. Parent has no material liability with respect to any misclassification of: (i) any Person as an independent contractor rather than as an employee, (ii) any employee leased from another employer, or (iii) any employee currently or formerly classified as exempt under all applicable Laws.

(s) Within the preceding five (5) years, the Company has not implemented any "plant closing" or "mass layoff" of employees that would reasonably be expected to require notification under the WARN Act or any similar state or local law. No "plant closing" or "mass layoff" will be implemented before the Closing Date without advance notification to and approval of Company, and there has been no "employment loss" as defined by the WARN Act or comparable state law within the ninety (90) days prior to the Closing Date.

(t) There is no Legal Proceeding, claim, unfair labor practice charge or complaint, labor dispute or grievance pending or, to the Knowledge of Parent, threatened against Parent relating to labor, employment, employment practices, or terms and conditions of employment.

3.18 Environmental Matters. Parent is and since January 1, 2013 has complied with all applicable Environmental Laws, which compliance includes the possession by Parent of all permits and other Governmental Authorizations required under applicable Environmental Laws and compliance with the terms and conditions thereof, except for any failure to be in such compliance that, either individually or in the aggregate, would not reasonably be expected to be material to Parent or its business. Parent has not received since January 1, 2013 (or prior to that time, which is pending and unresolved), any written notice or other communication (in writing or otherwise), whether from a Governmental Body or other Person, that alleges that Parent is not in compliance with or has liability pursuant to any Environmental Law and, to the Knowledge of Parent, there are no circumstances that would reasonably be expected to prevent or interfere with Parent's compliance in any material respects with any Environmental Law, except where such failure to comply would not reasonably be expected to be material to Parent or its business. No current or (during the time a prior property was leased or controlled by Parent) prior property leased or controlled by Parent has had a release of or exposure to Hazardous Materials in material violation of or as would reasonably be expected to result in any material liability of Parent pursuant to Environmental Law. No consent, approval or Governmental Authorization of or registration or filing with any Governmental Body is required by Environmental Laws in connection with the execution and delivery of this Agreement or the consummation of Contemplated Transactions. Prior to the date hereof, Parent has provided or otherwise made available to the Company true and correct copies of all material environmental reports, assessments, studies and audits in the possession or control of Parent with respect to any property leased or controlled by Parent or any business operated by it.

3.19 Insurance. Parent has delivered or made available to the Company accurate and complete copies of all material insurance policies and all material self-insurance programs and arrangements relating to the business, assets, liabilities and operations of Parent. Each of such insurance policies is in full force and effect and Parent is in compliance in all material respects with the terms thereof. Other than customary end of policy notifications from insurance carriers, since January 1, 2016, Parent has not received any notice or other communication regarding any actual or possible: (a) cancellation or invalidation of any insurance policy; or (b) refusal or denial of any coverage, reservation of rights or rejection of any material claim under any insurance policy. Parent has provided timely written notice to the appropriate insurance carrier(s) of each Legal Proceeding that is currently pending against Parent for which Parent has insurance coverage, and no such carrier has issued a denial of coverage or a reservation of rights with respect to any such Legal Proceeding, or informed Parent of its intent to do so.

3.20 No Financial Advisors. No broker, finder or investment banker is entitled to any brokerage fee, finder's fee, opinion fee, success fee, transaction fee or other fee or commission in connection with the Contemplated Transactions based upon arrangements made by or on behalf of Parent.

3.21 Transactions with Affiliates. Except as set forth in the Parent SEC Documents filed prior to the date of this Agreement, since the date of Parent's last proxy statement filed in 2019 with the SEC, no event has occurred that would be required to be reported by Parent pursuant to Item 404 of Regulation S-K. Section 3.21 of the Parent Disclosure Schedule identifies each Person who is (or who may be deemed to be) an Affiliate of Parent as of the date of this Agreement.

3.22 Anti-Bribery. Neither Parent nor any of its directors, officers, employees or, to Parent's Knowledge, agents or any other Person acting on its behalf has directly or indirectly made any bribes, rebates, payoffs, influence payments, kickbacks, illegal payments, illegal political contributions, or other payments, in the form of cash, gifts, or otherwise, or taken any other action, in violation of Anti-Bribery Laws. To the Knowledge of Parent, Parent is not or has not been the subject of any investigation or inquiry by any Governmental Body with respect to potential violations of Anti-Bribery Laws.

3.23 Valid Issuance. The Parent Common Stock to be issued in the Merger will, when issued in accordance with the provisions of this Agreement, be validly issued, fully paid and nonassessable.

3.24 Opinion of Financial Advisor. The Parent Board has received an opinion of Stifel, Nicolaus & Company, Incorporated to the effect that, as of the date of this Agreement and subject to the assumptions, qualifications, limitations and other matters set forth therein that the Consideration to be paid by Parent in the Merger pursuant to this Agreement is fair, from a financial point of view, to Parent. It is agreed and understood that such opinion is for the benefit of the Parent Board and may not be relied upon by the Company or any other party.

3.25 Disclaimer of Other Representations or Warranties.

(a) Except as previously set forth in this Section 3 or in any certificate delivered by Parent or Merger Sub to the Company pursuant to this Agreement, neither Parent nor Merger Sub makes any representation or warranty, express or implied, at law or in equity, with respect to it or any of its assets, liabilities or operations, and any such other representations or warranties are hereby expressly disclaimed.

(b) Each of Parent and Merger Sub acknowledges and agrees that, except for the representations and warranties of the Company set forth in Section 2, none of Parent, Merger Sub or any of their respective Representatives is relying on any other representation or warranty of the Company or any other Person made outside of Section 2, including regarding the accuracy or completeness of any such other representations or warranties or the omission of any material information, whether express or implied, in each case, with respect to the Contemplated Transactions.

Section 4. CERTAIN COVENANTS OF THE PARTIES

4.1 Operation of Parent's Business.

(a) Except as set forth on Section 4.1(a) of the Parent Disclosure Schedule, as expressly permitted by this Agreement, as required by applicable Law or unless the Company shall otherwise consent in writing (which consent shall not be unreasonably withheld, delayed or conditioned), during the period commencing on the date of this Agreement and continuing until the earlier to occur of the termination of this Agreement pursuant to Section 9 and the Effective Time (the "Pre-Closing Period"), each of Parent and Merger Sub shall conduct its business and operations in the Ordinary Course of Business and in compliance in all material respects with all applicable Laws and the requirements of all Contracts that constitute Parent Material Contracts, shall keep in full force and effect all material insurance policies of Parent and

shall not take any action that would materially adversely affect or delay the ability of any of the parties hereto from obtaining any necessary approvals required by this Agreement, performing its covenants or agreements hereunder, or otherwise materially delay or prohibit the Contemplated Transactions.

(b) Except (i) as expressly permitted by this Agreement, (ii) as set forth in Section 4.1(b) of the Parent Disclosure Schedule, (iii) as required by applicable Law or (iv) with the prior written consent of the Company (which consent shall not be unreasonably withheld, delayed or conditioned), at all times during the Pre-Closing Period, Parent shall not, nor shall it cause or permit Merger Sub to, do any of the following:

(i) declare, accrue, set aside or pay any dividend or make any other distribution in respect of any shares of its capital stock or repurchase, redeem or otherwise reacquire any shares of its capital stock or other securities (except in connection with the payment of the exercise price and/or withholding Taxes incurred upon the exercise, settlement or vesting of any award granted under the Parent Stock Plans in accordance with the terms of such award in effect on the date of this Agreement);

(ii) sell, issue, grant, pledge or otherwise dispose of or encumber or authorize any of the foregoing with respect to: (A) any capital stock or other security of Parent (except for Parent Common Stock issued upon the valid exercise of outstanding Parent Options); (B) any option, warrant or right to acquire any capital stock or any other security, other than option grants to employees and service providers in the Ordinary Course of Business; or (C) any other instrument convertible into or exchangeable for any capital stock or other security of Parent;

(iii) except as required to give effect to anything in contemplation of the Closing, amend any of its Organizational Documents, or effect or be a party to any merger, consolidation, share exchange, business combination, recapitalization, reclassification of shares, stock split, reverse stock split or similar transaction except, for the avoidance of doubt, the Contemplated Transactions;

(iv) form any Subsidiary or acquire any equity interest or other interest in any other Entity or enter into a joint venture with any other Entity;

(v) (A) lend money to any Person (except for the advance of reasonable expenses to employees, directors and consultants in the Ordinary Course of Business), (B) incur or guarantee any indebtedness for borrowed money or (C) guarantee any debt securities of others;

(vi) other than as required by applicable Law or the terms of any Parent Benefit Plan as in effect on the date of this Agreement: (A) adopt, terminate, establish or enter into any Parent Benefit Plan; (B) cause or permit any Parent Benefit Plan to be amended in any material respect; (C) pay any bonus or make any profit-sharing or similar payment to, or increase the amount of the wages, salary, commissions, benefits or other compensation or remuneration payable to, any of its directors, officers or employees, other than increases in base salary and annual cash bonus opportunities and payments made in the Ordinary Course of Business consistent with past practice; or (D) increase the severance, retention or change of control benefits offered to any current or former or new employees, directors or consultants;

(vii) recognize any labor union, labor organization, or similar Person except as otherwise required by law and after advance notice to the Company;

(viii) enter into any material transaction other than in the Ordinary Course of Business;

(ix) acquire any material asset or sell, lease or otherwise irrevocably dispose of any of its material assets or properties, or grant any Encumbrance with respect to such assets or properties;

(x) sell, assign, transfer, license, sublicense or otherwise dispose of any material Parent IP (other than pursuant to non-exclusive licenses in the Ordinary Course of Business);

(xi) make, change or revoke any material Tax election, fail to pay any income or other material Tax as such Tax becomes due and payable, file any amendment making any material change to any Tax Return, settle or compromise any income or other material Tax liability, enter into any Tax allocation, sharing, indemnification or other similar agreement or arrangement (other than customary commercial contracts entered into in the Ordinary Course of Business the principal subject matter of which is not Taxes), request or Consent to any extension or waiver of any limitation period with respect to any claim or assessment for any income or other material Taxes (other than pursuant to an extension of time to file any Tax Return granted in the Ordinary Course of Business of not more than six months), or adopt or change any material accounting method in respect of Taxes;

(xii) enter into, materially amend or terminate any Parent Material Contract;

(xiii) other than incurrence or payment of Parent Transaction Expenses, make any expenditures, incur any Liabilities or discharge or satisfy any Liabilities, in each case, outside of the Ordinary Course of Business;

(xiv) other than as required by Law or GAAP, take any action to change accounting policies or procedures;

(xv) initiate or settle any Legal Proceeding; or

(xvi) agree, resolve or commit to do any of the foregoing.

Nothing contained in this Agreement shall give the Company, directly or indirectly, the right to control or direct the operations of Parent prior to the Effective Time. Prior to the Effective Time, Parent shall exercise, consistent with the terms and conditions of this Agreement, complete unilateral control and supervision over its business operations.

4.2 Operation of the Company's Business.

(a) Except as set forth on Section 4.2(a) of the Company Disclosure Schedule, as expressly permitted by this Agreement, as required by applicable Law or unless Parent shall otherwise consent in writing (which consent shall not be unreasonably withheld, delayed or conditioned), during the Pre-Closing Period: the Company shall conduct its business and operations in the Ordinary Course of Business and in compliance in all material respects with all applicable Laws and the requirements of all Contracts that constitute Company Material Contracts, shall keep in full force and effect all material insurance policies of the Company and shall not take any action that would materially adversely affect or delay the ability of any of the parties hereto from obtaining any necessary approvals required by this Agreement, performing its covenants or agreements hereunder, or otherwise materially delay or prohibit the Contemplated Transactions.

(b) Except (i) as expressly permitted by this Agreement, (ii) as set forth in Section 4.2(b) of the Company Disclosure Schedule, (iii) as required by applicable Law or (iv) with the prior written consent of Parent (which consent shall not be unreasonably withheld, delayed or conditioned), at all times during the Pre-Closing Period, the Company shall not do any of the following:

(i) declare, accrue, set aside or pay any dividend or make any other distribution in respect of any shares of its capital stock or repurchase, redeem or otherwise reacquire any shares of its capital stock or other securities (except for shares of Company Common Stock from terminated employees, directors or consultants of the Company);

(ii) sell, issue, grant, pledge or otherwise dispose of or encumber or authorize any of the foregoing with respect to: (A) any capital stock or other security of the Company (except for shares of outstanding Company Common Stock issued upon the valid exercise of Company Options); (B) any option, warrant or right to acquire any capital stock or any other security, other than option grants to employees and service providers in the Ordinary Course of Business; or (C) any other instrument convertible into or exchangeable for any capital stock or other security of the Company;

(iii) except as required to give effect to anything in contemplation of the Closing, amend its Organizational Documents, or effect or be a party to any merger, consolidation, share exchange, business combination, recapitalization, reclassification of shares, stock split, reverse stock split or similar transaction except, for the avoidance of doubt, the Contemplated Transactions;

(iv) form any Subsidiary or acquire any equity interest or other interest in any other Entity or enter into a joint venture with any other Entity;

(v) (A) lend money to any Person (except for the advance of reasonable expenses to employees, directors and consultants in the Ordinary Course of Business), (B) incur or guarantee any indebtedness for borrowed money or (C) guarantee any debt securities of others;

(vi) other than as required by applicable Law or the terms of any Company Benefit Plan as in effect on the date of this Agreement: (A) adopt, terminate, establish or enter into any Company Benefit Plan; (B) cause or permit any Company Benefit Plan to be amended in any material respect; (C) pay any bonus or make any profit-sharing or similar payment to, or increase the amount of the wages, salary, commissions, benefits or other compensation or remuneration payable to, any of its directors, officers or employees, other than increases in base salary and annual cash bonus opportunities and payments made in the Ordinary Course of Business consistent with past practice; or (D) increase the severance, retention or change of control benefits offered to any current or former or new employees, directors or consultants;

(vii) recognize any labor union, labor organization, or similar Person, except as otherwise required by law and after advance notice to the Parent;

(viii) enter into any material transaction other than in the Ordinary Course of Business;

(ix) acquire any material asset or sell, lease or otherwise irrevocably dispose of any of its material assets or properties, or grant any Encumbrance with respect to such assets or properties;

(x) sell, assign, transfer, license, sublicense or otherwise dispose of any material Company IP (other than pursuant to non-exclusive licenses in the Ordinary Course of Business);

(xi) make, change or revoke any material Tax election, fail to pay any income or other material Tax as such Tax becomes due and payable, file any amendment making any material change to any Tax Return, settle or compromise any income or other material Tax liability, enter into any Tax allocation, sharing, indemnification or other similar agreement or arrangement (other than customary commercial contracts entered into in the Ordinary Course of Business the principal subject matter of which is not Taxes), request or Consent to any extension or waiver of any limitation period with respect to any claim or assessment for any income or other material Taxes (other than pursuant to an extension of time to file any Tax Return granted in the Ordinary Course of Business of not more than six months), or adopt or change any material accounting method in respect of Taxes;

(xii) enter into, materially amend or terminate any Company Material Contract;

(xiii) other than incurrence or payment of any Company Transaction Expenses, make any expenditures, incur any Liabilities or discharge or satisfy any Liabilities, in each case, outside of the Ordinary Course of Business;

(xiv) other than as required by Law or GAAP, take any action to change accounting policies or procedures;

(xv) initiate or settle any Legal Proceeding; or

(xvi) agree, resolve or commit to do any of the foregoing.

(c) Nothing contained in this Agreement shall give Parent, directly or indirectly, the right to control or direct the operations of the Company prior to the Effective Time. Prior to the Effective Time, the Company shall exercise, consistent with the terms and conditions of this Agreement, complete unilateral control and supervision over its business operations.

4.3 Access and Investigation.

(a) Subject to the terms of the Confidentiality Agreement, which the Parties agree will continue in full force following the date of this Agreement, during the Pre-Closing Period, upon reasonable notice, Parent, on the one hand, and the Company, on the other hand, shall and shall use commercially reasonable efforts to cause such Party's Representatives to: (i) provide the other Party and such other Party's Representatives with reasonable access during normal business hours to such Party's Representatives, personnel, property and assets and to all existing books, records, Tax Returns, work papers and other documents and information relating to such Party and its Subsidiaries; (ii) provide the other Party and such other Party's Representatives with such copies of the existing books, records, Tax Returns, work papers, product data, and other documents and information relating to such Party and its Subsidiaries, and with such additional financial, operating and other data and information regarding such Party and its Subsidiaries as the other Party may reasonably request; (iii) permit the other Party's officers and other employees to meet, upon reasonable notice and during normal business hours, with the chief financial officer and other officers and managers of such Party responsible for such Party's financial statements and the internal controls of such Party to discuss such matters as the other Party may deem necessary or appropriate; and (iv) make available to the other Party copies of unaudited financial statements, material operating and financial reports prepared for senior management or the board of directors of such Party, and any material notice, report or other document filed with or sent to or received from any Governmental Body in connection with the Contemplated Transactions. Any investigation conducted by either Parent or the Company pursuant to this Section 4.3 shall be conducted in such manner as not to interfere unreasonably with the conduct of the business of the other Party.

(b) Notwithstanding the foregoing, any Party may restrict the foregoing access to the extent that any Law applicable to such Party requires such Party to restrict or prohibit access to any such properties or information or, if in the reasonable judgment of such Party, access would jeopardize protections afforded the Party under the attorney-client privilege or the attorney work product doctrine; provided, however, that such Party shall use commercially reasonable efforts to allow for such access in a manner that does not violate any such applicable Law or jeopardize protections afforded the Party under the attorney-client privilege or the attorney work product doctrine.

4.4 Parent Non-Solicitation.

(a) Parent agrees that, during the Pre-Closing Period, it shall not, and shall cause its Representatives not to, directly or indirectly: (i) solicit, initiate or knowingly encourage, induce or facilitate the communication, making, submission or announcement of any Acquisition Proposal or Acquisition Inquiry or take any action that could reasonably be expected to lead to an Acquisition Proposal or Acquisition Inquiry; (ii) furnish any non-public information regarding Parent to any Person in connection with or in response to an Acquisition Proposal or Acquisition Inquiry; (iii) engage in discussions or negotiations with any Person with respect to any Acquisition Proposal or Acquisition Inquiry; (iv) approve, endorse or recommend any Acquisition Proposal (subject to Section 5.3); (v) execute or enter into any letter of intent or any Contract contemplating or otherwise relating to any Acquisition Transaction (other than a confidentiality agreement permitted under this Section 4.4(a)); or (vi) publicly propose to do any of the foregoing; provided, however, that, notwithstanding anything contained in this Section 4.4 and subject to compliance with this Section 4.4, prior to obtaining the Required Parent Stockholder Vote, Parent may furnish non-public information regarding Parent to, and enter into discussions or negotiations with, any Person in response to an unsolicited bona fide Acquisition Proposal by such Person, which the Parent Board determines in good faith, after consultation with Parent's outside financial advisors and outside legal counsel, constitutes, or is reasonably likely to result in, a Superior Offer (and is not withdrawn) if: (A) neither Parent nor any of its Representatives shall have breached this Section 4.4 in any material respect, (B) the Parent Board concludes in good faith based on the advice of outside legal counsel, that the failure to take such action is reasonably likely to be inconsistent with the fiduciary duties of the Parent Board under applicable Law; (C) at least two (2) Business Days prior to furnishing such nonpublic confidential information to, or entering into discussions with, such Person, Parent gives the Company written notice of the identity of such Person and of Parent's intention to furnish nonpublic information to, or enter into discussions with, such Person; (D) Parent receives from such Person an executed confidentiality agreement containing provisions, in the aggregate, at least as favorable to Parent as those contained in the Confidentiality Agreement; and (E) at least two (2) Business Days prior to furnishing any such nonpublic information to such Person, Parent furnishes such nonpublic information to the Company (to the extent such information has not been previously furnished by Parent to the Company). Without limiting the generality of the foregoing, Parent acknowledges and agrees that, in the event any Representative of Parent (whether or not such Representative is purporting to act on behalf of Parent) takes any action that, if taken by Parent, would constitute a breach of this Section 4.4, the taking of such action by such Representative shall be deemed to constitute a breach of this Section 4.4 by Parent for purposes of this Agreement.

(b) If Parent or any Representative of Parent receives an Acquisition Proposal or Acquisition Inquiry at any time during the Pre-Closing Period, then Parent shall promptly (and in no event later than twenty-four (24) hours after Parent becomes aware of such Acquisition Proposal or Acquisition Inquiry) advise the Company orally and in writing of such Acquisition Proposal or Acquisition Inquiry (including the identity of the Person making or submitting such Acquisition Proposal or Acquisition Inquiry, and the material terms thereof). Parent shall keep the Company reasonably informed with respect to the status and material terms of any such Acquisition Proposal or Acquisition Inquiry and promptly (and in no event later than twenty-four (24) hours) advise the Company orally and in writing of any material modification or proposed material modification thereto.

(c) Parent shall immediately cease and cause to be terminated any existing discussions, negotiations and communications with any Person that relate to any Acquisition Proposal or Acquisition Inquiry as of the date of this Agreement.

4.5 Company Non-Solicitation.

(a) The Company agrees that, during the Pre-Closing Period, it shall cause its Representatives not to, directly or indirectly: (i) solicit, initiate or knowingly encourage, induce or facilitate the communication, making, submission or announcement of any Acquisition Proposal or Acquisition Inquiry or take any action that could reasonably be expected to lead to an Acquisition Proposal or Acquisition Inquiry; (ii) furnish any non-public information regarding the Company to any Person in connection with or in response to an Acquisition Proposal or Acquisition Inquiry; (iii) engage in discussions or negotiations with any Person with respect to any Acquisition Proposal or Acquisition Inquiry; (iv) approve, endorse or recommend any Acquisition Proposal; (v) execute or enter into any letter of intent or any Contract contemplating or otherwise relating to any Acquisition Transaction; or (vi) publicly propose to do any of the foregoing; provided, however, that, notwithstanding anything contained in this Section 4.5 and subject to compliance with this Section 4.5, prior to obtaining the Required Company Stockholder Vote, the Company may furnish non-public information regarding the Company to, and enter into discussions or negotiations with, any Person in response to an unsolicited bona fide Acquisition Proposal by such Person, which the Company Board determines in good faith, after consultation with the Company's outside financial advisors and outside legal counsel, constitutes, or is reasonably likely to result in, a Superior Offer (and is not withdrawn) if: (A) neither the Company nor any of its Representatives shall have breached this Section 4.5 in any material respect, (B) the Company Board concludes in good faith based on the advice of outside legal counsel, that the failure to take such action is reasonably likely to be inconsistent with the fiduciary duties of the Company Board under applicable Law; (C) at least two (2) Business Days prior to furnishing such nonpublic confidential information to, or entering into discussions with, such Person, the Company gives Parent written notice of the identity of such Person and of the Company's intention to furnish nonpublic information to, or enter into discussions with, such Person; (D) the Company receives from such Person an executed confidentiality agreement containing provisions, in the aggregate, at least as favorable to the Company as those contained in the Confidentiality Agreement; and (E) at least two (2) Business Days prior to furnishing any such nonpublic information to such Person, the Company furnishes such nonpublic information to Parent (to the extent such information has not been previously furnished by the Company to Parent). Without limiting the generality of the foregoing, the Company acknowledges and agrees that, in the event any Representative of the Company (whether or not such Representative is purporting to act on behalf of the Company) takes any action that, if taken by the Company, would constitute a breach of this Section 4.5, the taking of such action by such Representative shall be deemed to constitute a breach of this Section 4.5 by the Company for purposes of this Agreement.

(b) If the Company or any Representative of the Company receives an Acquisition Proposal or Acquisition Inquiry at any time during the Pre-Closing Period, then the Company shall promptly (and in no event later than twenty-four (24) hours after the Company becomes aware of such Acquisition Proposal or Acquisition Inquiry) advise Parent orally and in writing of such Acquisition Proposal or Acquisition Inquiry (including the identity of the Person making or submitting such Acquisition Proposal or Acquisition Inquiry, and the material terms thereof). The Company shall keep Parent reasonably informed with respect to the status and material terms of any such Acquisition Proposal or Acquisition Inquiry and promptly (and in no event later than twenty-four (24) hours) advise the Company orally and in writing of any material modification or proposed material modification thereto.

(c) The Company shall immediately cease and cause to be terminated any existing discussions, negotiations and communications with any Person that relate to any Acquisition Proposal or Acquisition Inquiry as of the date of this Agreement.

4.6 Notification of Certain Matters.

(a) During the Pre-Closing Period, the Company shall promptly notify Parent (and, if in writing, furnish copies of) if any of the following occurs: (i) any notice or other communication is received from any Person alleging that the Consent of such Person is or may be required in connection with any of the Contemplated Transactions; (ii) any Legal Proceeding against or involving or otherwise affecting the Company is commenced, or, to the Knowledge of the Company, threatened against the Company or, to the Knowledge of the Company, any director or officer of the Company; (iii) the Company becomes aware of any inaccuracy in any representation or warranty made by it in this Agreement; or (iv) the failure of the Company to comply with any covenant or obligation of the Company; in the case of (iii) and (iv) that could reasonably be expected to make the timely satisfaction of any of the conditions set forth in Sections 6 or 7, as applicable, impossible or materially less likely. No notification given to Parent pursuant to this Section 4.6(a) shall change, limit or otherwise affect any of the representations, warranties, covenants or obligations of the Company contained in this Agreement or the Company Disclosure Schedule for purposes of Sections 6 and 7, as applicable. Notwithstanding the foregoing, as long as the failure to give such notice does not materially and adversely prejudice the ability of Parent to terminate this Agreement pursuant to Section 9.1(g), the failure to give any such notice shall not be treated as a breach of covenant for purposes of Section 7.2.

(b) During the Pre-Closing Period, Parent shall promptly notify the Company (and, if in writing, furnish copies of) if any of the following occurs: (i) any notice or other communication is received from any Person alleging that the Consent of such Person is or may be required in connection with any of the Contemplated Transactions; (ii) any Legal Proceeding against or involving or otherwise affecting Parent is commenced, or, to the Knowledge of Parent, threatened against Parent or, to the Knowledge of Parent, any director or officer of Parent; (iii) Parent becomes aware of any inaccuracy in any representation or warranty made by it in this Agreement; or (iv) the failure of Parent to comply with any covenant or obligation of Parent or Merger Sub; in the case of (iii) and (iv) that could reasonably be expected to make the timely satisfaction of any of the conditions set forth in Sections 6 or 8, as applicable, impossible or materially less likely. No notification given to the Company pursuant to this Section 4.6(b) shall change, limit or otherwise affect any of the representations, warranties, covenants or obligations of Parent contained in this Agreement or the Parent Disclosure Schedule for purposes of Sections 6 and 8, as applicable. Notwithstanding the foregoing, as long as the failure to give such notice does not materially and adversely prejudice the ability of the Company to terminate this Agreement pursuant to Section 9.1(f), the failure to give any such notice shall not be treated as a breach of covenant for purposes of Section 8.2.

4.7 Offers to Employees.

(a) Each current employee of Parent, the Company, or any Affiliate thereof who continues employment with Parent, the Company, or any Affiliate thereof after the Effective Time will be a "Continuing Employee." For the avoidance of doubt, each current employee of the Company shall be offered the opportunity to continue employment with Parent, the Company, or any Affiliate thereof after the Effective Time. During the period beginning as of the Effective Time and ending no earlier than the first (1st) anniversary of the Effective Time, Parent shall provide each Continuing Employee with, or cause each Continuing Employee to receive, (i) at least the same level of base wages or base salary (but excluding incentive compensation and equity-based compensation opportunities) that were provided to the Continuing

Employee immediately prior to the Effective Time and (ii) employee benefits that are substantially similar in the aggregate to the employee benefits that were provided to the Continuing Employee immediately prior to the Closing.

(b) Parent shall, and shall cause its Affiliates to, grant all Continuing Employees credit for any service to the Company and its Affiliates earned prior to the Closing for purposes of eligibility, vesting and determination of the level of benefits, vacation or paid time off accrual and severance benefit determinations, under any benefit or compensation plan, program, agreement or arrangement in which a Continuing Employee participates that may be established or maintained by Parent or its Affiliates on or after the Closing (the “**New Plans**”); provided, however, that such service credit shall not be recognized to the extent that it would result in a duplication of benefits for the same period of time. In addition, Parent shall, and shall cause its Affiliates to, cause (i) to be waived all pre-existing condition exclusions and actively-at-work requirements and similar limitations, eligibility waiting periods and evidence of insurability requirements under any New Plans to the extent waived or satisfied by a Continuing Employee under any Company Benefit Plan as of the Closing and (ii) any deductible, co-insurance and covered out-of-pocket expenses paid on or before the Closing by any Continuing Employee (or covered dependent thereof) to be taken into account for purposes of satisfying the corresponding deductible, coinsurance and maximum out-of-pocket provisions after the Closing under any applicable New Plan in the same plan year in which the Closing occurs.

(c) Nothing contained herein, express or implied, (i) is intended to confer upon any Continuing Employee any right to continued employment for any period or continued receipt of any specific employee benefit, or shall constitute an amendment to or any other modification of any benefit plan, (ii) shall alter or limit Parent’s or the Company’s or their Affiliates’ ability to amend, modify or terminate any particular benefit plan, program, agreement or arrangement or (iii) is intended to confer upon any individual (including employees, retirees or dependents or beneficiaries of employees or retirees) any right as a third party beneficiary of this Agreement.

Section 5. ADDITIONAL AGREEMENTS OF THE PARTIES

5.1 Proxy Statement

(a) As promptly as practicable after the date of this Agreement (but in no event later than forty-five (45) days following the date of this Agreement), the Parties shall prepare and cause to be filed with the SEC a preliminary Proxy Statement. Following (i) confirmation by the SEC that it has no further comments or (ii) expiration of the 10-day waiting period contemplated by Rule 14a-6(a) promulgated under the Exchange Act, Parent shall use commercially reasonable efforts to cause the Proxy Statement in definitive form to be mailed to the stockholders of Parent.

(b) Parent covenants and agrees that the information provided by Parent or its Subsidiaries to the Company for inclusion in the Proxy Statement, including any pro forma financial statements included therein (and the letter to stockholders, notice of meeting and form of proxy included therewith), will not, at the time that the Proxy Statement or any amendment or supplement thereto is filed with the SEC or is first mailed to the Parent stockholders contain any untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary in order to make the statements made therein, in light of the circumstances under which they were made, not misleading.

(c) The Company represents, covenants and agrees that the information provided by the Company to Parent for inclusion in the Proxy Statement (including the Company Financials) will not contain any untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary in order to make such information not misleading. Notwithstanding the foregoing, (i) Parent makes no covenant, representation or warranty with respect to statements made in the Proxy Statement (and the letter to stockholders, notice of meeting and form of proxy included therewith), if any, based on information provided by the Company or any of its Representatives specifically for inclusion therein and (ii) the Company makes no covenant, representation or warranty with respect to statements made in the Proxy Statement (and the letter to stockholders, notice of meeting and form of proxy included therewith), if any, other than with respect to the information provided by the Company or any of its Representatives for inclusion therein.

(d) Each of the Parties shall use commercially reasonable efforts to cause the Proxy Statement to comply with the applicable rules and regulations promulgated by the SEC and to respond promptly to any comments of the SEC or its staff. Each Party shall promptly furnish to the other Party all information concerning such Party and such Party’s Affiliates and such Party’s stockholders that may be required or reasonably requested in connection with any action contemplated by this Section 5.1. If Parent, Merger Sub or the Company become aware of any event or information that, pursuant to the Securities Act or the Exchange Act, should be disclosed in an amendment or supplement to the Proxy Statement, as the case may be, then such Party, as the case may be, shall promptly inform the other Parties thereof and shall cooperate with such other Parties in filing such amendment or supplement with the SEC and, if appropriate, in mailing such amendment or supplement to the Parent stockholders.

(e) In furtherance of the foregoing, the Company shall reasonably cooperate with Parent and provide, and require its Representatives, advisors, accountants and attorneys to provide, Parent and its Representatives, advisors, accountants and attorneys, with all true, correct and complete information regarding Company that is required by Law to be included in the Proxy Statement or reasonably requested from Company to be included in the Proxy Statement. Without limiting the foregoing, the Company will use commercially reasonable efforts to cause the Company’s independent accounting firm to deliver any auditor’s report and any other documentation required by Law to be included in the Proxy Statement.

5.2 Company Stockholder Matters. Promptly following receipt of the Required Company Stockholder Vote, the Company shall prepare and mail a notice (the “**Stockholder Notice**”) to every stockholder of the Company that did not execute the Company Stockholder Written Consent. The Stockholder Notice shall (i) be a statement to the effect that the Company Board determined that the Merger is advisable in accordance with Section 251(b) of the DGCL and in the best interests of the stockholders of the Company and approved and adopted this Agreement, the Merger and the other Contemplated Transactions, (ii) provide the stockholders of the Company to whom it is sent with notice of the actions taken in the Company Stockholder Written Consent, including the adoption and approval of this Agreement, the Merger and the other Contemplated Transactions in accordance with Section 228(e) of the DGCL and the certificate of incorporation and bylaws of the Company and (iii) include a description of the appraisal rights of the Company’s stockholders available under the DGCL, along with such other information as is required thereunder and pursuant to applicable Law. All materials (including any amendments thereto) submitted to the stockholders of the Company in accordance with this Section 5.2 shall be subject to Parent’s advance review and reasonable approval.

5.3 Parent Stockholders’ Meeting

(a) As promptly as practicable following the earlier to occur of (i) confirmation by the SEC that it has no further comments on the preliminary Proxy Statement or (ii) expiration of the 10-day waiting period contemplated by Rule 14a-6(a) promulgated under the Exchange Act, Parent shall take all action necessary under applicable Law to call, give notice of and hold a meeting of the holders of Parent Common Stock for the purpose of seeking approval of:

- (i) the amendment of Parent’s certificate of incorporation to effect the Nasdaq Reverse Split;
- (ii) the issuance of shares of Parent Common Stock to the Company’s stockholders in connection with the Contemplated Transactions;
- (iii) the change of control of Parent resulting from the Merger pursuant to the Nasdaq rules, if required; and

(iv) in accordance with Section 14A of the Exchange Act and the applicable SEC rules issued thereunder, seeking advisory approval of a proposal to the Parent’s stockholders for a non-binding, advisory vote to approve certain compensation that may become payable to Parent’s named executive officers in connection with the completion of the Merger, if applicable (the matters contemplated by the clauses 5.3(a)(i) – (iii) are referred to as the “**Parent Stockholder Matters**,” and the matters contemplated by clause 5.3(a)(iv) is referred to herein as the “**Other Parent Stockholder Matters**,” and such meeting, the “**Parent Stockholders’ Meeting**”).

(b) The Parent Stockholders’ Meeting shall be held as promptly as practicable, and in any event within 60 days, following the earlier to occur of (A) confirmation by the SEC that it has no further comments or (B) expiration of the 10-day waiting period contemplated by Rule 14a-6(a) promulgated under the Exchange Act with respect to the filing of the preliminary Proxy Statement. Notwithstanding anything to the contrary contained herein, if on the date of the Parent Stockholders’ Meeting or on a date preceding the date on which or the date on which the Parent Stockholders’ Meeting is scheduled, Parent reasonably believes that (A) it will not receive proxies sufficient to obtain the Parent Stockholder Approval, whether or not a quorum would be present or (B) it will not have sufficient shares of Parent Common Stock represented (either in Person or by proxy) to constitute a quorum necessary to conduct the business of the Parent Stockholders’ Meeting, Parent may, after reasonable consultation with the Company, postpone or adjourn, or make one or more successive postponements or adjournments of, the Parent Stockholders’ Meeting as long as the date of the Parent Stockholders’ Meeting is not postponed or adjourned more than an aggregate of 60 calendar days in connection with any postponements or adjournments in reliance on the preceding sentence.

(c) Parent agrees that, subject to Section 5.3(d): (i) the Parent Board shall recommend that the holders of Parent Common Stock vote to approve the Parent Stockholder Matters and shall use reasonable best efforts to solicit such approval; (ii) the Proxy Statement shall include a statement to the effect that the Parent Board recommends that Parent’s stockholders vote to approve the Parent Stockholder Matters (the recommendation of the Parent Board with respect to the Parent Stockholder Matters being referred to as the “**Parent Board Recommendation**”); (iii) the Parent Board Recommendation shall not be withheld, amended, withdrawn, qualified or modified (and the Parent Board shall not publicly propose to withhold, amend, withdraw, qualify or modify the Parent Board Recommendation) in a manner adverse to the Company; and (iv) the Parent Board shall not fail to recommend, in a solicitation/recommendation statement on Schedule 14D-9, against any Acquisition Proposal or Acquisition Transaction subject to Regulation 14D promulgated under the Exchange Act (other than any other tender offer or exchange offer by Parent or Merger Sub) within ten (10) Business Days after the commencement (within the meaning of Rule 14d-2 under the Exchange Act) of such Acquisition Proposal or Acquisition Transaction (the actions set forth in the foregoing clauses (iii) and (iv), collectively, a “**Parent Board Adverse Recommendation Change**”).

(d) Notwithstanding anything to the contrary contained in this Agreement, if at any time prior to the approval of Parent Stockholder Matters by the Required Parent Stockholder Vote:

(i) if Parent has received a written Acquisition Proposal (which Acquisition Proposal did not arise out of a breach of Section 4.4 (other than *de minimis* violations)) from any Person that has not been withdrawn and after consultation with outside legal counsel, the Parent Board shall have determined, in good faith, that such Acquisition Proposal is a Superior Offer, the Parent Board may make a Parent Board Adverse Recommendation Change, if and only if: (A) the Parent Board determines in good faith, after consultation with Parent’s outside legal counsel, that the failure to do so could be inconsistent with the fiduciary duties of the Parent Board to Parent’s stockholders under applicable Law; (B) Parent shall have given the Company prior written notice of its intention to consider making a Parent Board Adverse Recommendation Change at least four (4) Business Days prior to making any such Parent Board Adverse Recommendation Change (a “**Determination Notice**”) (which notice shall not constitute a Parent Board Adverse Recommendation Change); and (C) (1) Parent shall have provided to the Company a summary of the material terms and conditions of the Acquisition Proposal in accordance with Section 4.4(b), (2) Parent shall have given the Company four Business Days after the Determination Notice to propose revisions to the terms of this Agreement or make another proposal and shall have made its Representatives reasonably available to negotiate in good faith with the Company (to the extent the Company desires to negotiate) with respect to such proposed revisions or other proposal, if any, and (3) after considering the results of any such negotiations and giving effect to the proposals made by the Company, if any, after consultation with outside legal counsel, the Parent Board shall have determined, in good faith, that such Acquisition Proposal is a Superior Offer and that the failure to make the Parent Board Adverse Recommendation Change could be inconsistent with the fiduciary duties of the Parent Board to Parent’s stockholders under applicable Law. For the avoidance of doubt, the provisions of this Section 5.3(d)(i) shall also apply to any material change to the facts and circumstances relating to such Acquisition Proposal and require a new Determination Notice, except that the references to four Business Days shall be deemed to be three Business Days.

(ii) Other than in connection with an Acquisition Proposal, the Parent Board may make a Parent Board Adverse Recommendation Change in response to a Parent Change in Circumstance, if and only if: (A) the Parent Board determines in good faith, after consultation with Parent’s outside legal counsel, that the failure to do so could be inconsistent with the fiduciary duties of the Parent Board to Parent’s stockholders under applicable Law; (B) Parent shall have given the Company a Determination Notice at least four Business Days prior to making any such Parent Board Adverse Recommendation Change; and (C) (1) Parent shall have specified the Parent Change in Circumstance in reasonable detail, (2) Parent shall have given the Company four Business Days after the Determination Notice to propose revisions to the terms of this Agreement or make another proposal, and shall have made its Representatives reasonably available to negotiate in good faith with the Company (to the extent the Company desires to do so) with respect to such proposed revisions or other proposal, if any, and (3) after considering the results of any such negotiations and giving effect to the proposals made by the

Company, if any, after consultation with outside legal counsel, the Parent Board shall have determined, in good faith, that the failure to make the Parent Board Adverse Recommendation Change in response to such Parent Change in Circumstance could be inconsistent with the fiduciary duties of the Parent Board to Parent's stockholders under applicable Law. For the avoidance of doubt, the provisions of this [Section 5.3\(d\)\(ii\)](#) shall also apply to any material change to the facts and circumstances relating to such Parent Change in Circumstance and require a new Determination Notice, except that the references to four Business Days shall be deemed to be three Business Days.

(e) Nothing contained in this Agreement shall prohibit Parent or the Parent Board from (i) complying with Rules 14d-9 and 14e-2(a) promulgated under the Exchange Act, (ii) issuing a "stop, look and listen" communication or similar communication of the type contemplated by Section 14d-9(f) under the Exchange Act or (iii) otherwise making any disclosure to the Parent stockholders; *provided, however*, that in the case of the foregoing clause (iii) the Parent Board determines in good faith, after consultation with its outside legal counsel, that failure to make such disclosure is reasonably likely to be inconsistent with applicable Law, including its fiduciary duties under applicable Law.

5.4 Company Options.

(a) At the Effective Time, each Company Option that is outstanding and unexercised immediately prior to the Effective Time under the Company Plan, whether or not vested, shall be converted into and become an option to purchase Parent Common Stock, and Parent shall assume each such Company Option in accordance with the terms (as in effect as of the date of this Agreement) of the Company Plan and the terms of the stock option agreement by which such Company Option is evidenced (but with changes to such documents as Parent and the Company mutually agree are appropriate to reflect the substitution of the Company Options by Parent to purchase shares of Parent Common Stock). All rights with respect to Company Common Stock under Company Options assumed by Parent shall thereupon be converted into rights with respect to Parent Common Stock. Accordingly, from and after the Effective Time: (i) each Company Option assumed by Parent may be exercised solely for shares of Parent Common Stock; (ii) the number of shares of Parent Common Stock subject to each Company Option assumed by Parent shall be determined by multiplying (A) the number of shares of Company Common Stock that were subject to such Company Option, as in effect immediately prior to the Effective Time, by (B) the Per Share Common Stock Exchange Ratio (as defined in the Company Charter Amendment), and rounding the resulting number down to the nearest whole number of shares of Parent Common Stock; (iii) the per share exercise price for the Parent Common Stock issuable upon exercise of each Company Option assumed by Parent shall be determined by dividing (A) the per share exercise price of Company Common Stock subject to such Company Option, as in effect immediately prior to the Effective Time, by (B) the Per Share Common Stock Exchange Ratio (as defined in the Company Charter Amendment) and rounding the resulting exercise price up to the nearest whole cent; and (iv) any restriction on the exercise of any Company Option assumed by Parent shall continue in full force and effect and the term, exercisability, vesting schedule and other provisions of such Company Option shall otherwise remain unchanged; *provided, however*, that: (A) to the extent provided under the terms of a Company Option and the Company Plans, such Company Option may be further adjusted as necessary to reflect Parent's substitution of the Company Options with options to purchase Parent Common Stock (such as by making any change in control or similar definition relate to Parent and having any provision that provides for the adjustment of Company Options upon the occurrence of certain corporate events relate to corporate events that relate to Parent and/or Parent Common Stock); and (B) the Parent Board or an authorized committee thereof shall succeed to the authority and responsibility of the Company Board or any committee thereof with respect to each Company Option assumed by Parent. Notwithstanding anything to the contrary in this [Section 5.4\(a\)](#), the conversion of each Company Option (regardless of whether such option qualifies as an "incentive stock option" within the meaning of Section 422 of the Code) into an option to purchase shares of Parent Common Stock shall be made in a manner consistent with Treasury Regulation Section 1.424-1, such that the conversion of a Company Option shall not constitute a "modification" of such Company Option for purposes of Section 409A or Section 424 of the Code.

(b) Parent shall file with the SEC, promptly after the Effective Time and in any case no later than 20 days after the Closing, a registration statement on Form S-8 (or any successor or alternative form), relating to the shares of Parent Common Stock issuable with respect to Company Options assumed by Parent in accordance with [Section 5.4\(a\)](#) unless such shares of Parent Common Stock have otherwise already been registered.

(c) Prior to the Effective Time, the Company shall take all actions that may be necessary (under the Company Plan and otherwise) to effectuate the provisions of this [Section 5.4](#) and to ensure that, from and after the Effective Time, holders of Company Options have no rights with respect thereto other than those specifically provided in this [Section 5.4](#).

5.5 Indemnification of Officers and Directors.

(a) From the Effective Time through the sixth anniversary of the date on which the Effective Time occurs, each of Parent and the Surviving Corporation shall indemnify and hold harmless each Person who is now, or has been at any time prior to the date hereof, or who becomes prior to the Effective Time, a director or officer of Parent or the Company and their respective Subsidiaries, respectively (the "**D&O Indemnified Parties**"), against all claims, losses, liabilities, damages, judgments, fines and reasonable fees, costs and expenses, including attorneys' fees and disbursements and investigation costs (collectively, "**Costs**"), incurred in connection with any claim, action, suit, proceeding or investigation, whether civil, criminal, administrative or investigative, arising out of or pertaining to the fact that the D&O Indemnified Party is or was a director or officer of Parent or of the Company, whether asserted or claimed prior to, or after the Effective Time, in each case, to the fullest extent permitted under applicable Law. Each D&O Indemnified Party will be entitled to advancement of expenses incurred in the defense of any such claim, action, suit, proceeding or investigation from each of Parent and the Surviving Corporation, jointly and severally, upon receipt by Parent or the Surviving Corporation from the D&O Indemnified Party of a request therefor; *provided* that any such Person to whom expenses are advanced provides a written undertaking to Parent, to the extent then required by the DGCL, to repay such advances if it is ultimately determined that such Person is not entitled to indemnification.

(b) The provisions of the certificate of incorporation and bylaws of Parent with respect to indemnification, advancement of expenses and exculpation of present and former directors and officers of Parent that are presently set forth in the certificate of incorporation and bylaws of Parent shall not be amended, modified or repealed for a period of six years from the Effective Time in a manner that would adversely affect the rights thereunder of individuals who, at or prior to the Effective Time, were officers or directors of Parent. The certificate of incorporation and bylaws of the Surviving Corporation shall contain, and Parent shall cause the certificate of incorporation and bylaws of the Surviving Corporation to so contain, provisions no less favorable with respect to indemnification, advancement of expenses and exculpation of present and former directors and officers as those presently set forth in the certificate of incorporation and bylaws of Parent.

(c) From and after the Effective Time, (i) the Surviving Corporation shall fulfill and honor in all respects the obligations of the Company to its D&O Indemnified Parties as of immediately prior to the Closing pursuant to any indemnification provisions under the Company's Organizational Documents and pursuant to any indemnification agreements between the Company and such D&O Indemnified Parties, with respect to claims arising out of matters occurring at or prior to the Effective Time and (ii) Parent shall fulfill and honor in all respects the obligations of Parent to its D&O Indemnified Parties as of immediately prior to the Closing pursuant to any indemnification provisions under Parent's Organizational Documents and pursuant to any indemnification agreements between Parent and such D&O Indemnified Parties, with respect to claims arising out of matters occurring at or prior to the Effective Time.

(d) From and after the Effective Time, Parent shall maintain directors' and officers' liability insurance policies, with an effective date as of the Closing Date, on commercially available terms and conditions and with coverage limits customary for U.S. public companies similarly situated to Parent. In addition, Parent shall purchase, prior to the Effective Time, a six-year prepaid "tail policy" for the non-cancellable extension of the directors' and officers' liability coverage of Parent's existing directors' and officers' insurance policies for a claims reporting or discovery period of at least six years from and after the Effective Time with respect to any claim related to any period of time at or prior to the Effective Time (the "**D&O Tail Policy**").

(e) From and after the Effective Time, Parent shall pay all expenses, including reasonable attorneys' fees, that are incurred by the persons referred to in this [Section 5.5](#) in connection with their successful enforcement of the rights provided to such persons in this [Section 5.5](#).

(f) The provisions of this [Section 5.5](#) are intended to be in addition to the rights otherwise available to the current and former officers and directors of Parent and the Company by Law, charter, statute, bylaw or agreement, and shall operate for the benefit of, and shall be enforceable by, each of the D&O Indemnified Parties, their heirs and their Representatives. The obligations set forth in this [Section 5.5](#) shall not be terminated, amended or otherwise modified in any manner that adversely affects any D&O Indemnified Party (and their heirs and Representatives) without the prior written consent of such affected D&O Indemnified Party (or their heirs and Representatives).

(g) In the event Parent or the Surviving Corporation or any of their respective successors or assigns (i) consolidates with or merges into any other Person and shall not be the continuing or surviving corporation or entity of such consolidation or merger or (ii) transfers all or substantially all of its properties and assets to any Person, then, and in each such case, proper provision shall be made so that the successors and assigns of Parent or the Surviving Corporation, as the case may be, shall succeed to the obligations set forth in this [Section 5.5](#). Parent shall cause the Surviving Corporation to perform all of the obligations of the Surviving Corporation under this [Section 5.5](#).

5.6 **Additional Agreements.** The Parties shall use commercially reasonable efforts to cause to be taken all actions necessary to consummate the Contemplated Transactions. Without limiting the generality of the foregoing, each Party to this Agreement: (a) shall make all filings and other submissions (if any) and give all notices (if any) required to be made and given by such Party in connection with the Contemplated Transactions; (b) shall use reasonable best efforts to obtain each Consent (if any) reasonably required to be obtained (pursuant to any applicable Law or Contract, or otherwise) by such Party in connection with the Contemplated Transactions or for such Contract (with respect to Contracts set forth in [Schedule 5.6](#)) to remain in full force and effect; (c) shall use commercially reasonable efforts to lift any injunction prohibiting, or any other legal bar to, the Contemplated Transactions; and (d) shall use commercially reasonable efforts to satisfy the conditions precedent to the consummation of this Agreement.

5.7 **Disclosure.** The initial press release relating to this Agreement shall be a joint press release issued by the Company and Parent and thereafter Parent and the Company shall consult with each other before issuing any further press release(s) or otherwise making any public statement or making any announcement to Parent Associates or Company Associates (to the extent not previously issued or made in accordance with this Agreement) with respect to the Contemplated Transactions and shall not issue any such press release, public statement or announcement to Parent Associates or Company Associates without the other Party's written consent (which shall not be unreasonably withheld, conditioned or delayed). Notwithstanding the foregoing: (a) each Party may, without such consultation or consent, make any public statement in response to questions from the press, analysts, investors or those attending industry conferences, make internal announcements to employees and make disclosures in Parent SEC Documents, so long as such statements are consistent with previous press releases, public disclosures or public statements made jointly by the parties (or individually, if approved by the other Party); (b) a Party may, without the prior consent of the other Party hereto but subject to giving advance notice to the other Party, issue any such press release or make any such public announcement or statement as may be required by any Law; and (c) Parent need not consult with the Company in connection with such portion of any press release, public statement or filing to be issued or made pursuant to [Section 5.3\(e\)](#), or with respect to any Acquisition Proposal or Parent Board Adverse Recommendation Change.

5.8 **Listing.** Parent shall use its commercially reasonable efforts: (a) to maintain its existing listing on Nasdaq until the Effective Time and to obtain approval of the listing of the combined corporation on Nasdaq; (b) to the extent required by the rules and regulations of Nasdaq, to prepare and submit to Nasdaq a notification form for the listing of the shares of Parent Common Stock to be issued in connection with the Contemplated Transactions, and to cause such shares to be approved for listing (subject to official notice of issuance); (c) to effect the Nasdaq Reverse Split; and (d) to the extent required by Nasdaq Marketplace Rule 5110, to file an initial listing application for the Parent Common Stock on Nasdaq (the "**Nasdaq Listing Application**") and to cause such Nasdaq Listing Application to be conditionally approved prior to the Effective Time. The Parties will use commercially reasonable efforts to coordinate with respect to compliance with Nasdaq rules and regulations. Each Party will promptly inform the other Party of all verbal or written communications between Nasdaq and such Party or its Representatives. Parent and the Company agree to evenly split all Nasdaq fees associated with the Nasdaq Listing Application and the Nasdaq Reverse Split, if any (the "**Nasdaq Fees**"). The Company will cooperate with Parent as reasonably requested by Parent with respect to the Nasdaq Listing Application and promptly furnish to Parent all information concerning the Company and its stockholders that may be required or reasonably requested in connection with any action contemplated by this [Section 5.8](#).

5.9 Tax Matters.

(a) For United States federal income Tax purposes, (i) the Parties intend that the Merger qualify as a "reorganization" within the meaning of Section 368(a) of the Code (the "**Intended Tax Treatment**") and (ii) this Agreement is intended to be, and is hereby adopted as, a "plan of reorganization" for purposes of Section 354 and 361 of the Code and Treasury Regulations Section 1.368-2(g) and 1.368-3(a), to which the Parent, Merger Sub and the Company are parties under Section 368(b) of the Code. The Parties shall treat and shall not take any tax reporting position inconsistent with the treatment of the Merger as a

reorganization within the meaning of Section 368(a) of the Code for U.S. federal, state and other relevant Tax purposes, unless otherwise required pursuant to a “determination” within the meaning of Section 1313(a) of the Code.

(b) The Parties shall use their respective reasonable best efforts to cause the Merger to qualify, and will not take any action or cause any action to be taken which action would reasonably be expected to prevent the Merger from qualifying, for the Intended Tax Treatment.

(c) Parent shall use its reasonable best efforts to deliver a tax representation letter substantially in the form set forth in Section 5.9(c)(i) of the Parent Disclosure Schedule containing representations of Parent and Merger Sub (the “**Parent Tax Representation Letter**”), dated as of the Closing Date and signed by an officer of Parent to DLA Piper LLP (“**DLA**”). Parent and Merger Sub shall use their reasonable best efforts not to, and not permit any Affiliate to, take or cause to be taken any action that would cause to be untrue (or fail to take or cause not to be taken any action which inaction would cause to be untrue) any of the representations and covenants made to DLA in the Parent Tax Representation Letter.

5.10 **Parent Common Stock; Legends.**

(a) The shares of Parent Common Stock issued pursuant to the terms of this Agreement will be issued in a transaction exempt from registration under the Securities Act by reason of Section 4(a)(2) thereof and/or Regulation D promulgated under the Securities Act and may not be re-offered or resold other than in conformity with the registration requirements of the Securities Act and such other applicable rules and regulations or pursuant to an exemption therefrom. Until the resale by the holders of Company Capital Stock of their shares of Parent Common Stock has become registered under the Securities Act, or otherwise transferable pursuant to an exemption from such registration otherwise required thereunder, the shares of Parent Common Stock issued pursuant to this Agreement shall be characterized as “restricted securities” under the Securities Act and, if certificated, shall bear the following legend (or if held in book entry form, will be noted with a similar restriction):

“THE SHARES REPRESENTED BY THIS CERTIFICATE HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933 (THE “ACT”) AND MAY NOT BE OFFERED, SOLD OR OTHERWISE TRANSFERRED, ASSIGNED, PLEDGED OR HYPOTHECATED UNLESS REGISTERED UNDER THE ACT OR UNLESS AN EXEMPTION FROM THE REGISTRATION REQUIREMENTS OF THE ACT IS AVAILABLE.”

Parent agrees to cooperate in a timely manner with the holders of Registrable Securities to remove any restrictive legends or similar transfer instructions from the Registrable Securities upon the registration of the Registrable Securities or in the event that the Registrable Securities are otherwise transferable pursuant to an exemption from registration otherwise required thereunder.

(b) Parent shall be entitled to place appropriate legends on the book entries and/or certificates evidencing any shares of Parent Common Stock to be received in the Merger by equity holders of the Company who may be considered “affiliates” of Parent for purposes of Rules 144 and 145 under the Securities Act reflecting the restrictions set forth in Rules 144 and 145 and to issue appropriate stop transfer instructions to the transfer agent for Parent Common Stock.

5.11 **Directors and Officers.**

(a) The Parties shall use reasonable best efforts and take all necessary action so that immediately after the Effective Time, (A) the Parent Board is comprised of seven members, with (i) three such members designated by Parent, (ii) three such members designated by the Company and (iii) one remaining member to be mutually agreed upon by the Parties and (B) the Persons listed in **Exhibit D** under the heading “Officers” are elected or appointed, as applicable, to the positions of officers of Parent, as set forth therein, to serve in such positions effective as of the Effective Time until successors are duly appointed and qualified in accordance with applicable Law. If any Person listed in **Exhibit D** is unable or unwilling to serve as an officer of Parent or the Surviving Corporation, as set forth therein, as of the Effective Time, the Parties shall mutually agree upon a successor.

(b) After the Closing, the nominating committee of the Parent Board shall nominate the directors of Parent in the ordinary course.

5.12 **Termination of Certain Agreements and Rights.** The Company shall cause any Investor Agreements (excluding the Company Lock-up Agreements) to be terminated immediately prior to the Effective Time, without any liability being imposed on the part of Parent or the Surviving Corporation.

5.13 **Section 16 Matters.** Prior to the Effective Time, Parent and the Company shall take all such steps as may be required (to the extent permitted under applicable Laws) to cause any acquisitions of Parent Common Stock, restricted stock awards to acquire Parent Common Stock and any options to purchase Parent Common Stock in connection with the Contemplated Transactions, by each individual who is reasonably expected to become subject to the reporting requirements of Section 16(a) of the Exchange Act with respect to Parent, to be exempt under Rule 16b-3 promulgated under the Exchange Act. Promptly following the date of this Agreement and at least 30 days prior to the Closing Date, the Company shall furnish the following information to Parent for each individual who, immediately after the Effective Time, will become subject to the reporting requirements of Section 16(a) of the Exchange Act with respect to Parent: (a) the number of shares of Company Capital Stock owned by such individual and expected to be exchanged for shares of Parent Common Stock pursuant to the Merger, and (b) the number of other derivative securities (if any) with respect to Company Capital Stock owned by such individual and expected to be converted into shares of Parent Common Stock, restricted stock awards to acquire Parent Common Stock or derivative securities with respect to Parent Common Stock in connection with the Merger.

5.14 **Cooperation.** Each Party shall cooperate reasonably with the other Party and shall provide the other Party with such assistance as may be reasonably requested for the purpose of facilitating the performance by each Party of its respective obligations under this Agreement and to enable the combined entity to continue to meet its obligations following the Effective Time.

5.15 **Allocation Certificates.**

(a) The Company will prepare and deliver to Parent at least five Business Days prior to the Closing Date a certificate signed by the Chief Financial Officer of the Company in a form reasonably acceptable to Parent setting forth (as of immediately prior to the Effective Time): (i) each holder of Company Capital Stock and Company Options; (ii) such holder’s name and address; (iii) the number and type of Company Capital Stock held and/or underlying the Company Options as of the immediately prior to the Effective Time for each such holder; and (iv) the number of shares of Parent Common Stock to be issued to such holder, or to underlie any Company Option to be issued to such holder, pursuant to this Agreement in respect of the Company Capital Stock or Company Options held by such holder as of immediately prior to the Effective Time (the “**Allocation Certificate**”).

(b) Parent will prepare and deliver to the Company at least five Business Days prior to the Closing Date a certificate signed by the Chief Financial Officer of Parent in a form reasonably acceptable to the Company, setting forth as of a reasonably practicable date: (i) each record holder of Parent Common Stock or Parent Options; (ii) such record holder’s name and address; and (iii) the number of shares of Parent Common Stock held and/or underlying the Parent Options as of the Effective Time for such holder (the “**Parent Outstanding Shares Certificate**”).

5.16 **Company Financial Statements.** As promptly as reasonably practicable following the date of this Agreement and no later than fifteen (15) days following the date of this Agreement the Company will furnish to Parent (i) audited financial statements for the fiscal years ended 2017 and 2018 for inclusion in the Proxy Statement (the “**Company Audited Financial Statements**”) and (ii) unaudited interim financial statements for each interim period completed prior to Closing that would be required to be included in the Proxy Statement or any periodic report due prior to the Closing if the Company were subject to the periodic reporting requirements under the Securities Act or the Exchange Act (the “**Company Interim Financial Statements**”). Each of the Company Audited Financial Statements and the Company Interim Financial Statements will be suitable for inclusion in the Proxy Statement and prepared in accordance with GAAP as applied on a consistent basis during the periods involved (except in each case as described in the notes thereto) and on that basis will present fairly, in all material respects, the financial position and the results of operations, changes in stockholders’ equity, and cash flows of the Company as of the dates of and for the periods referred to in the Company Audited Financial Statements or the Company Interim Financial Statements, as the case may be.

5.17 **Takeover Statutes.** If any Takeover Statute is or may become applicable to the Contemplated Transactions, each of the Company, the Company Board, Parent and the Parent Board, as applicable, shall grant such approvals and take such actions as are necessary so that the Contemplated Transactions may be consummated as promptly as practicable on the terms contemplated by this Agreement and otherwise act to eliminate or minimize the effects of such statute or regulation on the Contemplated Transactions.

5.18 **Stockholder Litigation.** Parent shall conduct and control the settlement and defense of any stockholder litigation against Parent or any of its directors relating to this Agreement or the Contemplated Transactions. Prior to the Closing, Parent shall reasonably consult with and permit the Company and its Representatives to participate in the defense, negotiations and settlement of any such stockholder litigation, and Parent shall give consideration to the Company’s advice with respect to stockholder litigation. Parent shall promptly advise the Company orally and in writing of the initiation of, and shall keep the Company reasonably apprised of any material developments in connection with any such stockholder litigation. The Parties hereto shall reasonably cooperate in resisting any such effort to restrain, enjoin, prohibit or otherwise oppose the Contemplated Transactions.

5.19 **Company Charter Amendment.** The Company shall take all necessary action to file the Amendment to the Company’s Amended and Restated Certificate of Incorporation in the form attached hereto as **Exhibit E** (the “**Company Charter Amendment**”) with the Secretary of State of the State of Delaware prior to the Effective Time.

5.20 **Private Placement.** Parent intends to issue the shares of Parent Common Stock as provided in this Agreement pursuant to a “private placement” exemption or exemptions from registration under Section 4(a)(2) of the Securities Act and an exemption from qualification under applicable state securities laws. The Company agrees to fully cooperate with Parent in its efforts to ensure that such shares of Parent Common Stock may be issued pursuant to such exemptions and agrees that, in the event any Company Stockholder who is to receive shares of Parent Common Stock hereunder is not an “accredited investor” (within the meaning of Regulation D of the Securities Act), the Company shall arrange for such Company Stockholder to be represented by a “purchaser representative” (within the meaning of Regulation D of the Securities Act).

5.21 **Resale Registration Statement.**

(a) Parent shall prepare and file within ninety (90) days of the Closing Date a registration statement on Form S-3 under the Securities Act, which registration statement shall cover the sale, resale or other distribution of all such shares of Parent Common Stock issued to Company Stockholders pursuant to this Agreement (the “**Registrable Securities**”) on a delayed or continuous basis pursuant to Rule 415 under the Securities Act, except that if Parent fails to meet one or more of the registrant requirements specified in General Instruction I.A. on Form S-3, registration shall be on another appropriate form that allows for such Registrable Securities to be registered (the “**Resale Registration Statement**”), and use commercially reasonable efforts to cause such Resale Registration Statement to become effective by the SEC as promptly as reasonably practicable after the filing thereof (and in any event within 60 days after the filing thereof). Once declared effective, Parent shall, subject to the other applicable provisions of this Agreement, use commercially reasonable efforts to cause the Resale Registration Statement to be continuously effective and usable until the date that is the three-year anniversary of the effective date of such registration, or such earlier time as all shares of Registrable Securities covered by such Registration Statement (i) have been sold pursuant to such Registration Statement or otherwise, (ii) may be transferred under Rule 144 or another similar exemption under the Securities Act without manner of sale or volume restrictions, or (iii) cease to be outstanding (the “**Effectiveness Period**”).

(b) Parent shall supplement and amend any Resale Registration Statement if required by the Securities Act. If any Resale Registration Statement ceases to be effective under the Securities Act during the Effectiveness Period, Parent shall use commercially reasonable efforts to as promptly as is reasonably practicable cause such Resale Registration Statement to again become effective under the Securities Act (including obtaining the prompt withdrawal of any order suspending the effectiveness of such Resale Registration Statement), and shall use commercially reasonable efforts to as promptly as is reasonably practicable amend such Resale Registration Statement in a manner reasonably expected to result in the withdrawal of any order suspending the effectiveness of such Resale Registration Statement or file an additional registration statement (a “**Subsequent Shelf Registration**”) for an offering to be made on a delayed or continuous basis pursuant to Rule 415 of the Securities Act registering the resale from time to time by the holders thereof of

all Registrable Securities pursuant to this Agreement as of the time of such filing. If a Subsequent Shelf Registration is filed, Parent shall use commercially reasonable efforts to (i) cause such Subsequent Shelf Registration to become effective under the Securities Act as promptly as is reasonably practicable after the filing thereof and (ii) keep such Subsequent Shelf Registration continuously effective and usable until the end of the Effectiveness Period.

(c) The Company Stockholders receiving Registrable Securities are intended third party beneficiaries of this [Section 5.21](#).

5.22 **Principal Office and Facilities.** After the Closing, (a) the principal office of the Company shall become the principal office of Parent and (b) Parent will maintain substantial operations at its facilities in the Iowa State University Research Park in Ames, Iowa.

Section 6. CONDITIONS PRECEDENT TO OBLIGATIONS OF EACH PARTY

The obligations of each Party to effect the Merger and otherwise consummate the Contemplated Transactions to be consummated at the Closing are subject to the satisfaction or, to the extent permitted by applicable Law, the written waiver by each of the Parties, at or prior to the Closing, of each of the following conditions:

6.1 **No Restraints.** No temporary restraining order, preliminary or permanent injunction or other order preventing the consummation of the Contemplated Transactions shall have been issued by any court of competent jurisdiction or other Governmental Body of competent jurisdiction and remain in effect and there shall not be any Law which has the effect of making the consummation of the Contemplated Transactions illegal.

6.2 **Stockholder Approval.** (a) Parent shall have obtained the Required Parent Stockholder Vote and (b) the Company shall have obtained the Required Company Stockholder Vote.

6.3 **Listing.** The existing shares of Parent Common Stock shall have been continually listed on Nasdaq as of and from the date of this Agreement through the Closing Date, the approval of the listing of additional shares of Parent Common Stock on Nasdaq shall have been obtained and the shares of Parent Common Stock to be issued in the Merger pursuant to this Agreement shall have been approved for listing (subject to official notice of issuance) on Nasdaq as of the Closing. Parent shall not have received any comment letter from the SEC or the staff thereof or any correspondence from officials of Nasdaq or the staff thereof relating to the delisting or maintenance of listing of the Parent Common Stock on Nasdaq.

Section 7. ADDITIONAL CONDITIONS PRECEDENT TO OBLIGATIONS OF PARENT AND MERGER SUB

The obligations of Parent and Merger Sub to effect the Merger and otherwise consummate the transactions to be consummated at the Closing are subject to the satisfaction or the written waiver by Parent, at or prior to the Closing, of each of the following conditions:

7.1 **Accuracy of Representations.** The Company Fundamental Representations shall have been true and correct in all material respects as of the date of this Agreement and shall be true and correct in all material respects on and as of the Closing Date with the same force and effect as if made on and as of such date (except to the extent such representations and warranties are specifically made as of a particular date, in which case such representations and warranties shall be true and correct in all material respects as of such date). The representations and warranties of the Company contained in this Agreement (other than the Company Fundamental Representations) shall have been true and correct as of the date of this Agreement and shall be true and correct on and as of the Closing Date with the same force and effect as if made on the Closing Date, except (a) in each case, or in the aggregate, where the failure to be true and correct would not reasonably be expected to have a Company Material Adverse Effect (without giving effect to any references therein to any Company Material Adverse Effect or other materiality qualifications), or (b) for those representations and warranties which address matters only as of a particular date (which representations shall have been true and correct, subject to the qualifications as set forth in the preceding clause (a), as of such particular date) (it being understood that, for purposes of determining the accuracy of such representations and warranties, any update of or modification to the Company Disclosure Schedule made or purported to have been made after the date of this Agreement shall be disregarded).

7.2 **Performance of Covenants.** The Company shall have performed or complied with in all material respects all agreements and covenants required to be performed or complied with by it under this Agreement at or prior to the Effective Time.

7.3 **Documents.** Parent shall have received the following documents, each of which shall be in full force and effect:

(a) a certificate executed by the Chief Executive Officer or Chief Financial Officer of the Company certifying (i) that the conditions set forth in [Sections 7.1, 7.2, 7.5, 7.6 and 7.9](#) have been duly satisfied and (ii) that the information set forth in the Allocation Certificate delivered by the Company in accordance with [Section 5.15](#) is true and accurate in all respects as of the Closing Date;

(b) the Allocation Certificate; and

(c) a written resignation, in a form reasonably satisfactory to Parent, dated as of the Closing Date and effective as of the Closing, executed by each of the officers and directors of the Company who are otherwise not mutually agreed upon by Parent and the Company to continue as officers or directors of the Company after the Closing.

7.4 **FIRPTA Certificate.** Parent shall have received (i) an original signed statement from the Company that the Company is not, and has not been at any time during the applicable period specified in Section 897(c)(1)(A)(ii) of the Code, a "United States real property holding corporation," as defined in Section 897(c)(2) of the Code, conforming to the requirements of Treasury Regulations Section 1.1445-2(c)(3) and 1.897-2(h) and (ii) an original signed notice to be delivered to the IRS in accordance with the provisions of Treasury Regulations Section 1.897-2(h)(2), together with written authorization for Parent to deliver such notice to the IRS on behalf of the Company following the Closing, each dated as of the Closing Date, duly executed by an authorized officer of the Company, and in form and substance reasonably acceptable to Parent.

7.5 **No Company Material Adverse Effect.** Since the date of this Agreement, there shall not have occurred any Company Material Adverse Effect that is continuing.

7.6 **Termination of Investor Agreements.** The Investor Agreements shall have been terminated.

7.7 **Termination of Specified Agreements.** The agreements listed on Section B of the Company Disclosure Schedule shall have been amended or terminated as specified therein.

7.8 **Company Lock-Up and Support Agreements.** Parent shall have received the Company Lock-Up Agreements and Company Support Agreements duly executed by each of the Company Signatories and each executive officer and director of the Company who is elected or appointed, as applicable, as an executive officer and director of Parent as of immediately following the Closing, each of which shall be in full force and effect.

7.9 **Company Stockholder Written Consent.** The Company Stockholder Written Consent evidencing the Required Company Stockholder Vote shall be in full force and effect.

7.10 **Company Charter Amendment.** The Company shall have filed the Charter Amendment with the Secretary of State of the State of Delaware prior to the Closing, which Charter Amendment shall continue to be in full force and effect as of the Closing.

7.11 **Appraisal Rights.** Either (a) the period during which any holders of any class or series of Company Capital Stock can exercise their statutory appraisal rights under Section 262 of the DGCL with respect to the Merger shall have expired, and the holders of Company Capital Stock representing not more than zero-point-five percent (0.5%) of the votes entitled to be cast by holders of Company Capital Stock entitled to exercise such statutory appraisal rights shall have exercised (and not subsequently withdrawn or waived) such statutory appraisal rights; or (b) the holders of Company Capital Stock representing at least ninety-nine-point-five percent (99.5%) of the votes entitled to be cast by holders of Company Capital Stock entitled to exercise such statutory appraisal rights shall have effectively waived their statutory appraisal rights under Section 262 of the DGCL in connection with the Merger by execution and delivery of a written consent or waiver.

Section 8. ADDITIONAL CONDITIONS PRECEDENT TO OBLIGATION OF THE COMPANY

The obligations of the Company to effect the Merger and otherwise consummate the transactions to be consummated at the Closing are subject to the satisfaction or the written waiver by the Company, at or prior to the Closing, of each of the following conditions:

8.1 **Accuracy of Representations.** The Parent Fundamental Representations shall have been true and correct in all material respects as of the date of this Agreement and shall be true and correct in all material respects on and as of the Closing Date with the same force and effect as if made on and as of such date (except to the extent such representations and warranties are specifically made as of a particular date, in which case such representations and warranties shall be true and correct in all material respects as of such date). The representations and warranties of Parent and Merger Sub contained in this Agreement (other than the Parent Fundamental Representations) shall have been true and correct as of the date of this Agreement and shall be true and correct on and as of the Closing Date with the same force and effect as if made on the Closing Date except (a) in each case, or in the aggregate, where the failure to be true and correct would not reasonably be expected to have a Parent Material Adverse Effect (without giving effect to any references therein to any Parent Material Adverse Effect or other materiality qualifications), or (b) for those representations and warranties which address matters only as of a particular date (which representations shall have been true and correct, subject to the qualifications as set forth in the preceding clause (a), as of such particular date) (it being understood that, for purposes of determining the accuracy of such representations and warranties, any update of or modification to the Parent Disclosure Schedule made or purported to have been made after the date of this Agreement shall be disregarded).

8.2 **Performance of Covenants.** Parent and Merger Sub shall have performed or complied with in all material respects all of their agreements and covenants required to be performed or complied with by each of them under this Agreement at or prior to the Effective Time.

8.3 **Documents.** The Company shall have received the following documents, each of which shall be in full force and effect:

(a) a certificate executed by the Chief Executive Officer or Chief Financial Officer of Parent confirming that the conditions set forth in [Sections 8.1, 8.2, and 8.4](#) have been duly satisfied;

(b) the Parent Outstanding Shares Certificate; and

(c) a written resignation, in a form reasonably satisfactory to the Company, dated as of the Closing Date and effective as of the Closing, executed by each of the officers and directors of Parent who are not to continue as officers or directors of Parent after the Closing pursuant to [Section 5.11](#) hereof.

8.4 **No Parent Material Adverse Effect.** Since the date of this Agreement, there shall not have occurred any Parent Material Adverse Effect.

8.5 **Parent Lock-Up and Support Agreements.** The Company shall have received the Parent Lock-Up Agreements and Parent Support Agreements duly executed by each of the Parent Signatories, each of which shall be in full force and effect.

8.6 **Parent Tax Representation Letter.** DLA shall have received a copy of the Parent Tax Representation Letter.

8.7 **Board of Directors.** Parent shall have caused the Parent Board to be constituted as set forth in Section 5.11 of this Agreement effective as of the Effective Time.

Section 9. TERMINATION

9.1 **Termination.** This Agreement may be terminated prior to the Effective Time (whether before or after adoption of this Agreement by the Company's stockholders and whether before or after approval of the Parent Stockholder Matters by Parent's stockholders, unless otherwise specified below):

(a) by mutual written consent of Parent and the Company;

(b) by either Parent or the Company if the Contemplated Transactions shall not have been consummated by the date that is six months after the date hereof (subject to possible extension as provided in this Section 9.1(b)), the "End Date"; *provided, however*, that the right to terminate this Agreement under this Section 9.1(b) shall not be available to the Company, on the one hand, or to Parent, on the other hand, if such Party's action or failure to act has been a principal cause of the failure of the Contemplated Transactions to occur on or before the End Date and such action or failure to act constitutes a breach of this Agreement that would give the other Party the right to terminate this Agreement pursuant to Section 9.1(g) or Section 9.1(f), as applicable, *provided, further, however*, that, in the event that a request for additional information has been made by any Governmental Body, or in the event that the SEC has not concluded its review of the preliminary Proxy Statement (whether by confirmation that the SEC has no further comments or expiration of the 10-day waiting period contemplated by Rule 14a-6(a) promulgated under the Exchange Act) by the date which is 60 days prior to the End Date, then either the Company or Parent shall be entitled to extend the End Date for an additional 60 days by written notice to the other Party;

(c) by either Parent or the Company if a court of competent jurisdiction or other Governmental Body shall have issued a final and nonappealable order, decree or ruling, or shall have taken any other action, having the effect of permanently restraining, enjoining or otherwise prohibiting the Contemplated Transactions (in each case, to a date following the End Date); *provided, however*, that the right to terminate this Agreement under this Section 9.1(c) shall not be available to the Company, on the one hand, or to Parent, on the other hand, if such Party's action or failure to act has been a principal cause of the issuance of such order, decree or ruling or the taking of such other action and such action or failure to act constitutes a breach of this Agreement that would give the other Party the right to terminate this Agreement pursuant to Section 9.1(g) or Section 9.1(f), as applicable;

(d) by Parent if the Company Stockholder Written Consent evidencing the Required Company Stockholder Vote shall not have been obtained immediately following the execution of this Agreement; *provided, however*, that if the Company Stockholder Written Consent evidencing the Required Company Stockholder Vote has been obtained and has continuously been in full force and effect, Parent may not terminate this Agreement pursuant to this Section 9.1(d);

(e) by either Parent or the Company if (i) the Parent Stockholders' Meeting (including any adjournments and postponements thereof) shall have been held and completed and Parent's stockholders shall have taken a final vote on the Parent Stockholder Matters and (ii) the Parent Stockholder Matters shall not have been approved at the Parent Stockholders' Meeting (or at any adjournment or postponement thereof) by the Required Parent Stockholder Vote;

(f) by the Company, upon a breach of any representation, warranty, covenant or agreement set forth in this Agreement by Parent or Merger Sub or if any representation or warranty of Parent or Merger Sub shall have become inaccurate, in either case, such that the conditions set forth in Section 8.1 or Section 8.2 would not be satisfied as of the time of such breach or as of the time such representation or warranty shall have become inaccurate; *provided* that the Company is not then in material breach of any representation, warranty, covenant or agreement under this Agreement; *provided, further*, that if such inaccuracy in Parent's or Merger Sub's representations and warranties or breach by Parent or Merger Sub is curable by the End Date by Parent or Merger Sub, then this Agreement shall not terminate pursuant to this Section 9.1(f) as a result of such particular breach or inaccuracy until the expiration of a 30-day period commencing upon delivery of written notice from the Company to Parent or Merger Sub of such breach or inaccuracy and its intention to terminate pursuant to this Section 9.1(f) (it being understood that this Agreement shall not terminate pursuant to this Section 9.1(f) as a result of such particular breach or inaccuracy if such breach by Parent or Merger Sub is cured prior to such termination becoming effective);

(g) by Parent, upon a breach of any representation, warranty, covenant or agreement set forth in this Agreement by the Company or if any representation or warranty of the Company shall have become inaccurate, in either case, such that the conditions set forth in Section 7.1 or Section 7.2 would not be satisfied as of the time of such breach or as of the time such representation or warranty shall have become inaccurate; *provided* that Parent is not then in material breach of any representation, warranty, covenant or agreement under this Agreement; *provided, further*, that if such inaccuracy in the Company's representations and warranties or breach by the Company is curable by the End Date by the Company then this Agreement shall not terminate pursuant to this Section 9.1(g) as a result of such particular breach or inaccuracy until the expiration of a 30-day period commencing upon delivery of written notice from Parent to the Company of such breach or inaccuracy and its intention to terminate pursuant to this Section 9.1(g) (it being understood that this Agreement shall not terminate pursuant to this Section 9.1(g) as a result of such particular breach or inaccuracy if such breach by the Company is cured prior to such termination becoming effective); or

(h) by the Company, if the Parent Board shall have effected a Parent Board Adverse Recommendation Change.

9.2 **Effect of Termination.** In the event of the termination of this Agreement as provided in Section 9.1, this Agreement shall be of no further force or effect; *provided, however*, that (a) this Section 9.2, Section 5.7, Section 9.3, Section 10 and the definitions of the defined terms in such Sections shall survive the termination of this Agreement and shall remain in full force and effect and (b) the termination of this Agreement and the provisions of Section 9.3 shall not relieve any Party of any liability for fraud or for any willful and material breach of any representation, warranty, covenant, obligation or other provision contained in this Agreement.

9.3 Expenses; Termination Fees.

(a) Whether or not the Merger is consummated, (i) all Parent Transaction Expenses shall be paid by Parent (or on behalf of Parent) at or prior to the Closing and (ii) all Company Transaction Expenses shall be paid by the Company.

(b) If this Agreement is terminated (i) by Parent pursuant to Section 9.1(d), or (ii) by the Company pursuant to Section 9.1(b) and the Company Stockholder Written Consent evidencing the Required Company Stockholder Vote has not been obtained by the Company, then the Company shall pay to Parent within five Business Days of such termination an amount equal to \$2,000,000.

(c) If (i) this Agreement is terminated by either Parent or the Company pursuant to Section 9.1(e), or (ii) by Parent pursuant to Section 9.1(b) and the Required Parent Stockholder Vote has not been obtained by Parent, then Parent shall pay to the Company within five Business Days of such termination an amount equal to \$2,000,000.

(d) If this Agreement is terminated by the Company pursuant to Section 9.1(h), then Parent shall pay to the Company within five Business Days of such termination an amount equal to \$2,000,000.

(e) Any fee payable by the Company or Parent under Section 9.2 or this Section 9.3 shall be paid by wire transfer of same day funds. If a Party fails to pay when due any amount payable by it under Section 9.2 or this Section 9.3, then such Party shall pay to the other Party interest on such overdue amount (for the period commencing as of the date such overdue amount was originally required to be paid and ending on the date such overdue amount is actually paid to the other Party in full) at a rate per annum equal to the "prime rate" (as published in *The Wall Street Journal* or any successor thereto) in effect on the date such overdue amount was originally required to be paid.

(f) The Parties agree that, (i) subject to Section 9.2, any fee payable by Parent to the Company under this Section 9.3, in the circumstances in which it is owed in accordance with the terms of this Agreement, constitute the sole and exclusive remedy of the Company following the termination of this Agreement under the circumstances described in this Section 9.3, it being understood that in no event shall Parent be required to pay the amounts payable pursuant to this Section 9.3 on more than one occasion and (ii) following payment of any fee payable by Parent to the Company under this Section 9.3 (A) Parent shall have no further liability to the Company in connection with or arising out of this Agreement or the termination thereof, any breach of this Agreement by Parent giving rise to such termination, or the failure of the Contemplated Transactions to be consummated, (B) neither the Company nor any of its Affiliates shall be entitled to bring or maintain any other claim, action or proceeding against Parent or Merger Sub or seek to obtain any recovery, judgment or damages of any kind against such Parties (or any partner, member, stockholder, director, officer, employee, Subsidiary, Affiliate, agent or other Representative of such Parties) in connection with or arising out of this Agreement or the termination thereof, any breach by any such Parties giving rise to such termination or the failure of the Contemplated Transactions to be consummated and (C) the Company and its Affiliates shall be precluded from any other remedy against Parent, Merger Sub and their respective Affiliates, at law or in equity or otherwise, in connection with or arising out of this Agreement or the termination thereof, any breach by such Party giving rise to such termination or the failure of the Contemplated Transactions to be consummated; *provided, however*, that nothing in this Section 9.3(f) shall limit the rights of Parent and Merger Sub under Section 10.11.

(g) The Parties agree that, (i) subject to Section 9.2, any fee payable by the Company to Parent under this Section 9.3 shall, in the circumstances in which it is owed in accordance with the terms of this Agreement, constitute the sole and exclusive remedy of Parent following the termination of this Agreement under the circumstances described in this Section 9.3, it being understood that in no event shall the Company be required to pay the amounts payable pursuant to this Section 9.3 on more than one occasion and (ii) following payment of any fee payable by the Company to Parent under this Section 9.3 (A) the Company shall have no further liability to Parent in connection with or arising out of this Agreement or the termination thereof, any breach of this Agreement by the Company giving rise to such termination, or the failure of the Contemplated Transactions to be consummated, (B) neither Parent nor any of its Affiliates shall be entitled to bring or maintain any other claim, action or proceeding against the Company or seek to obtain any recovery, judgment or damages of any kind against such Parties (or any partner, member, stockholder, director, officer, employee, Subsidiary, Affiliate, agent or other Representative of such Parties) in connection with or arising out of this Agreement or the termination thereof, any breach by any such Parties giving rise to such termination or the failure of the Contemplated Transactions to be consummated and (C) Parent and its Affiliates shall be precluded from any other remedy against the Company and its Affiliates, at law or in equity or otherwise, in connection with or arising out of this Agreement or the termination thereof, any breach by such Party giving rise to such termination or the failure of the Contemplated Transactions to be consummated; *provided, however*, that nothing in this Section 9.3(g) shall limit the rights of the Company under Section 10.11.

(h) Each of the Parties acknowledges that (i) the agreements contained in this Section 9.3 are an integral part of the Contemplated Transactions, (ii) without these agreements, the Parties would not enter into this Agreement and (iii) any amount payable pursuant to this Section 9.3 is not a penalty, but rather is liquidated damages in a reasonable amount that will compensate the Company in the circumstances in which such amount is payable.

Section 10. MISCELLANEOUS PROVISIONS

10.1 **Non-Survival of Representations and Warranties.** The representations and warranties of the Company, Parent and Merger Sub contained in this Agreement or any certificate or instrument delivered pursuant to this Agreement shall terminate at the Effective Time, and only the covenants that by their terms survive the Effective Time and this Section 10 shall survive the Effective Time.

10.2 **Amendment.** This Agreement may be amended with the approval of the respective boards of directors of the Company, Merger Sub and Parent at any time (whether before or after the adoption and approval of this Agreement by the Company's stockholders or before or after obtaining the Required Parent Stockholder Vote); *provided, however*, that after any such approval of this Agreement by a Party's stockholders, no amendment shall be made which by Law requires further approval of such stockholders without the further approval of such stockholders. This Agreement may not be amended except by an instrument in writing signed on behalf of each of the Company, Merger Sub and Parent.

10.3 **Waiver.**

(a) No failure on the part of any Party to exercise any power, right, privilege or remedy under this Agreement, and no delay on the part of any Party in exercising any power, right, privilege or remedy under this Agreement, shall operate as a waiver of such power, right, privilege or remedy; and no single or partial exercise of any such power, right, privilege or remedy shall preclude any other or further exercise thereof or of any other power, right, privilege or remedy.

(b) No Party shall be deemed to have waived any claim arising out of this Agreement, or any power, right, privilege or remedy under this Agreement, unless the waiver of such claim, power, right, privilege or remedy is expressly set forth in a written instrument duly executed and delivered on behalf of such Party and any such waiver shall not be applicable or have any effect except in the specific instance in which it is given.

10.4 **Entire Agreement; Counterparts; Exchanges by Electronic Transmission.** This Agreement and the other agreements referred to in this Agreement constitute the entire agreement and supersede all prior agreements and understandings, both written and oral, among or between any of the Parties with respect to the subject matter hereof and thereof; *provided, however*, that the Confidentiality Agreement shall not be superseded and shall remain in full force and effect in accordance with its terms. This Agreement may be executed in several counterparts, each of which shall be deemed an original and all of which shall constitute one and the same instrument. The exchange of a fully executed Agreement (in counterparts or otherwise) by all Parties by electronic transmission in .PDF format shall be sufficient to bind the Parties to the terms and conditions of this Agreement.

10.5 **Applicable Law; Jurisdiction; Waiver of Jury Trial.**

(a) This Agreement shall be governed by, and construed in accordance with, the Laws of the State of Delaware, regardless of the Laws that might otherwise govern under applicable principles of conflicts of laws. In any action or proceeding between any of the Parties arising out of or relating to this Agreement or any of the Contemplated Transactions, each of the Parties: (a) irrevocably and unconditionally consents and submits to the exclusive jurisdiction and venue of the Court of Chancery of the State of Delaware or, to the extent such court does not have subject matter jurisdiction, the United States District Court for the District of Delaware or, to the extent that neither of the foregoing courts has jurisdiction, the Superior Court of the State of Delaware; (b) agrees that all claims in respect of such action or proceeding shall be heard and determined exclusively in accordance with clause (a) of this Section 10.5; (c) waives any objection to laying venue in any such action or proceeding in such courts; (d) waives any objection that such courts are an inconvenient forum or do not have jurisdiction over any Party; and (e) agrees that service of process upon such Party in any such action or proceeding shall be effective if notice is given in accordance with Section 10.8 of this Agreement.

(b) EACH PARTY TO THIS AGREEMENT HEREBY WAIVES, TO THE FULLEST EXTENT PERMITTED BY LAW, ANY RIGHT TO TRIAL BY JURY OF ANY CLAIM, DEMAND, ACTION, OR CAUSE OF ACTION (i) ARISING UNDER THIS AGREEMENT OR (ii) IN ANY WAY CONNECTED WITH OR RELATED OR INCIDENTAL TO THE DEALINGS OF THE PARTIES HERETO IN RESPECT OF THIS AGREEMENT OR ANY OF THE CONTEMPLATED TRANSACTIONS, IN EACH CASE WHETHER NOW EXISTING OR HEREAFTER ARISING, AND WHETHER IN CONTRACT, TORT, EQUITY, OR OTHERWISE. EACH PARTY TO THIS AGREEMENT HEREBY AGREES AND CONSENTS THAT ANY SUCH CLAIM, DEMAND, ACTION, OR CAUSE OF ACTION SHALL BE DECIDED BY COURT TRIAL WITHOUT A JURY AND THAT THE PARTIES TO THIS AGREEMENT MAY FILE AN ORIGINAL COUNTERPART OF A COPY OF THIS AGREEMENT WITH ANY COURT AS WRITTEN EVIDENCE OF THE CONSENT OF THE PARTIES HERETO TO THE WAIVER OF THEIR RIGHT TO TRIAL BY JURY.

10.6 **Attorneys' Fees.** In any action at law or suit in equity to enforce this Agreement or the rights of any of the Parties, the prevailing Party in such action or suit (as determined by a court of competent jurisdiction) shall be entitled to recover its reasonable out-of-pocket attorneys' fees and all other reasonable costs and expenses incurred in such action or suit.

10.7 **Assignability.** This Agreement shall be binding upon, and shall be enforceable by and inure solely to the benefit of, the Parties and their respective successors and permitted assigns; *provided, however*, that neither this Agreement nor any of a Party's rights or obligations hereunder may be assigned or delegated by such Party without the prior written consent of the other Party, and any attempted assignment or delegation of this Agreement or any of such rights or obligations by such Party without the other Party's prior written consent shall be void and of no effect.

10.8 **Notices.** All notices and other communications hereunder shall be in writing and shall be deemed to have been duly delivered and received hereunder (a) one Business Day after being sent for next Business Day delivery, fees prepaid, via a reputable international overnight courier service, (b) upon delivery in the case of delivery by hand, or (c) on the date delivered in the place of delivery if sent by email (with a written or electronic confirmation of delivery) prior to 5:00 p.m. Central time, otherwise on the next succeeding Business Day, in each case to the intended recipient as set forth below:

if to Parent or Merger Sub:

NewLink Genetics Corporation
2503 South Loop Drive
Ames, IA 50010
Attention: Carl Langren, Brad Powers
Email: clangren@linkp.com, bpowers@linkp.com

with a copy to (which shall not constitute notice):

Cooley LLP
380 Interlocken Crescent, Suite 900
Broomfield, CO 80021
Attention: James C.T. Linfield, Laura Medina
Email: linfieldjct@cooley.com, lmedina@cooley.com

if to the Company:

Lumos Pharma, Inc.
4200 Marathon Blvd., Suite 200
Austin, Texas 78756
Attention: Rick Hawkins, President & Chief Executive Officer
Email: rhawkins@lumos-pharma.com

with a copy to (which shall not constitute notice):

DLA Piper LLP (US)
401 Congress, Suite 2500
Austin, Texas 78701
Attention: Samer M. Zabaneh, P.C.
Email: Samer.Zabaneh@dlapiper.com

10.9 **Cooperation.** Each Party agrees to cooperate fully with the other Party and to execute and deliver such further documents, certificates, agreements and instruments and to take such other actions as may be reasonably requested by the other Party to evidence or reflect the Contemplated Transactions and to carry out the intent and purposes of this Agreement.

10.10 **Severability.** Any term or provision of this Agreement that is invalid or unenforceable in any situation in any jurisdiction shall not affect the validity or enforceability of the remaining terms and provisions of this Agreement or the validity or enforceability of the offending term or provision in any other situation or in any other jurisdiction. If a final judgment of a court of competent jurisdiction declares that any term or provision of this Agreement is invalid or unenforceable, the Parties agree that the court making such determination shall have the power to limit such term or provision, to delete specific words or phrases or to replace such term or provision with a term or provision that is valid and enforceable and that comes closest to expressing the intention of the invalid or unenforceable term or provision, and this Agreement shall be valid and enforceable as so modified. In the event such court does not exercise the power granted to it in the prior sentence, the Parties agree to replace such invalid or unenforceable term or provision with a valid and enforceable term or provision that will achieve, to the extent possible, the economic, business and other purposes of such invalid or unenforceable term or provision.

10.11 **Other Remedies; Specific Performance.** Except as otherwise provided herein, any and all remedies herein expressly conferred upon a Party will be deemed cumulative with and not exclusive of any other remedy conferred hereby, or by law or equity upon such Party, and the exercise by a Party of any one remedy will not preclude the exercise of any other remedy. The Parties agree that irreparable damage for which monetary damages, even if available, would not be an adequate remedy, would occur in the event that any Party does not perform the provisions of this Agreement (including failing to take such actions as are required of it hereunder to consummate this Agreement) in accordance with its specified terms or otherwise breaches such provisions. Accordingly, the Parties acknowledge and agree that the Parties shall be entitled to an injunction, specific performance and other equitable relief to prevent breaches of this Agreement and to enforce specifically the terms and provisions hereof, in addition to any other remedy to which they are entitled at law or in equity. Each of the Parties agrees that it will not oppose the granting of an injunction, specific performance or other equitable relief on the basis that any other Party has an adequate remedy at law or that any award of specific performance is not an appropriate remedy for any reason at law or in equity. Any Party seeking an injunction or injunctions to prevent breaches of this Agreement shall not be required to provide any bond or other security in connection with any such order or injunction.

10.12 **No Third Party Beneficiaries.** Nothing in this Agreement, express or implied, is intended to or shall confer upon any Person (other than the Parties, the D&O Indemnified Parties and the Company Stockholders receiving Registrable Securities to the extent of their respective rights pursuant to [Section 5.5](#) and [Section 5.21](#)) any right, benefit or remedy of any nature whatsoever under or by reason of this Agreement.

10.13 **Construction.**

(a) References to “cash,” “dollars” or “\$” are to U.S. dollars.

(b) For purposes of this Agreement, whenever the context requires: the singular number shall include the plural, and vice versa; the masculine gender shall include the feminine and neuter genders; the feminine gender shall include the masculine and neuter genders; and the neuter gender shall include masculine and feminine genders.

(c) The Parties have participated jointly in the negotiating and drafting of this Agreement and agree that any rule of construction to the effect that ambiguities are to be resolved against the drafting Party shall not be applied in the construction or interpretation of this Agreement, and no presumption or burden of proof shall arise favoring or disfavoring any Party by virtue of the authorship of any provision of this Agreement.

(d) As used in this Agreement, the words “include” and “including,” and variations thereof, shall not be deemed to be terms of limitation, but rather shall be deemed to be followed by the words “without limitation.”

(e) Except as otherwise indicated, all references in this Agreement to “Sections,” “Exhibits” and “Schedules” are intended to refer to Sections of this Agreement and Exhibits and Schedules to this Agreement, respectively.

(f) Any reference to legislation or to any provision of any legislation shall include any modification, amendment, re-enactment thereof, any legislative provision substituted therefore and all rules, regulations, and statutory instruments issued or related to such legislations.

(g) The bold-faced headings and table of contents contained in this Agreement are for convenience of reference only, shall not be deemed to be a part of this Agreement and shall not be referred to in connection with the construction or interpretation of this Agreement.

(h) The Parties agree that each of the Company Disclosure Schedule and the Parent Disclosure Schedule shall be arranged in sections and subsections corresponding to the numbered and lettered sections and subsections contained in this Agreement. The disclosures in any section or subsection of the Company Disclosure Schedule or the Parent Disclosure Schedule shall qualify other sections and subsections in this Agreement to the extent it is reasonably apparent on its face from a reading of the disclosure that such disclosure is applicable to such other sections and subsections.

(i) Each of "delivered" or "made available" means, with respect to any documentation, that prior to 11:59 p.m. (Central time) on the date that is two Business Days prior to the date of this Agreement (i) a copy of such material has been posted to and made available by a Party to the other Party and its Representatives in the electronic data room maintained by such disclosing Party or (ii) such material is disclosed in the Parent SEC Documents filed with the SEC prior to the date hereof and publicly made available on the SEC's Electronic Data Gathering Analysis and Retrieval system.

(j) Whenever the last day for the exercise of any privilege or the discharge of any duty hereunder shall fall upon a Saturday, Sunday, or any date on which banks in New York, New York are authorized or obligated by Law to be closed, the Party having such privilege or duty may exercise such privilege or discharge such duty on the next succeeding day which is a regular Business Day.

(Remainder of page intentionally left blank)

IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed as of the date first above written.

NEWLINK GENETICS CORPORATION

By: /s/ Brad Powers
Name: Brad Powers
Title: Office of the Chief Executive Officer

CYCLONE MERGER SUB, INC.

By: /s/ Brad Powers
Name: Brad Powers
Title: President

SIGNATURE PAGE TO MERGER AGREEMENT

LUMOS PHARMA, INC.

By: /s/ Richard J. Hawkins
Name: Richard J. Hawkins
Title: President and Chief Executive Officer

SIGNATURE PAGE TO MERGER AGREEMENT

EXHIBIT A
CERTAIN DEFINITIONS

(a) For purposes of this Agreement (including this Exhibit A):

“**Acquisition Inquiry**” means, with respect to a Party, an inquiry, indication of interest or request for information (other than an inquiry, indication of interest or request for information made or submitted by the Company, on the one hand, or Parent, on the other hand, to the other Party) that could reasonably be expected to lead to an Acquisition Proposal.

“**Acquisition Proposal**” means, with respect to a Party, any offer or proposal, whether written or oral (other than an offer or proposal made or submitted by or on behalf of the Company or any of its Affiliates, on the one hand, or by or on behalf of Parent or any of its Affiliates, on the other hand, to the other Party) contemplating or otherwise relating to any Acquisition Transaction with such Party.

“**Acquisition Transaction**” means any transaction or series of related transactions involving:

(i) any merger, consolidation, amalgamation, share exchange, business combination, issuance of securities, acquisition of securities, reorganization, recapitalization, tender offer, exchange offer or other similar transaction: (1) in which a Party is a constituent Entity; (ii) in which a Person or “group” (as defined in the Exchange Act and the rules promulgated thereunder) of Persons directly or indirectly acquires beneficial or record ownership of securities representing more than 20% of the outstanding securities of any class of voting securities of a Party or any of its Subsidiaries; or (iii) in which a Party or any of its Subsidiaries issues securities representing more than 20% of the outstanding securities of any class of voting securities of such Party or any of its Subsidiaries; or

(ii) any sale, lease, exchange, transfer, license, acquisition or disposition of any business or businesses or assets that constitute or account for 20% or more of the consolidated book value or the fair market value of the assets of a Party and its Subsidiaries, taken as a whole.

“**Affiliate**” of a Person means any other Person that directly or indirectly, through one or more intermediaries, controls, is controlled by, or is under common control with, such Person. The term “control” (including the terms “controlled by” and “under common control with”) means the possession, directly or indirectly, of the power to direct or cause the direction of the management and policies of a Person, whether through the ownership of voting securities, by Contract or otherwise.

“**Agreement**” means the Agreement and Plan of Merger and Reorganization to which this **Exhibit A** is attached, as it may be amended from time to time.

“**Business Day**” means any day other than a Saturday, Sunday or other day on which banks in New York, New York are authorized or obligated by Law to be closed.

“**Code**” means the Internal Revenue Code of 1986, as amended.

“**Company Associate**” means any current or former employee, independent contractor, officer or director of the Company.

“**Company Board**” means the board of directors of the Company.

“**Company Capital Stock**” means the Company Common Stock and the Company Preferred Stock.

“**Company Common Stock**” means the Common Stock, \$0.0001 par value per share, of the Company.

“**Company Contract**” means any Contract: (a) to which the Company is a Party; (b) by which the Company or any Company IP or any other asset of the Company is or may become bound or under which the Company has, or may become subject to, any obligation; or (c) under which the Company Subsidiaries has or may acquire any right or interest.

“**Company ERISA Affiliate**” means any corporation or trade or business (whether or not incorporated) which is (or at any relevant time in the past six (6) years was) treated with the Company as a single employer within the meaning of Section 414 of the Code.

“**Company Fundamental Representations**” means the representations and warranties of the Company set forth in Sections 2.1 (Due Organization; Subsidiaries), 2.3 (Authority; Binding Nature of Agreement), 2.6(a) and (c) (Capitalization) and 2.20 (No Financial Advisors).

“**Company IP**” means all Intellectual Property Rights that are owned or purported to be owned by, assigned to, or exclusively licensed by, the Company or its Subsidiaries.

“**Company Material Adverse Effect**” means any Effect that, considered together with all other Effects that have occurred prior to the date of determination of the occurrence of a Company Material Adverse Effect, has or would reasonably be expected to have a material adverse effect on the business, financial condition, assets, liabilities or results of operations of the Company; *provided, however*, that Effects arising or resulting from the following shall not be taken into account in determining whether there has been a Company Material Adverse Effect: (a) general business, economic or political conditions affecting the industry in which the Company operates, (b) any natural disaster or any acts of war, armed hostilities or terrorism, (c) changes in financial, banking or securities markets, (d) the failure of the Company to meet internal or analysts’ expectations or projections or the results of operations of the Company, (e) any clinical trial programs or studies, including any adverse data, event or outcome arising out of or relating to any such programs or studies, (f) any change in, or any compliance with or action taken for the purpose of complying with, any Law or GAAP (or interpretations of any Law or GAAP), (g) resulting from the announcement of this Agreement or the pendency of the Contemplated Transactions, or (h) resulting from the taking of any action, or the failure to take any action, by the Company that is required to be taken by this Agreement; except in each case with respect to clauses (a) through (c), to the extent disproportionately affecting the Company relative to other similarly situated companies in the industries in which the Company operates.

“**Company Merger Shares**” means a number equal to the total number of shares of Parent Common Stock outstanding immediately prior to the Effective Time, excluding (i) the issuance of shares of Parent Common Stock in respect of all Parent Options and other outstanding options, warrants or rights to receive such shares, in each case, outstanding as of immediately prior to the Effective Time; and (ii) any shares of Parent Common Stock reserved for issuance.

“**Company Options**” means options or other rights to purchase shares of Company Common Stock issued by the Company.

“**Company Plans**” means the Company 2012 Equity Incentive Plan and Company 2016 Stock Plan, as amended.

“**Company Stockholder Matters**” means the following matters relating to the stockholders of the Company: (i) adopting and approving this Agreement and the Contemplated Transactions (including the adoption and filing of the Company Charter Amendment), (ii) acknowledging that the approval given thereby is irrevocable and that such stockholder is aware of its rights to demand appraisal for its shares pursuant to Section 262 of the DGCL, a true and correct copy of which will be attached thereto, and that such stockholder has received and read a copy of Section 262 of the DGCL, and (iii) acknowledging that by its approval of the Merger it is not entitled to appraisal rights with respect to its shares in connection with the Merger and thereby waives any rights to receive payment of the fair value of its capital stock under the DGCL.

“**Company Transaction Expenses**” means all fees and expenses incurred by the Company at or prior to the Effective Time in connection with the Contemplated Transactions and this Agreement, including any fees and expenses of legal counsel and accountants, the maximum amount of fees and expenses payable to financial advisors, investment bankers, brokers, consultants, and other advisors of the Company.

“**Company Unaudited Interim Balance Sheet**” means the unaudited balance sheet of the Company for the period ended June 30, 2019 provided to Parent prior to the date of this Agreement.

“**Confidentiality Agreement**” means the Mutual Confidential Disclosure Agreement, dated as of July 19, 2019, between the Company and Parent.

“**Consent**” means any approval, consent, ratification, permission, waiver or authorization (including any Governmental Authorization).

“**Consideration**” means the number of shares of Parent Common Stock to be issued to the holders of Company Capital Stock as contemplated by Section 1.5 of this Agreement and the number of Parent Options to be substituted for the Company Options to be assumed by Parent as contemplated by Section 5.4.

“**Contemplated Transactions**” means the Merger, the adoption and filing of the Company Charter Amendment and the other transactions and actions contemplated by this Agreement, including the Nasdaq Reverse Split.

“**Contract**” means, with respect to any Person, any written or oral agreement, contract, subcontract, lease (whether for real or personal property), mortgage, license, sublicense or other legally binding commitment or undertaking of any nature to which such Person is a party or by which such Person or any of its assets are bound or affected under applicable Law.

“**DGCL**” means the General Corporation Law of the State of Delaware.

“**Effect**” means any effect, change, event, circumstance, or development.

“**Encumbrance**” means any lien, pledge, hypothecation, charge, mortgage, security interest, lease, license, option, easement, reservation, servitude, adverse title, claim, infringement, interference,

option, right of first refusal, preemptive right, community property interest or restriction or encumbrance of any nature (including any restriction on the voting of any security, any restriction on the transfer of any security or other asset, any restriction on the receipt of any income derived from any asset, any restriction on the use of any asset and any restriction on the possession, exercise or transfer of any other attribute of ownership of any asset).

“Enforceability Exceptions” means the (a) Laws of general application relating to bankruptcy, insolvency and the relief of debtors; and (b) rules of law governing specific performance, injunctive relief and other equitable remedies.

“Entity” means any corporation (including any non-profit corporation), partnership (including any general partnership, limited partnership or limited liability partnership), joint venture, estate, trust, company (including any company limited by shares, limited liability company or joint stock company), firm, society or other enterprise, association, organization or entity, and each of its successors.

“Environmental Law” means any federal, state, local or foreign Law relating to pollution or protection of human health or the environment (including ambient air, surface water, ground water, land surface or subsurface strata), including any Law or regulation relating to emissions, discharges, releases or threatened releases of Hazardous Materials, or otherwise relating to the manufacture, processing, distribution, use, treatment, storage, disposal, transport or handling of Hazardous Materials.

“ERISA” means the Employee Retirement Income Security Act of 1974, as amended.

“Exchange Act” means the Securities Exchange Act of 1934.

“Exchange Ratio” means (i) with respect to Company Common Stock, the Per Share Common Stock Exchange Ratio, (ii) with respect to the Company’s Series A Preferred Stock, the Per Share Series A Exchange Ratio, and (iii) with respect to the Company’s Series B Preferred Stock, the Per Share Series B Exchange Ratio, each as defined in the Company Charter Amendment.

“GAAP” means generally accepted accounting principles and practices in effect from time to time within the United States applied consistently throughout the period involved.

“Governmental Authorization” means any: (a) permit, license, certificate, certification, franchise, permission, approval, exemption, variance, exception, order, clearance, registration, qualification or authorization issued, granted, given or otherwise made available by or under the authority of any Governmental Body or pursuant to any Law; or (b) right under any Contract with any Governmental Body.

“Governmental Body” means any: (a) nation, state, commonwealth, province, territory, county, municipality, district or other jurisdiction of any nature; (b) federal, state, local, municipal, foreign or other government; (c) governmental or quasi-governmental authority of any nature (including any governmental division, department, agency, commission, bureau, instrumentality, official, ministry, fund, foundation, center, organization, unit, body or Entity and any court or other tribunal, and for the avoidance of doubt, any taxing authority); or (d) self-regulatory organization (including Nasdaq).

“Hazardous Materials” means any pollutant, chemical, substance and any toxic, infectious, carcinogenic, reactive, corrosive, ignitable or flammable chemical, or chemical compound, or hazardous substance, material or waste, whether solid, liquid or gas, that is subject to regulation, control or remediation under any Environmental Law, including without limitation, crude oil or any fraction thereof, and petroleum products or by-products.

"Intellectual Property Rights" means and includes all intellectual property or other proprietary rights under the laws of any jurisdiction in the world, including, without limitation: (a) rights associated with works of authorship, including exclusive exploitation rights, copyrights, moral rights, software, databases, and mask works; (b) trademarks, service marks, trade dress, logos, trade names and other source identifiers, domain names and URLs and similar rights and any and all goodwill associated therewith; (c) rights associated with trade secrets, know how, inventions, invention disclosures, methods, processes, protocols, specifications, techniques and other forms of technology; (d) patents and industrial property rights; and (e) other similar proprietary rights in intellectual property of every kind and nature; (f) rights of privacy and publicity; and (g) all registrations, renewals, extensions, statutory invention registrations, provisionals, continuations, continuations-in-part, provisionals, divisions, or reissues of, and applications for, any of the rights referred to in clauses "(a)" through "(f)" above (whether or not in tangible form and including all tangible embodiments of any of the foregoing, such as samples, studies and summaries), along with all rights to prosecute and perfect the same through administrative prosecution, registration, recordation or other administrative proceeding, and all causes of action and rights to sue or seek other remedies arising from or relating to the foregoing, including for past, present or future infringement of any of the foregoing.

"IRS" means the United States Internal Revenue Service.

"Knowledge" means, with respect to an individual, that such individual is actually aware of the relevant fact. Any Person that is an Entity shall have Knowledge if any officer or director of such Person as of the date such knowledge is imputed has Knowledge of such fact or other matter.

"Law" means any federal, state, national, foreign, material local or municipal or other law, statute, constitution, principle of common law, resolution, ordinance, code, edict, decree, rule, regulation, ruling or requirement issued, enacted, adopted, promulgated, implemented or otherwise put into effect by or under the authority of any Governmental Body (including under the authority of Nasdaq or the Financial Industry Regulatory Authority).

"Legal Proceeding" means any action, suit, litigation, arbitration, proceeding (including any civil, criminal, administrative, investigative or appellate proceeding), hearing, inquiry, audit, examination or investigation commenced, brought, conducted or heard by or before, or otherwise involving, any court or other Governmental Body or any arbitrator or arbitration panel.

"Merger Sub Board" means the board of directors of Merger Sub.

"Nasdaq" means the Nasdaq Stock Market, including the Nasdaq Global Market or such other Nasdaq market on which shares of Parent Common Stock are then listed.

"Nasdaq Reverse Split" means a reverse stock split of all outstanding shares of Parent Common Stock at a reverse stock split ratio as mutually agreed to by Parent and the Company that is effected by Parent for the purpose of maintaining compliance with Nasdaq listing standards.

"Ordinary Course of Business" means, in the case of each of the Company and Parent, such actions taken in the ordinary course of its normal operations and consistent with its past practices.

"Organizational Documents" means, with respect to any Person (other than an individual), (a) the certificate or articles of association or incorporation or organization or limited partnership or limited liability company, and any joint venture, limited liability company, operating or partnership agreement and other similar documents adopted or filed in connection with the creation, formation or organization of such

Person and (b) all bylaws, regulations and similar documents or agreements relating to the organization or governance of such Person, in each case, as amended or supplemented.

“Parent Associate” means any current or former employee, independent contractor, officer or director of Parent.

“Parent Balance Sheet” means the unaudited balance sheet of Parent as of June 30, 2019 (the **“Parent Balance Sheet Date”**), included in Parent’s Report on Form 10-Q for the quarterly period ended June 30, 2019, as filed with the SEC.

“Parent Board” means the board of directors of Parent.

“Parent Change in Circumstance” means a change in circumstances (other than an Acquisition Proposal) that affects the business, assets or operations of Parent that occurs or arises after the date of this Agreement.

“Parent Closing Price” means the volume weighted average closing trading price of a share of Parent Common Stock on Nasdaq for the five consecutive trading days ending five trading days immediately prior to the date of this Agreement.

“Parent Common Stock” means the Common Stock, \$0.01 par value per share, of Parent.

“Parent Contract” means any Contract: (a) to which Parent or Merger Sub is a party; (b) by which Parent, Merger Sub or any Parent IP or any other asset of Parent or Merger Sub is or may become bound or under which Parent or Merger Sub has, or may become subject to, any obligation; or (c) under which Parent or Merger Sub has or may acquire any right or interest.

“Parent ERISA Affiliate” means any corporation or trade or business (whether or not incorporated) which is (or at any relevant time was) treated with Parent or any of its Subsidiaries as a single employer within the meaning of Section 414 of the Code.

“Parent Fundamental Representations” means the representations and warranties of Parent and Merger Sub set forth in Sections 3.1(a) and (b) (Due Organization; Subsidiaries), 3.3 (Authority; Binding Nature of Agreement), 3.5(a) and (c) (Capitalization) and 3.20 (No Financial Advisors).

“Parent IP” means all Intellectual Property Rights that are owned or purported to be owned by, assigned to, or exclusively licensed by, Parent or its Subsidiaries.

“Parent Material Adverse Effect” means any Effect that, considered together with all other Effects that have occurred prior to the date of determination of the occurrence of a Parent Material Adverse Effect, has or would reasonably be expected to have a material adverse effect on the business, financial condition, assets, liabilities or results of operations of Parent; *provided, however*, that Effects arising or resulting from the following shall not be taken into account in determining whether there has been a Parent Material Adverse Effect: (a) general business, economic or political conditions affecting the industry in which Parent operates, (b) any natural disaster or any acts of war, armed hostilities or terrorism, (c) changes in financial, banking or securities markets, (d) the taking of any action required to be taken by this Agreement, (e) any change in the stock price or trading volume of Parent Common Stock (it being understood, however, that any Effect causing or contributing to any change in stock price or trading volume of Parent Common Stock may be taken into account in determining whether a Parent Material Adverse Effect has occurred, unless such Effects are otherwise excepted from this definition), (f) the failure of Parent to meet internal or

analysts' expectations or projections or the results of operations of Parent; (g) any clinical trial programs or studies, including any adverse data, event or outcome arising out of or related to any such programs or studies; (h) any change in, or any compliance with or action taken for the purpose of complying with, any Law or GAAP (or interpretations of any Law or GAAP); (i) resulting from the announcement of this Agreement or the pendency of the Contemplated Transactions; or (j) resulting from the taking of any action or the failure to take any action, by Parent that is required to be taken by this Agreement, except in each case with respect to clauses (a) through (c), to the extent disproportionately affecting Parent relative to other similarly situated companies in the industries in which Parent operates.

"Parent Options" means options or other rights to purchase shares of Parent Common Stock issued by Parent.

"Parent Stock Plans" means, the Parent 2000 Equity Incentive Plan, the Parent 2009 Equity Incentive Plan, and the Parent 2010 Non-Employee Directors' Stock Award Plan, in each case, as may be amended from time to time.

"Parent Transaction Expenses" means all fees and expenses incurred by Parent at or prior to the Effective Time in connection with the Contemplated Transactions and this Agreement, including (a) any fees and expenses of legal counsel and accountants, the maximum amount of fees and expenses payable to financial advisors, investment bankers, brokers, consultants, and other advisors of Parent; (b) 100% of (i) the fees paid to the SEC in connection with filing the Proxy Statement, and any amendments and supplements thereto with the SEC; (ii) the Nasdaq Fees; (iii) the fees and expenses paid or payable to the Exchange Agent pursuant to the engagement agreement with the Exchange Agent; (iv) any fees and expenses incurred by Parent's financial printer or proxy solicitor in connection with the filing and distribution of the Proxy Statement and any amendments and supplements thereto with the SEC (without duplication of the fees and expenses addressed in clause (b)(i) above); and (v) 100% of the D&O Tail Policy.

"Party" or **"Parties"** means the Company, Merger Sub and Parent.

"Permitted Encumbrance" means: (a) any liens for current Taxes not yet due and payable or for Taxes that are being contested in good faith and, in each case, for which adequate reserves have been made on the Company Unaudited Interim Balance Sheet or the Parent Balance Sheet, as applicable, in accordance with GAAP; (b) minor liens that have arisen in the Ordinary Course of Business and that do not (in any case or in the aggregate) materially detract from the value of the assets or properties subject thereto or materially impair the operations of the Company or any of its Subsidiaries or Parent, as applicable; (c) statutory liens to secure obligations to landlords, lessors or renters under leases or rental agreements; (d) deposits or pledges made in connection with, or to secure payment of, workers' compensation, unemployment insurance or similar programs mandated by Law; (e) non-exclusive licenses of Intellectual Property Rights granted by the Company or any of its Subsidiaries or Parent, as applicable, in the Ordinary Course of Business and that do not (in any case or in the aggregate) materially detract from the value of the Intellectual Property Rights subject thereto; and (f) statutory liens in favor of carriers, warehousemen, mechanics and materialmen, to secure claims for labor, materials or supplies.

"Person" means any individual, Entity or Governmental Body.

"Proxy Statement" means the proxy statement to be sent to Parent's stockholders in connection with the Parent Stockholders' Meeting.

"Reference Date" means September 6, 2019.

“**Registered IP**” means all Intellectual Property Rights that are registered or issued under the authority of any Governmental Body, including all patents, registered copyrights, registered mask works, and registered trademarks, service marks and trade dress, and all applications for any of the foregoing.

“**Representatives**” means directors, officers, employees, agents, attorneys, accountants, investment bankers, advisors and representatives.

“**Sarbanes-Oxley Act**” means the Sarbanes-Oxley Act of 2002.

“**SEC**” means the United States Securities and Exchange Commission.

“**Securities Act**” means the Securities Act of 1933, as amended.

“**Series A Preferred Stock**” means the shares of the Series A Preferred Stock of the Company, par value \$0.0001 per share.

“**Series B Preferred Stock**” means the shares of the Series B Preferred Stock of the Company, par value \$0.0001 per share.

An entity shall be deemed to be a “**Subsidiary**” of a Person if such Person directly or indirectly owns or purports to own, beneficially or of record, (a) an amount of voting securities or other interests in such entity that is sufficient to enable such Person to elect at least a majority of the members of such entity’s board of directors or other governing body, or (b) at least 50% of the outstanding equity, voting, beneficial or financial interests in such Entity.

“**Superior Offer**” means an unsolicited bona fide written Acquisition Proposal (with all references to 20% in the definition of Acquisition Transaction being treated as references to greater than 80% for these purposes) that: (a) was not obtained or made as a direct or indirect result of a breach of (or in violation of) this Agreement; and (b) is on terms and conditions that the Parent Board or the Company Board, as applicable, determines in good faith, taking into account at the time of determination all circumstances determined by the Parent Board or the Company Board, as applicable, in good faith to be relevant, including the various legal, financial and regulatory aspects of the Acquisition Proposal, all the terms and conditions of such Acquisition Proposal and this Agreement, any written offer by the other Party to this Agreement to amend the terms of this Agreement in response to such Acquisition Proposal, and the anticipated timing, conditions and the ability of the Person making such Acquisition Proposal to consummate the transactions contemplated by such Acquisition Proposal, and following consultation with its outside legal counsel and outside financial advisors, if any, are more favorable, from a financial point of view, to Parent’s stockholders or the Company’s stockholders, as applicable, than the terms of the Contemplated Transactions.

“**Takeover Statute**” means any “fair price,” “moratorium,” “control share acquisition” or other similar anti-takeover Law.

“**Tax**” means any federal, state, local, foreign or other tax, including any income, capital gain, gross receipts, capital stock, profits, transfer, estimated, registration, stamp, premium, escheat, unclaimed property, customs duty, ad valorem, occupancy, occupation, alternative, add-on, windfall profits, value added, severance, property, business, production, sales, use, license, excise, franchise, employment, payroll, social security, disability, unemployment, workers’ compensation, national health insurance, withholding or other taxes, duties, fees, assessments or governmental charges, surtaxes or deficiencies thereof of any kind whatsoever, however denominated, and including any fine, penalty, addition to tax or interest imposed by a Governmental Body with respect thereto.

“**Tax Return**” means any return (including any information return), report, statement, declaration, estimate, schedule, notice, notification, form, election, certificate or other document, and any amendment or supplement to any of the foregoing, filed with or submitted to, or required to be filed with or submitted to, any Governmental Body in connection with the determination, assessment, collection or payment of any Tax or in connection with the administration, implementation or enforcement of or compliance with any Law relating to any Tax.

“**Treasury Regulations**” means the United States Treasury regulations promulgated under the Code.

“**WARN Act**” means the Worker Adjustment Retraining and Notification Act of 1988, as amended, or any similar state or local plant closing mass layoff statute, rule or regulation.

(b) Each of the following terms is defined in the Section set forth opposite such term:***

Term	Section
Allocation Certificate	5.15(a)
Anti-Bribery Laws	2.23
Business Associate Agreement	2.14(h)
Certificate of Merger	1.3
Certifications	3.7(a)
Closing	1.3
Closing Date	1.3
Company	Preamble
Company Audited Financial Statements	5.16
Company Benefit Plan	2.17(a)
Company Disclosure Schedule	Section 2
Company Financials	2.7(a)
Company In-bound Licenses	2.12(d)
Company Interim Financial Statements	5.16
Company Lock-Up Agreement	Recitals
Company Material Contract	2.13(a)
Company Out-bound Licenses	2.12(d)
Company Permits	2.14(b)
Company Plan	2.6(c)
Company Preferred Stock	2.6(a)
Company Real Estate Leases	2.11
Company Signatories	Recitals
Company Stock Certificate	1.6
Company Stockholder Written Consent	2.4
Continuing Employee	4.7(a)
Costs	5.5(a)
D&O Indemnified Parties	5.5(a)

Term	Section
D&O Tail Policy	5.5(d)
Determination Notice	5.3(d)(i)
Dissenting Shares	1.8(a)
DLA	5.9(c)
Drug Regulatory Agency	2.14(a)
Effective Time	1.3
End Date	9.1(b)
Exchange Agent	1.7(a)
Exchange Fund	1.7(a)
FDA	2.14(a)
FDCA	2.14(a)
FLSA	2.17(o)
HIPAA	2.14(h)
Intended Tax Treatment	5.9(a)
Investor Agreements	2.22(b)
Liability	2.9
Merger	Recitals
Merger Consideration	1.5(a)(ii)
Merger Sub	Preamble
Nasdaq Fees	5.8
Nasdaq Listing Application	5.8
New Plans	4.7(b)
Other Parent Stockholder Matter	5.3(a)(iv)
Parent	Preamble
Parent Benefit Plan	3.17(a)
Parent Board Adverse Recommendation Change	5.3(c)
Parent Board Recommendation	5.3(c)
Parent Disclosure Schedule	Section 3
Parent In-bound License	3.12(d)
Parent Lock-Up Agreement	Recitals
Parent Material Contract	3.13
Parent Out-bound License	3.12(d)
Parent Permits	3.14(b)
Parent Real Estate Leases	3.11
Parent SEC Documents	3.7(a)
Parent Signatories	Recitals
Parent Stockholder Matters	5.3(a)(iv)
Parent Stockholder Support Agreement	Recitals
Parent Stockholders' Meeting	5.3(a)(iv)
Parent Tax Representation Letters	5.9(c)
Pre-Closing Period	4.1(a)
Required Company Stockholder Vote	2.4

Term	Section
Required Parent Stockholder Vote	3.4
Sensitive Data	2.12(g)
Stockholder Notice	5.2
Surviving Corporation	1.1

EXHIBIT B
FORM OF LOCK-UP

EXHIBIT C

PARENT STOCKHOLDER SUPPORT AGREEMENT

EXHIBIT D

SPECIFIED POST-CLOSING PARENT DESIGNEES

Officers

<u>Name</u>	<u>Title</u>
Rick Hawkins	Chief Executive Officer
Eugene P. Kennedy, MD	Chief Medical Officer
John McKew, PhD	Chief Science Officer
Carl Langren	Chief Financial Officer
Brad Powers, JD	General Counsel
Chris Bembem, MBA	Director, Business Development
Lori Lawley, CPA	VP Finance and Controller

EXHIBIT E
CERTIFICATE OF AMENDMENT
TO THE
AMENDED AND RESTATED
CERTIFICATE OF INCORPORATION
OF
LUMOS PHARMA, INC.

(Pursuant to Section 242 of the
General Corporation Law of the State of Delaware)

LUMOS PHARMA, INC. (the “*Corporation*”), a corporation organized and existing under the provisions of the Delaware General Corporation Law (the “*General Corporation Law*”),

DOES HEREBY CERTIFY:

1. The name of the Corporation is Lumos Pharma, Inc. and that the Corporation was originally converted from a Texas corporation to a Delaware corporation pursuant to the General Corporation Law on January 2, 2014 under the name Lumos Pharma, Inc. An Amended and Restated Certificate of Incorporation of the Corporation was filed with the Secretary of State of the State of Delaware on April 1, 2016 (the “*Amended and Restated Certificate*”).
2. This Certificate of Amendment to the Amended and Restated Certificate was duly adopted by the Corporation’s Board of Directors and stockholders in accordance with the applicable provisions of Sections 228 and 242 of the General Corporation Law.
3. Article Fourth Section B is hereby amended to include a new Subsection 2.5 as follows:
“2.5 Special Allocation of Assets. Notwithstanding anything in this Certificate of Incorporation to the contrary, upon the closing (the “*Closing*”) of that certain Agreement and Plan of Merger and Reorganization, dated as of September [], 2019 (the “*Merger Agreement*”), by and among NewLink Genetics Corporation (“*Parent*”), Cyclone Merger Sub, Inc. and the Corporation, (i) each holder of shares of Series B Preferred Stock shall be entitled to be paid a number of shares of Parent Common Stock equal to the product of the Per Share Series B Exchange Ratio, *multiplied by* the number of shares of Series B Preferred Stock held by such holder, (ii) each holder of shares of Series A Preferred Stock shall be entitled to be paid a number of shares of Parent Common Stock equal to the product of the Per Share Series A Exchange Ratio, *multiplied by* the number of shares of Series A Preferred Stock held by such holder, (iii) each holder of shares of Common Stock shall be entitled to be paid a number of shares of Parent Common Stock equal to the product of the Per Share Common Stock Exchange Ratio, *multiplied by* the number of shares of Common Stock held by such holder, and (iv) other than the foregoing, the holders of Common Stock and Preferred Stock shall not be entitled to receive any other payment, including, for the avoidance of doubt, any Accruing Dividends pursuant to Article Fourth, Section B.1 of this Certificate or any payments pursuant to Article Fourth, Sections B.2.1 through B.2.3; *provided, however*, that, for the avoidance of doubt, if the Closing does not occur for any reason, this Article Fourth, Section B.2.5 shall be null and void and of no further effect and upon any subsequent voluntary or involuntary liquidation, dissolution or winding up of the

Corporation or Deemed Liquidation Event, the provisions of Article Fourth, Sections B.2.1 through B.2.3 shall control.

For purposes of this Article Fourth, Section B.2.5, the following definitions shall apply:

“Parent Common Stock” shall mean the common stock, \$0.01 par value per share, of Parent.

“Parent Common Stock Ratio” shall mean an amount equal to the quotient of (i) 37,312,620, *divided by* (ii) the Company Merger Shares (as defined in the Merger Agreement).

“Per Share Common Stock Exchange Ratio” shall mean an amount equal to (i) the quotient of (x) 1.18655352337665, *divided by* (y) the Parent Common Stock Ratio *multiplied by* (ii) the quotient of (x) 8,933,437, *divided by* (y) the aggregate number of Common Stock outstanding at the Closing.

“Per Share Series A Exchange Ratio” shall mean an amount equal to (i) the quotient of (x) 0.786153154291732, *divided by* (y) the Parent Common Stock Ratio *multiplied by* (ii) the quotient of (x) 11,204,513, *divided by* (y) the aggregate number of Series A Preferred Stock outstanding at the Closing.

“Per Share Series B Exchange Ratio” shall mean an amount equal to (i) the quotient of (x) 1.79647182727751, *divided by* (y) the Parent Common Stock Ratio *multiplied by* (ii) the quotient of (x) 9,966,288, *divided by* (y) the aggregate number of Series B Preferred Stock outstanding at the Closing.

4. This Certificate of Amendment to the Amended and Restated Certificate shall be effective on and as of the date of filing of this Certificate of Amendment with the Secretary of State of the State of Delaware.

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IN WITNESS WHEREOF, this Certificate of Amendment to the Amended and Restated Certificate of Incorporation of the Corporation has been executed by a duly authorized officer of the Corporation this _____ day of _____, 2019.

LUMOS PHARMA, INC.

Richard J. Hawkins
President and Chief Executive Officer

SUPPORT AGREEMENT

This **SUPPORT AGREEMENT** (this "**Agreement**"), dated as of September [●], 2019, is by and between Lumos Pharma, Inc. ("**Lumos**"), and the Person set forth on Schedule A hereto (the "**Stockholder**").

WHEREAS, as of the date hereof, the Stockholder is the holder of the number of shares of common stock, par value \$0.01 per share ("**Common Stock**"), of NewLink Genetics Corporation, a Delaware corporation ("**NewLink**"), set forth opposite the Stockholder's name on Schedule A (all such shares set forth on Schedule A, together with any shares of Common Stock that are hereafter issued to or otherwise acquired or owned by the Stockholder prior to the termination of this Agreement being referred to herein as the "**Subject Shares**");

WHEREAS, Lumos, Cyclone Merger Sub, Inc., a Delaware corporation and a direct wholly owned subsidiary of NewLink ("**Merger Sub**") and NewLink propose to enter into an Agreement and Plan of Merger and Reorganization, dated as of the date hereof (the "**Merger Agreement**"), which provides, among other things, for the merger of Merger Sub with and into Lumos, with Lumos continuing as the surviving corporation (the "**Merger**"), upon the terms and subject to the conditions set forth in the Merger Agreement (capitalized terms used but not otherwise defined herein shall have the respective meanings ascribed to such terms in the Merger Agreement); and

WHEREAS, as a condition to its willingness to enter into the Merger Agreement, Lumos has required that the Stockholder, and as an inducement and in consideration therefor, the Stockholder (in the Stockholder's capacity as a holder of the Subject Shares) has agreed to, enter into this Agreement.

NOW, THEREFORE, in consideration of the foregoing and the respective representations, warranties, covenants and agreements set forth below and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto, intending to be legally bound, do hereby agree as follows:

ARTICLE I

VOTING AGREEMENT; GRANT OF PROXY

The Stockholder hereby covenants and agrees that:

1.1. **Voting of Subject Shares**. At every meeting of the holders of Company Capital Stock (the "**NewLink Stockholders**"), however called, and at every adjournment or postponement thereof (or pursuant to a written consent if the NewLink Stockholders act by written consent in lieu of a meeting), the Stockholder shall, or shall cause the holder of record on any applicable record date to, be present (in person or by proxy) and to vote the Subject Shares (a) in favor of (i) the amendment of NewLink's certificate of incorporation to effect the Nasdaq Reverse Split, (ii) the issuance of shares of NewLink Common Stock to Lumos's stockholders in connection with the Contemplated Transactions; (iii) the change of control of NewLink resulting from the Merger pursuant to the Nasdaq rules, if required, and (iv) any proposal submitted to the NewLink Stockholders in accordance with Section 14A of the Exchange Act and the applicable SEC rules issued thereunder, seeking advisory approval of NewLink Stockholders for a non-binding, advisory vote to approve certain compensation that may become payable to NewLink's named executive officers in connection with the completion of the Merger, if applicable; and (b) against any Acquisition Proposal.

1.2. **No Inconsistent Arrangements.** Except as provided hereunder or under the Merger Agreement, the Stockholder shall not, directly or indirectly, (a) create any Encumbrance other than restrictions imposed by applicable Laws or pursuant to this Agreement on any Subject Shares, (b) transfer, sell, assign, gift or otherwise dispose of (collectively, "**Transfer**"), or enter into any contract with respect to any Transfer of the Subject Shares or any interest therein, (c) grant or permit the grant of any proxy, power of attorney or other authorization in or with respect to the Subject Shares, (d) deposit or permit the deposit of the Subject Shares into a voting trust or enter into a voting agreement or arrangement with respect to the Subject Shares, or (e) take any action that, to the knowledge of the Stockholder, would make any representation or warranty of the Stockholder herein untrue or incorrect in any material respect, or have the effect of preventing the Stockholder from performing its obligations hereunder. Notwithstanding the foregoing, (i) the Stockholder may (A) make transfers of the Subject Shares as charitable gifts or donations, (B) make transfers or dispositions of the Subject Shares to any trust for the direct or indirect benefit of the Stockholder or the immediate family of the Stockholder, (C) make transfers or dispositions of the Subject Shares by will, other testamentary document or intestate succession to the legal representative, heir, beneficiary or a member of the immediate family of the Stockholder, (D) make transfers of the Subject Shares to stockholders, direct or indirect affiliates (within the meaning set forth in Rule 405 under the Securities Act), current or former partners (general or limited), members or managers of the Stockholder, as applicable, or to the estates of any such stockholders, affiliates, partners, members or managers, or to another corporation, partnership, limited liability company or other business entity that controls, is controlled by or is under common control with the Stockholder, (E) transfers that occur by operation of law pursuant to a qualified domestic order or in connection with a divorce settlement, (F) transfers or dispositions not involving a change in beneficial ownership, (G) if the Stockholder is a trust, make transfers or dispositions to any beneficiary of the Stockholder or the estate of any such beneficiary, provided that, in each case, the transferee agrees in writing to be bound by the terms and conditions of this Agreement and either the Stockholder or the transferee provides NewLink with a copy of such agreement promptly upon consummation of any such Transfer and (ii) the Stockholder may take all actions reasonably necessary to consummate the Contemplated Transactions, including, without limitation, effecting the Nasdaq Reverse Split.

1.3. **No Exercise of Appraisal Rights; Waivers.** The Stockholder hereby (a) waives and agrees not to exercise any dissenters' or appraisal rights, or other similar rights, with respect to any Subject Shares that may arise in connection with the Contemplated Transactions and (b) agrees that it will not bring, commence, institute, maintain, prosecute, participate in or voluntarily aid any action, claim, suit or cause of action, in law or in equity, in any court or before any Governmental Body, which (i) challenges the validity of or seeks to enjoin the operation of any provision of this Agreement or (ii) alleges that the execution and delivery of this Agreement by the Stockholder, or the approval of the Merger Agreement by the NewLink Board of Directors, breaches any fiduciary duty of the NewLink Board of Directors or any member thereof; *provided, that* the Stockholder may defend against, contest or settle any such action, claim, suit or cause of action brought against the Stockholder that relates solely to the Stockholder's capacity as a director, officer or securityholder of NewLink.

1.4. **Documentation and Information.** The Stockholder shall permit and hereby authorizes NewLink and Lumos to publish and disclose in all documents and schedules filed with the SEC, and any other disclosure document that NewLink or Lumos reasonably determines to be required by applicable law in connection with the Merger and any transactions contemplated by the Merger Agreement, the Stockholder's identity and ownership of the Subject Shares and the nature of the Stockholder's commitments and obligations under this Agreement; provided that NewLink or Lumos, as the case may be, shall afford the Stockholder reasonable advance notice to review and comment on such disclosure. NewLink is an intended third-party beneficiary of this [Section 1.4](#).

1.5. **Irrevocable Proxy.** The Stockholder hereby revokes (or agrees to cause to be revoked) any proxies that the Stockholder has heretofore granted with respect to the Subject Shares. The Stockholder hereby irrevocably appoints Lumos as attorney-in-fact and proxy for and on behalf of the Stockholder, for and in the name, place and stead of the Stockholder, to: (a) attend any and all meetings of NewLink Stockholders held for the matters addressed in [Section 1.1](#), (b) vote, express consent or dissent or issue instructions to the record holder to vote the Subject Shares solely in furtherance of the provisions of [Section 1.1](#) at any and all meetings of NewLink Stockholders or in connection with any action sought to be taken by written consent of NewLink Stockholders without a meeting and (c) grant or withhold, or issue instructions to the record holder to grant or withhold, consistent with the provisions of [Section 1.1](#), all written consents with respect to the Subject Shares at any and all meetings of NewLink Stockholders or in connection with any action sought to be taken by written consent of NewLink Stockholders without a meeting, in any case solely in furtherance of the provisions of [Section 1.1](#). Lumos agrees not to exercise the proxy granted herein for any purpose other than the purposes described in this Agreement. The foregoing proxy shall be deemed to be a proxy coupled with an interest, is irrevocable (and as such shall survive and not be affected by the death, incapacity, mental illness or insanity of the Stockholder, as applicable) until the termination of the Merger Agreement and shall not be terminated by operation of law or upon the occurrence of any other event other than the termination of this Agreement pursuant to [Section 4.2](#). The Stockholder authorizes such attorney and proxy to substitute any other Person to act hereunder, to revoke any substitution and to file this proxy and any substitution or revocation with the Secretary of NewLink. The Stockholder hereby affirms that the proxy set forth in this [Section 1.5](#) is given in connection with and granted in consideration of and as an inducement to Lumos to enter into the Merger Agreement and that such proxy is given to secure the obligations of the Stockholder under [Section 1.1](#). The proxy set forth in this [Section 1.5](#) is executed and intended to be irrevocable, subject, however, to its automatic termination upon the termination of this Agreement pursuant to [Section 4.2](#). With respect to any Subject Shares that are owned beneficially by the Stockholder but are not held of record by the Stockholder, the Stockholder shall take all action necessary to cause the record holder of such Subject Shares to grant the irrevocable proxy and take all other actions provided for in this [Section 1.5](#) with respect to such Subject Shares.

1.6. **No Solicitation of Transactions.** The Stockholder shall not knowingly, directly or indirectly, through any officer, director, agent or otherwise, (a) solicit, initiate, respond to or knowingly take any action to facilitate or encourage any inquiries or the communication, making, submission or announcement of any Acquisition Proposal or Acquisition Inquiry or take any action that could reasonably be expected to lead to an Acquisition Proposal or Acquisition Inquiry; (b) enter into or participate in any discussions or negotiations with any Person with respect to any Acquisition Proposal or Acquisition Inquiry; (c) furnish any information regarding such party to any Person in connection with, in response to, relating to or for the purpose of assisting with or facilitating an Acquisition Proposal or Acquisition Inquiry; or (d) approve, endorse or recommend any Acquisition Proposal. The Stockholder hereby represents and warrants that he, she or it has read [Section 4.4](#) of the Merger Agreement and agrees not to engage in any actions prohibited thereby.

1.7. **No Ownership Interest.** Nothing contained in this Agreement will be deemed to vest in Lumos any direct or indirect ownership or incidents of ownership of or with respect to the Subject Shares. All rights, ownership and economic benefits of and relating to the Subject Shares will remain and belong to Stockholder, and Lumos will have no authority to manage, direct, superintend, restrict, regulate, govern or administer any of the policies or operations of NewLink or exercise any power or authority to direct Stockholder in the voting of any of the Subject Shares, except as otherwise expressly provided herein with respect to the Subject Shares and except as otherwise expressly provided in the Merger Agreement.

ARTICLE II

REPRESENTATIONS AND WARRANTIES OF THE STOCKHOLDER

The Stockholder represents and warrants to Lumos that:

2.1. **Organization; Authorization; Binding Agreement.** The Stockholder, if not a natural person, is duly incorporated or organized, as applicable, validly existing and in good standing under the laws of its jurisdiction of incorporation or organization. The Stockholder has full legal capacity and power, right and authority to execute and deliver this Agreement and to perform his, her or its obligations hereunder and to consummate the transactions contemplated hereby. This Agreement has been duly and validly executed and delivered by the Stockholder, and constitutes a valid and binding obligation of the Stockholder enforceable against the Stockholder in accordance with its terms, subject to (a) laws of general application relating to bankruptcy, insolvency and the relief of debtors and (b) laws of general application relating to bankruptcy, insolvency, the relief of debtors, fraudulent transfer, reorganization, moratorium and other similar laws of general applicability relating to or affecting creditor's rights (the "**Enforceability Exceptions**").

2.2. **Ownership of Subject Shares; Total Shares.** The Stockholder is the record or beneficial owner (as defined in Rule 13d-3 under the Exchange Act) of the Subject Shares and has good and marketable title to the Subject Shares free and clear of any Encumbrances (including any restriction on the right to vote or otherwise transfer the Subject Shares), except (a) as provided hereunder, (b) pursuant to any applicable restrictions on transfer under the Securities Act, and (c) subject to any risk of forfeiture with respect to any shares of Common Stock granted to the Stockholder under an employee benefit plan of NewLink. The Subject Shares listed on Schedule A opposite the Stockholder's name constitute all of the shares of Common Stock owned by the Stockholder as of the date hereof. No Person has any contractual or other right or obligation to purchase or otherwise acquire any of the Subject Shares.

2.3. **Voting Power.** The Stockholder has full voting power, with respect to the Subject Shares, and full power of disposition, full power to issue instructions with respect to the matters set forth herein and full power to agree to all of the matters set forth in this Agreement, in each case, with respect to all of the Subject Shares. None of the Subject Shares are subject to any proxy, voting trust or other agreement or arrangement with respect to the voting of the Subject Shares except as provided hereunder.

2.4. **Reliance.** The Stockholder has had the opportunity to review the Merger Agreement and this Agreement with counsel of the Stockholder's own choosing. The Stockholder understands and acknowledges that Lumos is entering into the Merger Agreement in reliance upon the Stockholder's execution, delivery and performance of this Agreement.

2.5. **Absence of Litigation.** With respect to the Stockholder, as of the date hereof, there is no action, suit, investigation or proceeding pending against, or, to the knowledge of the Stockholder, threatened in writing against, the Stockholder or any of the Stockholder's properties or assets (including the Subject Shares) that could reasonably be expected to prevent, delay or impair the ability of the Stockholder to perform its obligations hereunder or to consummate the transactions contemplated hereby.

2.6. **No Conflicts.** Neither the execution and delivery of this Agreement, nor the consummation of the transactions contemplated hereby, nor compliance with the terms hereof, will violate, conflict with or result in a breach of, or constitute a default (with or without notice or lapse of time or both) under any provision of, any trust agreement, loan or credit agreement, note, bond, mortgage, indenture, lease or other agreement, instrument, permit, concession, franchise, license, judgment, order, notice, decree, statute, law, ordinance, rule or regulation applicable to the Stockholder or to the Stockholder's property or assets.

ARTICLE III

REPRESENTATIONS AND WARRANTIES OF LUMOS

Lumos represents and warrants to the Stockholder that:

3.1. **Organization; Authorization.** Lumos is a corporation duly incorporated, validly existing and in good standing under the laws of the State of Delaware. The consummation of the transactions contemplated hereby is within Lumos's corporate powers and have been duly authorized by all necessary corporate actions on the part of Lumos. Lumos has full power and authority to execute, deliver and perform this Agreement.

3.2. **Binding Agreement.** This Agreement has been duly authorized, executed and delivered by Lumos and constitutes a valid and binding obligation of Lumos enforceable against Lumos in accordance with its terms, subject to the Enforceability Exceptions.

ARTICLE IV

MISCELLANEOUS

4.1. **Notices.** All notices, requests and other communications to either party hereunder shall be in writing (including facsimile transmission or electronic mail) and shall be given, (a) if to Lumos, in accordance with the provisions of the Merger Agreement and (b) if to the Stockholder, to the Stockholder's address, electronic mail address or facsimile number set forth on a signature page hereto, or to such other address, electronic address or facsimile number as the Stockholder may hereafter specify in writing to Lumos for the purpose by notice to Lumos.

4.2. **Termination.** This Agreement shall terminate automatically, without any notice or other action by any Person, upon the earlier of (a) the termination of the Merger Agreement in accordance with its terms and (b) the Effective Time. Upon termination of this Agreement, neither party shall have any further obligations or liabilities under this Agreement; *provided, however*, that (i) nothing set forth in this [Section 4.2](#) shall relieve either party from liability for any breach of this Agreement prior to termination hereof, and (ii) the provisions of this [Article IV](#) shall survive any termination of this Agreement.

4.3. **Amendments and Waivers.** Any provision of this Agreement may be amended or waived if such amendment or waiver is in writing and is signed, in the case of an amendment, by Stockholder and Lumos, in the case of a waiver, by the party against whom the waiver is to be effective. No failure or delay by either party in exercising any right, power or privilege hereunder shall operate as a waiver thereof nor shall any single or partial exercise thereof preclude any other or further exercise thereof or the exercise of any other right, power or privilege.

4.4. **Binding Effect; Benefit; Assignment.** The provisions of this Agreement shall be binding upon and shall inure to the benefit of the parties hereto and their respective successors and assigns. Except as set forth in [Section 1.4](#), no provision of this Agreement is intended to confer any rights, benefits, remedies, obligations or liabilities hereunder upon any person other than the parties hereto and their respective successors and assigns. Neither party may assign, delegate or otherwise transfer any of its rights or obligations under this Agreement without the consent of the other party hereto, except that Lumos may transfer or assign its rights and obligations under this Agreement, in whole or from time to time in part, to one or more of its Affiliates at any time; provided, that such transfer or assignment shall not relieve Lumos of any of its obligations hereunder.

4.5. **Governing Law; Jurisdiction.** This Agreement shall be governed by, and construed in accordance with, the Laws of the State of Delaware, regardless of the Laws that might otherwise govern under applicable principles of conflicts of Laws. In any action or proceeding between any of the parties arising out of or relating to this Agreement, each of the parties: (a) irrevocably and unconditionally consents and submits to the exclusive jurisdiction and venue of the Court of Chancery of the State of Delaware or, to the extent such court does not have subject matter jurisdiction, the United States District Court for the District of Delaware or, to the extent that neither of the foregoing courts has jurisdiction, the Superior Court of the State of Delaware; (b) agrees that all claims in respect of such action or proceeding shall be heard and determined exclusively in accordance with clause (a) of this **Section 4.5**; (c) waives any objection to laying venue in any such action or proceeding in such courts; (d) waives any objection that such courts are an inconvenient forum or do not have jurisdiction over any party; and (e) irrevocably and unconditionally waives the right to trial by jury.

4.6. **Counterparts.** This Agreement may be executed in several counterparts, each of which shall be deemed an original and all of which shall constitute one and the same instrument. The exchange of a fully executed Agreement (in counterparts or otherwise) by all parties by facsimile or electronic transmission in .PDF format shall be sufficient to bind the parties to the terms and conditions of this Agreement.

4.7. **Entire Agreement.** This Agreement constitutes the entire agreement and supersedes all prior agreements and understandings, both written and oral, among or between any of the parties with respect to the subject matter hereof and thereof.

4.8. **Severability.** Any term or provision of this Agreement that is invalid or unenforceable in any situation in any jurisdiction shall not affect the validity or enforceability of the remaining terms and provisions of this Agreement or the validity or enforceability of the offending term or provision in any other situation or in any other jurisdiction. If a final judgment of a court of competent jurisdiction declares that any term or provision of this Agreement is invalid or unenforceable, the parties hereto agree that the court making such determination will have the power to limit such term or provision, to delete specific words or phrases or to replace such term or provision with a term or provision that is valid and enforceable and that comes closest to expressing the intention of the invalid or unenforceable term or provision, and this Agreement shall be valid and enforceable as so modified. In the event such court does not exercise the power granted to it in the prior sentence, the parties hereto agree to replace such invalid or unenforceable term or provision with a valid and enforceable term or provision that will achieve, to the extent possible, the economic, business and other purposes of such invalid or unenforceable term or provision.

4.9. **Specific Performance.** Any and all remedies herein expressly conferred upon a party will be deemed cumulative with and not exclusive of any other remedy conferred hereby, or by law or equity upon such party, and the exercise by a party of any one remedy will not preclude the exercise of any other remedy. The parties hereto agree that irreparable damage would occur in the event that any of the provisions of this Agreement were not performed in accordance with their specific terms or were otherwise breached. It is accordingly agreed that the parties shall be entitled to an injunction or injunctions to prevent breaches of this Agreement and to enforce specifically the terms and provisions hereof in any federal or state court located in the State of Delaware, this being in addition to any other remedy to which they are entitled at law or in equity, and each of the parties hereto waives any bond, surety or other security that might be required of any other party with respect thereto.

4.10. **Construction.**

(a) For purposes of this Agreement, whenever the context requires: the singular number shall include the plural, and vice versa; the masculine gender shall include the feminine and neuter genders; the feminine gender shall include the masculine and neuter genders; and the neuter gender shall include masculine and feminine genders.

(b) The parties hereto agree that any rule of construction to the effect that ambiguities are to be resolved against the drafting party shall not be applied in the construction or interpretation of this Agreement.

(c) As used in this Agreement, the words “include” and “including,” and variations thereof, shall not be deemed to be terms of limitation, but rather shall be deemed to be followed by the words “without limitation.”

(d) Except as otherwise indicated, all references in this Agreement to “Sections,” “Articles,” and “Schedules” are intended to refer to Sections or Articles of this Agreement and Schedules to this Agreement, respectively.

The bold-faced headings contained in this Agreement are for convenience of reference only, shall not be deemed to be a part of this Agreement and shall not be referred to in connection with the construction or interpretation of this Agreement.

4.11. **Further Assurances.** Each of the parties hereto will execute and deliver, or cause to be executed and delivered, all further documents and instruments and use their respective reasonable best efforts to take, or cause to be taken, all actions and to do, or cause to be done, all things necessary under applicable Laws to perform their respective obligations as expressly set forth under this Agreement.

4.12. **Capacity as Stockholder.** The Stockholder signs this Agreement solely in the Stockholder’s capacity as a Stockholder of NewLink, and not in the Stockholder’s capacity as a director, officer or employee of NewLink or any of its Subsidiaries or in the Stockholder’s capacity as a trustee or fiduciary of any employee benefit plan or trust. Notwithstanding anything herein to the contrary, nothing herein shall in any way restrict a director or officer of NewLink in the exercise of his or her fiduciary duties as a director or officer of NewLink or in his or her capacity as a trustee or fiduciary of any employee benefit plan or trust or prevent or be construed to create any obligation on the part of any director or officer of NewLink or any trustee or fiduciary of any employee benefit plan or trust from taking any action in his or her capacity as such director, officer, trustee or fiduciary.

4.13. **No Agreement Until Executed.** Irrespective of negotiations among the parties or the exchanging of drafts of this Agreement, this Agreement shall not constitute or be deemed to evidence a contract, agreement, arrangement or understanding between the parties hereto unless and until (a) the board of directors of NewLink has approved, for purposes of any applicable anti-takeover laws and regulations, and any applicable provision of NewLink’s organizational documents, the Merger, (b) the Merger Agreement is executed by all parties thereto, and (c) this Agreement is executed by all parties hereto.

(SIGNATURE PAGE FOLLOWS)

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be duly executed as of the date first written above.

LUMOS PHARMA, INC.

By: _____

Name:

Title:

[Signature Page to Support Agreement]

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be duly executed as of the date first written above.

STOCKHOLDER

(Print Name of Stockholder)

(Signature)

*(Name and Title of Signatory, if Signing
on Behalf of an Entity)*

[Signature Page to Support Agreement]

Schedule A

Name of Stockholder

No. Shares of
Common
Stock

AMENDED AND RESTATED BYLAWS
OF
NEWLINK GENETICS CORPORATION
(A DELAWARE CORPORATION)

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ARTICLE I

OFFICES

Section 1. Registered Office. The registered office of the corporation in the State of Delaware shall be in the City of Wilmington, County of New Castle.

Section 2. Other Offices. The corporation shall also have and maintain an office or principal place of business at such place as may be fixed by the Board of Directors, and may also have offices at such other places, both within and without the State of Delaware as the Board of Directors may from time to time determine or the business of the corporation may require.

ARTICLE II

CORPORATE SEAL

Section 3. Corporate Seal. The Board of Directors may adopt a corporate seal. The corporate seal shall consist of a die bearing the name of the corporation and the inscription, "Corporate Seal-Delaware." Said seal may be used by causing it or a facsimile thereof to be impressed or affixed or reproduced or otherwise.

ARTICLE III

STOCKHOLDERS' MEETINGS

Section 4. Place Of Meetings. Meetings of the stockholders of the corporation may be held at such place, either within or without the State of Delaware, as may be determined from time to time by the Board of Directors. The Board of Directors may, in its sole discretion, determine that the meeting shall not be held at any place, but may instead be held solely by means of remote communication as provided under the Delaware General Corporation Law ("DGCL").

Section 5. Annual Meetings.

(a) The annual meeting of the stockholders of the corporation, for the purpose of election of directors and for such other business as may properly come before it, shall be held on such date and at such time as may be designated from time to time by the Board of Directors. Nominations of persons for election to the Board of Directors of the corporation and the proposal of business to be considered by the stockholders may be made at an annual meeting of stockholders: (i) pursuant to the corporation's notice of meeting of stockholders (with respect to business other than nominations); (ii) brought specifically by or at the direction of the Board of Directors; or (iii) by any stockholder of the corporation who was a stockholder of record at the time of giving the stockholder's notice provided for in Section 5(b) below, who is entitled to vote at the meeting and who complied with the notice procedures set forth in Section 5. For the avoidance of doubt, clause (iii) above shall be the exclusive means for a stockholder to make nominations and submit other business (other than matters properly included in the corporation's notice of meeting of stockholders and proxy statement under Rule 14a-8 under the Securities Exchange Act of 1934, as amended, and the rules and regulations thereunder (the "1934 Act")) before an annual meeting of stockholders.

(b) At an annual meeting of the stockholders, only such business shall be conducted as is a proper matter for stockholder action under Delaware law and as shall have been properly brought before the meeting.

(i) For nominations for the election to the Board of Directors to be properly brought before an annual meeting by a stockholder pursuant to clause (iii) of Section 5(a) of these Bylaws, the stockholder must deliver written notice to the Secretary at the principal executive offices of the corporation on a timely basis as set forth in Section 5(b)(iii) and must update and supplement such written notice on a timely basis as set forth in Section 5(c). Such stockholder's notice shall set forth: (A) as to each nominee such stockholder proposes to nominate at the meeting: (1) the name, age, business address and residence address of such nominee, (2) the principal occupation or employment of such nominee, (3) the class and number of shares of each class of capital stock of the corporation which are owned of record and beneficially by such nominee, (4) the date or dates on which such shares were acquired and the investment intent of such acquisition, (5) with respect to each nominee for election or re-election to the Board of Directors, include a completed and signed questionnaire, representation and agreement required by Section 5(e) of these Bylaws, and (7) such other information concerning such nominee as would be required to be disclosed in a proxy statement soliciting proxies for the election of such nominee as a director in an election contest (even if an election contest is not involved), or that is otherwise required to be disclosed pursuant to Section 14 of the 1934 Act and the rules and regulations promulgated thereunder (including such person's written consent to being named as a nominee and to serving as a director if elected); and (B) the information required by Section 5(b)(iv). The corporation may require any proposed nominee to furnish such other information as it may reasonably require to determine the eligibility of such proposed nominee to serve as an independent director of the corporation or that could be material to a reasonable stockholder's understanding of the independence, or lack thereof, of such proposed nominee.

(ii) Other than proposals sought to be included in the corporation's proxy materials pursuant to Rule 14(a)-8 under the 1934 Act, for business other than nominations for the election to the Board of Directors to be properly brought before an annual meeting by a stockholder pursuant to clause (iii) of Section 5(a) of these Bylaws, the stockholder must deliver written notice to the Secretary at the principal executive offices of the corporation on a timely basis as set forth in Section 5(b)(iii), and must update and supplement such written notice on a timely basis as set forth in Section 5(c). Such stockholder's notice shall set forth: (A) as to each matter such stockholder proposes to bring before the meeting, a brief description of the business desired to be brought before the meeting, the reasons for conducting such business at the meeting, and any material interest (including any anticipated benefit of such business to any Proponent (as defined below) other than solely as a result of its ownership of the corporation's capital stock, that is material to any Proponent individually, or to the Proponents in the aggregate) in such business of any Proponent; and (B) the information required by Section 5(b)(iv).

(iii) To be timely, the written notice required by Section 5(b)(i) or 5(b)(ii) must be received by the Secretary at the principal executive offices of the corporation not later than the close of business on the ninetieth (90th) day nor earlier than the close of business on the one hundred twentieth (120th) day prior to the first anniversary of the preceding year's annual

meeting; *provided, however*, that, subject to the last sentence of this Section 5(b)(iii), in the event that the date of the annual meeting is advanced more than thirty (30) days prior to or delayed by more than thirty (30) days after the anniversary of the preceding year's annual meeting, notice by the stockholder to be timely must be so received not earlier than the close of business on the one hundred twentieth (120th) day prior to such annual meeting and not later than the close of business on the later of the ninetieth (90th) day prior to such annual meeting or the tenth (10th) day following the day on which public announcement of the date of such meeting is first made. In no event shall an adjournment or a postponement of an annual meeting for which notice has been given, or the public announcement thereof has been made, commence a new time period for the giving of a stockholder's notice as described above.

(iv) The written notice required by Section 5(b)(i) or 5(b)(ii) shall also set forth, as of the date of the notice and as to the stockholder giving the notice and the beneficial owner, if any, on whose behalf the nomination or proposal is made (each, a "Proponent" and collectively, the "Proponents"): (A) the name and address of each Proponent, as they appear on the corporation's books; (B) the class, series and number of shares of the corporation that are owned beneficially and of record by each Proponent; (C) a description of any agreement, arrangement or understanding (whether oral or in writing) with respect to such nomination or proposal between or among any Proponent and any of its affiliates or associates, and any others (including their names) acting in concert, or otherwise under the agreement, arrangement or understanding, with any of the foregoing; (D) a representation that the Proponents are holders of record or beneficial owners, as the case may be, of shares of the corporation entitled to vote at the meeting and intend to appear in person or by proxy at the meeting to nominate the person or persons specified in the notice (with respect to a notice under Section 5(b)(i)) or to propose the business that is specified in the notice (with respect to a notice under Section 5(b)(ii)); (E) a representation as to whether the Proponents intend to deliver a proxy statement and form of proxy to holders of a sufficient number of holders of the corporation's voting shares to elect such nominee or nominees (with respect to a notice under Section 5(b)(i)) or to carry such proposal (with respect to a notice under Section 5(b)(ii)); (F) to the extent known by any Proponent, the name and address of any other stockholder supporting the proposal on the date of such stockholder's notice; and (G) a description of all Derivative Transactions (as defined below) by each Proponent during the previous twelve (12) month period, including the date of the transactions and the class, series and number of securities involved in, and the material economic terms of, such Derivative Transactions.

For purposes of Sections 5 and 6, a "Derivative Transaction" means any agreement, arrangement, interest or understanding entered into by, or on behalf or for the benefit of, any Proponent or any of its affiliates or associates, whether record or beneficial:

- (w) the value of which is derived in whole or in part from the value of any class or series of shares or other securities of the corporation,
- (x) which otherwise provides any direct or indirect opportunity to gain or share in any gain derived from a change in the value of securities of the corporation,
- (y) the effect or intent of which is to mitigate loss, manage risk or benefit of security value or price changes, or

(z) which provides the right to vote or increase or decrease the voting power of, such Proponent, or any of its affiliates or associates, with respect to any securities of the corporation,

which agreement, arrangement, interest or understanding may include, without limitation, any option, warrant, debt position, note, bond, convertible security, swap, stock appreciation right, short position, profit interest, hedge, right to dividends, voting agreement, performance-related fee or arrangement to borrow or lend shares (whether or not subject to payment, settlement, exercise or conversion in any such class or series), and any proportionate interest of such Proponent in the securities of the corporation held by any general or limited partnership, or any limited liability company, of which such Proponent is, directly or indirectly, a general partner or managing member.

(c) A stockholder providing written notice required by Section 5(b)(i) or (ii) shall update and supplement such notice in writing, if necessary, so that the information provided or required to be provided in such notice is true and correct in all material respects as of (i) the record date for the meeting and (ii) the date that is five (5) business days prior to the meeting and, in the event of any adjournment or postponement thereof, five (5) business days prior to such adjourned or postponed meeting. In the case of an update and supplement pursuant to clause (i) of this Section 5(c), such update and supplement shall be received by the Secretary at the principal executive offices of the corporation not later than five (5) business days after the record date for the meeting. In the case of an update and supplement pursuant to clause (ii) of this Section 5(c), such update and supplement shall be received by the Secretary at the principal executive offices of the corporation not later than two (2) business days prior to the date for the meeting, and, in the event of any adjournment or postponement thereof, two (2) business days prior to such adjourned or postponed meeting.

(d) Notwithstanding anything in Section 5(b)(iii) to the contrary, in the event that the number of directors in an Expiring Class is increased and there is no public announcement of the appointment of a director to such class, or, if no appointment was made, of the vacancy in such class, made by the corporation at least ten (10) days before the last day a stockholder may deliver a notice of nomination in accordance with Section 5(b)(iii), a stockholder's notice required by this Section 5 and which complies with the requirements in Section 5(b)(i), other than the timing requirements in Section 5(b)(iii), shall also be considered timely, but only with respect to nominees for any new positions in such Expiring Class created by such increase, if it shall be received by the Secretary at the principal executive offices of the corporation not later than the close of business on the tenth (10th) day following the day on which such public announcement is first made by the corporation. For purposes of this section, an "Expiring Class" shall mean a class of directors whose term shall expire at the next annual meeting of stockholders.

(e) To be eligible to be a nominee for election or re-election as a director of the corporation pursuant to a nomination under clause (iii) of Section 5(a), such proposed nominee or a person on such proposed nominee's behalf must deliver (in accordance with the time periods prescribed for delivery of notice under Section 5(b)(iii) or 5(d), as applicable) to the Secretary at the principal executive offices of the corporation a written questionnaire with respect to the background and qualification of such proposed nominee and the background of any other person

or entity on whose behalf the nomination is being made (which questionnaire shall be provided by the Secretary upon written request) and a written representation and agreement (in the form provided by the Secretary upon written request) that such person (i) is not and will not become a party to (A) any agreement, arrangement or understanding with, and has not given any commitment or assurance to, any person or entity as to how such person, if elected as a director of the corporation, will act or vote on any issue or question (a "Voting Commitment") that has not been disclosed to the corporation in the questionnaire or (B) any Voting Commitment that could limit or interfere with such person's ability to comply, if elected as a director of the corporation, with such person's fiduciary duties under applicable law; (ii) is not and will not become a party to any agreement, arrangement or understanding with any person or entity other than the corporation with respect to any direct or indirect compensation, reimbursement or indemnification in connection with service or action as a director of the corporation that has not been disclosed therein; (iii) in such person's individual capacity and on behalf of any person or entity on whose behalf the nomination is being made, would be in compliance, if elected as a director of the corporation, and will comply with, all applicable publicly disclosed corporate governance, conflict of interest, confidentiality and stock ownership and trading policies and guidelines of the corporation.

(f) A person shall not be eligible for election or re-election as a director unless the person is nominated either in accordance with clause (ii) of Section 5(a), or in accordance with clause (iii) of Section 5(a). Except as otherwise required by law, the chairman of the meeting shall have the power and duty to determine whether a nomination or any business proposed to be brought before the meeting was made, or proposed, as the case may be, in accordance with the procedures set forth in these Bylaws and, if any proposed nomination or business is not in compliance with these Bylaws, or the Proponent does not act in accordance with the representations in Sections 5(b)(iv)(D) and 5(b)(iv)(E), to declare that such proposal or nomination shall not be presented for stockholder action at the meeting and shall be disregarded, notwithstanding that proxies in respect of such nominations or such business may have been solicited or received.

(g) Notwithstanding the foregoing provisions of this Section 5, in order to include information with respect to a stockholder proposal in the proxy statement and form of proxy for a stockholders' meeting, a stockholder must also comply with all applicable requirements of the 1934 Act and the rules and regulations thereunder. Nothing in these Bylaws shall be deemed to affect any rights of stockholders to request inclusion of proposals in the corporation's proxy statement pursuant to Rule 14a-8 under the 1934 Act; *provided, however*, that any references in these Bylaws to the 1934 Act or the rules and regulations thereunder are not intended to and shall not limit the requirements applicable to proposals and/or nominations to be considered pursuant to Section 5(a)(iii) of these Bylaws.

(h) For purposes of Sections 5 and 6,

(i) "public announcement" shall mean disclosure in a press release reported by the Dow Jones News Service, Associated Press or comparable national news service or in a document publicly filed by the corporation with the Securities and Exchange Commission pursuant to Section 13, 14 or 15(d) of the 1934 Act; and

(ii) “affiliates” and “associates” shall have the meanings set forth in Rule 405 under the Securities Act of 1933, as amended (the “1933 Act”).

Section 6. Special Meetings.

(a) Special meetings of the stockholders of the corporation may be called, for any purpose as is a proper matter for stockholder action under Delaware law, by (i) the Chairman of the Board of Directors, (ii) the Chief Executive Officer, or (iii) the Board of Directors pursuant to a resolution adopted by a majority of the total number of authorized directors (whether or not there exist any vacancies in previously authorized directorships at the time any such resolution is presented to the Board of Directors for adoption).

(b) The Board of Directors shall determine the time and place, if any, of such special meeting. Upon determination of the time and place, if any, of the meeting, the Secretary shall cause a notice of meeting to be given to the stockholders entitled to vote, in accordance with the provisions of Section 7 of these Bylaws. No business may be transacted at such special meeting otherwise than specified in the notice of meeting.

(c) Nominations of persons for election to the Board of Directors may be made at a special meeting of stockholders at which directors are to be elected (i) by or at the direction of the Board of Directors or (ii) by any stockholder of the corporation who is a stockholder of record at the time of giving notice provided for in this paragraph, who shall be entitled to vote at the meeting and who delivers written notice to the Secretary of the corporation setting forth the information required by Section 5(b)(i). In the event the corporation calls a special meeting of stockholders for the purpose of electing one or more directors to the Board of Directors, any such stockholder of record may nominate a person or persons (as the case may be), for election to such position(s) as specified in the corporation’s notice of meeting, if written notice setting forth the information required by Section 5(b)(i) of these Bylaws shall be received by the Secretary at the principal executive offices of the corporation not later than the close of business on the later of the ninetieth (90th) day prior to such meeting or the tenth (10th) day following the day on which public announcement is first made of the date of the special meeting and of the nominees proposed by the Board of Directors to be elected at such meeting. The stockholder shall also update and supplement such information as required under Section 5(c). In no event shall an adjournment or a postponement of a special meeting for which notice has been given, or the public announcement thereof has been made, commence a new time period for the giving of a stockholder’s notice as described above.

(d) Notwithstanding the foregoing provisions of this Section 6, a stockholder must also comply with all applicable requirements of the 1934 Act and the rules and regulations thereunder with respect to matters set forth in this Section 6. Nothing in these Bylaws shall be deemed to affect any rights of stockholders to request inclusion of proposals in the corporation’s proxy statement pursuant to Rule 14a-8 under the 1934 Act; *provided, however*, that any references in these Bylaws to the 1934 Act or the rules and regulations thereunder are not intended to and shall not limit the requirements applicable to nominations for the election to the Board of Directors to be considered pursuant to Section 6(c) of these Bylaws.

Section 7. Notice Of Meetings. Except as otherwise provided by law, notice, given in writing or by electronic transmission, of each meeting of stockholders shall be given not less than ten (10) nor more than sixty (60) days before the date of the meeting to each stockholder entitled to vote at such meeting, such notice to specify the place, if any, date and hour, in the case of special meetings, the purpose or purposes of the meeting, and the means of remote communications, if any, by which stockholders and proxy holders may be deemed to be present in person and vote at any such meeting. If mailed, notice is given when deposited in the United States mail, postage prepaid, directed to the stockholder at such stockholder's address as it appears on the records of the corporation. Notice of the time, place, if any, and purpose of any meeting of stockholders may be waived in writing, signed by the person entitled to notice thereof, or by electronic transmission by such person, either before or after such meeting, and will be waived by any stockholder by his attendance thereat in person, by remote communication, if applicable, or by proxy, except when the stockholder attends a meeting for the express purpose of objecting, at the beginning of the meeting, to the transaction of any business because the meeting is not lawfully called or convened. Any stockholder so waiving notice of such meeting shall be bound by the proceedings of any such meeting in all respects as if due notice thereof had been given.

Section 8. Quorum. At all meetings of stockholders, except where otherwise provided by statute or by the Certificate of Incorporation, or by these Bylaws, the presence, in person, by remote communication, if applicable, or by proxy duly authorized, of the holders of a majority of the outstanding shares of stock entitled to vote shall constitute a quorum for the transaction of business. In the absence of a quorum, any meeting of stockholders may be adjourned, from time to time, either by the chairman of the meeting or by vote of the holders of a majority of the shares represented thereat, but no other business shall be transacted at such meeting. The stockholders present at a duly called or convened meeting, at which a quorum is present, may continue to transact business until adjournment, notwithstanding the withdrawal of enough stockholders to leave less than a quorum. Except as otherwise provided by statute or by applicable stock exchange rules, or by the Certificate of Incorporation or these Bylaws, in all matters other than the election of directors, the affirmative vote of the majority of shares present in person, by remote communication, if applicable, or represented by proxy at the meeting and entitled to vote generally on the subject matter shall be the act of the stockholders. Except as otherwise provided by statute, the Certificate of Incorporation or these Bylaws, directors shall be elected by a plurality of the votes of the shares present in person, by remote communication, if applicable, or represented by proxy at the meeting and entitled to vote generally on the election of directors. Where a separate vote by a class or classes or series is required, except where otherwise provided by the statute or by the Certificate of Incorporation or these Bylaws, a majority of the outstanding shares of such class or classes or series, present in person, by remote communication, if applicable, or represented by proxy duly authorized, shall constitute a quorum entitled to take action with respect to that vote on that matter. Except where otherwise provided by statute or by the Certificate of Incorporation or these Bylaws, the affirmative vote of the majority (plurality, in the case of the election of directors) of shares of such class or classes or series present in person, by remote communication, if applicable, or represented by proxy at the meeting shall be the act of such class or classes or series.

Section 9. Adjournment And Notice Of Adjourned Meetings. Any meeting of stockholders, whether annual or special, may be adjourned from time to time either by the chairman

of the meeting or by the vote of a majority of the shares present in person, by remote communication, if applicable, or represented by proxy at the meeting. When a meeting is adjourned to another time or place, if any, notice need not be given of the adjourned meeting if the time and place, if any, thereof are announced at the meeting at which the adjournment is taken. At the adjourned meeting, the corporation may transact any business which might have been transacted at the original meeting. If the adjournment is for more than thirty (30) days or if after the adjournment a new record date is fixed for the adjourned meeting, a notice of the adjourned meeting shall be given to each stockholder of record entitled to vote at the meeting.

Section 10. Voting Rights. For the purpose of determining those stockholders entitled to vote at any meeting of the stockholders, except as otherwise provided by law, only persons in whose names shares stand on the stock records of the corporation on the record date, as provided in Section 12 of these Bylaws, shall be entitled to vote at any meeting of stockholders. Every person entitled to vote shall have the right to do so either in person, by remote communication, if applicable, or by an agent or agents authorized by a proxy granted in accordance with Delaware law. An agent so appointed need not be a stockholder. No proxy shall be voted after three (3) years from its date of creation unless the proxy provides for a longer period.

Section 11. Joint Owners Of Stock. If shares or other securities having voting power stand of record in the names of two (2) or more persons, whether fiduciaries, members of a partnership, joint tenants, tenants in common, tenants by the entirety, or otherwise, or if two (2) or more persons have the same fiduciary relationship respecting the same shares, unless the Secretary is given written notice to the contrary and is furnished with a copy of the instrument or order appointing them or creating the relationship wherein it is so provided, their acts with respect to voting shall have the following effect: (a) if only one (1) votes, his act binds all; (b) if more than one (1) votes, the act of the majority so voting binds all; (c) if more than one (1) votes, but the vote is evenly split on any particular matter, each faction may vote the securities in question proportionally, or may apply to the Delaware Court of Chancery for relief as provided in the DGCL, Section 217(b). If the instrument filed with the Secretary shows that any such tenancy is held in unequal interests, a majority or even-split for the purpose of subsection (c) shall be a majority or even-split in interest.

Section 12. List Of Stockholders. The Secretary shall prepare and make, at least ten (10) days before every meeting of stockholders, a complete list of the stockholders entitled to vote at said meeting, arranged in alphabetical order, showing the address of each stockholder and the number of shares registered in the name of each stockholder. Such list shall be open to the examination of any stockholder, for any purpose germane to the meeting, (a) on a reasonably accessible electronic network, provided that the information required to gain access to such list is provided with the notice of the meeting, or (b) during ordinary business hours, at the principal place of business of the corporation. In the event that the corporation determines to make the list available on an electronic network, the corporation may take reasonable steps to ensure that such information is available only to stockholders of the corporation. The list shall be open to examination of any stockholder during the time of the meeting as provided by law.

Section 13. Action Without Meeting.

No action shall be taken by the stockholders except at an annual or special meeting of stockholders called in accordance with these Bylaws, and no action shall be taken by the stockholders by written consent or by electronic transmission.

Section 14. Organization.

(a) At every meeting of stockholders, the Chairman of the Board of Directors, or, if a Chairman has not been appointed or is absent, the President, or, if the President is absent, a chairman of the meeting chosen by a majority in interest of the stockholders entitled to vote, present in person or by proxy, shall act as chairman. The Secretary, or, in his or her absence, an Assistant Secretary directed to do so by the President, shall act as secretary of the meeting.

(b) The Board of Directors of the corporation shall be entitled to make such rules or regulations for the conduct of meetings of stockholders as it shall deem necessary, appropriate or convenient. Subject to such rules and regulations of the Board of Directors, if any, the chairman of the meeting shall have the right and authority to prescribe such rules, regulations and procedures and to do all such acts as, in the judgment of such chairman, are necessary, appropriate or convenient for the proper conduct of the meeting, including, without limitation, establishing an agenda or order of business for the meeting, rules and procedures for maintaining order at the meeting and the safety of those present, limitations on participation in such meeting to stockholders of record of the corporation and their duly authorized and constituted proxies and such other persons as the chairman shall permit, restrictions on entry to the meeting after the time fixed for the commencement thereof, limitations on the time allotted to questions or comments by participants and regulation of the opening and closing of the polls for balloting on matters which are to be voted on by ballot. The date and time of the opening and closing of the polls for each matter upon which the stockholders will vote at the meeting shall be announced at the meeting. Unless and to the extent determined by the Board of Directors or the chairman of the meeting, meetings of stockholders shall not be required to be held in accordance with rules of parliamentary procedure.

ARTICLE IV

DIRECTORS

Section 15. Number And Term Of Office. The authorized number of directors of the corporation shall be fixed in accordance with the Certificate of Incorporation. Directors need not be stockholders unless so required by the Certificate of Incorporation. If for any cause, the directors shall not have been elected at an annual meeting, they may be elected as soon thereafter as convenient at a special meeting of the stockholders called for that purpose in the manner provided in these Bylaws.

Section 16. Powers. The powers of the corporation shall be exercised, its business conducted and its property controlled by the Board of Directors, except as may be otherwise provided by statute or by the Certificate of Incorporation.

Section 17. Classes of Directors. Subject to the rights of the holders of any series of Preferred Stock to elect additional directors under specified circumstances, the directors shall be divided into three classes designated as Class I, Class II and Class III, respectively. The Board of Directors is authorized to assign members of the Board of Directors already in office to such classes at the time the classification becomes effective. At the first annual meeting of stockholders following the initial classification of the Board of Directors, the term of office of the Class I directors shall expire and Class I directors shall be elected for a full term of three years. At the second annual meeting of stockholders following such initial classification, the term of office of the Class II directors shall expire and Class II directors shall be elected for a full term of three years. At the third annual meeting of stockholders following such initial classification, the term of office of the Class III directors shall expire and Class III directors shall be elected for a full term of three years. At each succeeding annual meeting of stockholders, directors shall be elected for a full term of three years to succeed the directors of the class whose terms expire at such annual meeting.

Notwithstanding the foregoing provisions of this section, each director shall serve until his successor is duly elected and qualified or until his earlier death, resignation or removal. No decrease in the number of directors constituting the Board of Directors shall shorten the term of any incumbent director.

Section 18. Vacancies.

(a) Unless otherwise provided in the Certificate of Incorporation, and subject to the rights of the holders of any series of Preferred Stock, any vacancies on the Board of Directors resulting from death, resignation, disqualification, removal or other causes and any newly created directorships resulting from any increase in the number of directors shall, unless the Board of Directors determines by resolution that any such vacancies or newly created directorships shall be filled by stockholders, be filled only by the affirmative vote of a majority of the directors then in office, even though less than a quorum of the Board of Directors, or by a sole remaining director, and not by the stockholders, *provided, however*, that whenever the holders of any class or classes of stock or series thereof are entitled to elect one or more directors by the provisions of the Certificate of Incorporation, vacancies and newly created directorships of such class or classes or series shall, unless the Board of Directors determines by resolution that any such vacancies or newly created directorships shall be filled by stockholders, be filled by a majority of the directors elected by such class or classes or series thereof then in office, or by a sole remaining director so elected, and not by the stockholders. Any director elected in accordance with the preceding sentence shall hold office for the remainder of the full term of the director for which the vacancy was created or occurred and until such director's successor shall have been elected and qualified. A vacancy in the Board of Directors shall be deemed to exist under this Bylaw in the case of the death, removal or resignation of any director.

Section 19. Resignation. Any director may resign at any time by delivering his or her notice in writing or by electronic transmission to the Secretary, such resignation to specify whether it will be effective at a particular time. If no such specification is made, it shall be deemed effective at the time of delivery to the Secretary. When one or more directors shall resign from the Board of Directors, effective at a future date, a majority of the directors then in office, including those who

have so resigned, shall have power to fill such vacancy or vacancies, the vote thereon to take effect when such resignation or resignations shall become effective, and each Director so chosen shall hold office for the unexpired portion of the term of the Director whose place shall be vacated and until his successor shall have been duly elected and qualified.

Section 20. Meetings.

(a) **Regular Meetings.** Unless otherwise restricted by the Certificate of Incorporation, regular meetings of the Board of Directors may be held at any time or date and at any place within or without the State of Delaware which has been designated by the Board of Directors and publicized among all directors, either orally or in writing, by telephone, including a voice-messaging system or other system designed to record and communicate messages, facsimile, telegraph or telex, or by electronic mail or other electronic means. No further notice shall be required for regular meetings of the Board of Directors.

(b) **Special Meetings.** Unless otherwise restricted by the Certificate of Incorporation, special meetings of the Board of Directors may be held at any time and place within or without the State of Delaware whenever called by the Chairman of the Board, the Chief Executive Officer or a majority of the authorized number of directors.

(c) **Meetings by Electronic Communications Equipment.** Any member of the Board of Directors, or of any committee thereof, may participate in a meeting by means of conference telephone or other communications equipment by means of which all persons participating in the meeting can hear each other, and participation in a meeting by such means shall constitute presence in person at such meeting.

(d) **Notice of Special Meetings.** Notice of the time and place of all special meetings of the Board of Directors shall be orally or in writing, by telephone, including a voice messaging system or other system or technology designed to record and communicate messages, facsimile, telegraph or telex, or by electronic mail or other electronic means, during normal business hours, at least twenty-four (24) hours before the date and time of the meeting. If notice is sent by US mail, it shall be sent by first class mail, charges prepaid, at least three (3) days before the date of the meeting. Notice of any meeting may be waived in writing, or by electronic transmission, at any time before or after the meeting and will be waived by any director by attendance thereat, except when the director attends the meeting for the express purpose of objecting, at the beginning of the meeting, to the transaction of any business because the meeting is not lawfully called or convened.

(e) **Waiver of Notice.** The transaction of all business at any meeting of the Board of Directors, or any committee thereof, however called or noticed, or wherever held, shall be as valid as though it had been transacted at a meeting duly held after regular call and notice, if a quorum be present and if, either before or after the meeting, each of the directors not present who did not receive notice shall sign a written waiver of notice or shall waive notice by electronic transmission. All such waivers shall be filed with the corporate records or made a part of the minutes of the meeting.

Section 21. Quorum And Voting.

(a) Unless the Certificate of Incorporation requires a greater number, and except with respect to questions related to indemnification arising under Section 43 for which a quorum shall be one-third of the exact number of directors fixed from time to time, a quorum of the Board of Directors shall consist of a majority of the exact number of directors fixed from time to time by the Board of Directors in accordance with the Certificate of Incorporation; *provided, however*, at any meeting whether a quorum be present or otherwise, a majority of the directors present may adjourn from time to time until the time fixed for the next regular meeting of the Board of Directors, without notice other than by announcement at the meeting.

(b) At each meeting of the Board of Directors at which a quorum is present, all questions and business shall be determined by the affirmative vote of a majority of the directors present, unless a different vote be required by law, the Certificate of Incorporation or these Bylaws.

Section 22. Action Without Meeting. Unless otherwise restricted by the Certificate of Incorporation or these Bylaws, any action required or permitted to be taken at any meeting of the Board of Directors or of any committee thereof may be taken without a meeting, if all members of the Board of Directors or committee, as the case may be, consent thereto in writing or by electronic transmission, and such writing or writings or transmission or transmissions are filed with the minutes of proceedings of the Board of Directors or committee. Such filing shall be in paper form if the minutes are maintained in paper form and shall be in electronic form if the minutes are maintained in electronic form.

Section 23. Fees And Compensation. Directors shall be entitled to such compensation for their services as may be approved by the Board of Directors, including, if so approved, by resolution of the Board of Directors, a fixed sum and expenses of attendance, if any, for attendance at each regular or special meeting of the Board of Directors and at any meeting of a committee of the Board of Directors. Nothing herein contained shall be construed to preclude any director from serving the corporation in any other capacity as an officer, agent, employee, or otherwise and receiving compensation therefor.

Section 24. Committees.

(a) **Executive Committee.** The Board of Directors may appoint an Executive Committee to consist of one (1) or more members of the Board of Directors. The Executive Committee, to the extent permitted by law and provided in the resolution of the Board of Directors shall have and may exercise all the powers and authority of the Board of Directors in the management of the business and affairs of the corporation, and may authorize the seal of the corporation to be affixed to all papers which may require it; but no such committee shall have the power or authority in reference to (i) approving or adopting, or recommending to the stockholders, any action or matter (other than the election or removal of directors) expressly required by the DGCL to be submitted to stockholders for approval, or (ii) adopting, amending or repealing any Bylaw of the corporation.

(b) **Other Committees.** The Board of Directors may, from time to time, appoint such other committees as may be permitted by law. Such other committees appointed by the Board

of Directors shall consist of one (1) or more members of the Board of Directors and shall have such powers and perform such duties as may be prescribed by the resolution or resolutions creating such committees, but in no event shall any such committee have the powers denied to the Executive Committee in these Bylaws.

(c) Term. The Board of Directors, subject to any requirements of any outstanding series of Preferred Stock and the provisions of subsections (a) or (b) of this Section 24, may at any time increase or decrease the number of members of a committee or terminate the existence of a committee. The membership of a committee member shall terminate on the date of his death or voluntary resignation from the committee or from the Board of Directors. The Board of Directors may at any time for any reason remove any individual committee member and the Board of Directors may fill any committee vacancy created by death, resignation, removal or increase in the number of members of the committee. The Board of Directors may designate one or more directors as alternate members of any committee, who may replace any absent or disqualified member at any meeting of the committee, and, in addition, in the absence or disqualification of any member of a committee, the member or members thereof present at any meeting and not disqualified from voting, whether or not he or they constitute a quorum, may unanimously appoint another member of the Board of Directors to act at the meeting in the place of any such absent or disqualified member.

(d) Meetings. Unless the Board of Directors shall otherwise provide, regular meetings of the Executive Committee or any other committee appointed pursuant to this Section 24 shall be held at such times and places as are determined by the Board of Directors, or by any such committee, and when notice thereof has been given to each member of such committee, no further notice of such regular meetings need be given thereafter. Special meetings of any such committee may be held at any place which has been determined from time to time by such committee, and may be called by any Director who is a member of such committee, upon notice to the members of such committee of the time and place of such special meeting given in the manner provided for the giving of notice to members of the Board of Directors of the time and place of special meetings of the Board of Directors. Notice of any special meeting of any committee may be waived in writing or by electronic transmission at any time before or after the meeting and will be waived by any director by attendance thereat, except when the director attends such special meeting for the express purpose of objecting, at the beginning of the meeting, to the transaction of any business because the meeting is not lawfully called or convened. Unless otherwise provided by the Board of Directors in the resolutions authorizing the creation of the committee, a majority of the authorized number of members of any such committee shall constitute a quorum for the transaction of business, and the act of a majority of those present at any meeting at which a quorum is present shall be the act of such committee.

Section 25. Lead Independent Director. The Chairman of the Board of Directors, or if the Chairman is not an independent director, one of the independent directors, may be designated by the Board of Directors as lead independent director to serve until replaced by the Board of Directors ("Lead Independent Director"). The Lead Independent Director will: with the Chairman of the Board of Directors, establish the agenda for regular Board meetings and serve as chairman of Board of Directors meetings in the absence of the Chairman of the Board of Directors; establish

the agenda for meetings of the independent directors; coordinate with the committee chairs regarding meeting agendas and informational requirements; preside over meetings of the independent directors; preside over any portions of meetings of the Board of Directors at which the evaluation or compensation of the Chief Executive Officer is presented or discussed; preside over any portions of meetings of the Board of Directors at which the performance of the Board of Directors is presented or discussed; and perform such other duties as may be established or delegated by the Chairman of the Board of Directors.

Section 26. Organization. At every meeting of the directors, the Chairman of the Board of Directors, or, if a Chairman has not been appointed or is absent, the Lead Independent Director, or if the Lead Independent Director is absent, the Chief Executive Officer (if a director), or, if a Chief Executive Officer is absent, the President (if a director), or if the President is absent, the most senior Vice President (if a director), or, in the absence of any such person, a chairman of the meeting chosen by a majority of the directors present, shall preside over the meeting. The Secretary, or in his absence, any Assistant Secretary or other officer or director directed to do so by the President, shall act as secretary of the meeting.

ARTICLE V

OFFICERS

Section 27. Officers Designated. The officers of the corporation shall include, if and when designated by the Board of Directors, the Chairman of the Board of Directors, the Chief Executive Officer, the President, one or more Vice Presidents, the Secretary, the Chief Financial Officer and the Treasurer. The Board of Directors may also appoint one or more Assistant Secretaries and Assistant Treasurers and such other officers and agents with such powers and duties as it shall deem necessary. The Board of Directors may assign such additional titles to one or more of the officers as it shall deem appropriate. Any one person may hold any number of offices of the corporation at any one time unless specifically prohibited therefrom by law. The salaries and other compensation of the officers of the corporation shall be fixed by or in the manner designated by the Board of Directors.

Section 28. Tenure And Duties Of Officers.

(a) General. All officers shall hold office at the pleasure of the Board of Directors and until their successors shall have been duly elected and qualified, unless sooner removed. Any officer elected or appointed by the Board of Directors may be removed at any time by the Board of Directors. If the office of any officer becomes vacant for any reason, the vacancy may be filled by the Board of Directors.

(b) Duties of Chairman of the Board of Directors. The Chairman of the Board of Directors, when present, shall preside at all meetings of the stockholders and the Board of Directors. The Chairman of the Board of Directors shall perform other duties commonly incident to the office and shall also perform such other duties and have such other powers, as the Board of Directors shall designate from time to time.

(c) Duties of Chief Executive Officer. The Chief Executive Officer shall preside at all meetings of the stockholders and at all meetings of the Board of Directors, unless the Chairman of the Board of Directors or the Lead Independent Director has been appointed and is present. Unless an officer has been appointed Chief Executive Officer of the corporation, the President shall be the chief executive officer of the corporation and shall, subject to the control of the Board of Directors, have general supervision, direction and control of the business and officers of the corporation. To the extent that a Chief Executive Officer has been appointed and no President has been appointed, all references in these Bylaws to the President shall be deemed references to the Chief Executive Officer. The Chief Executive Officer shall perform other duties commonly incident to the office and shall also perform such other duties and have such other powers, as the Board of Directors shall designate from time to time.

(d) Duties of President. The President shall preside at all meetings of the stockholders and at all meetings of the Board of Directors, unless the Chairman of the Board of Directors, the Lead Independent Director, or the Chief Executive Officer has been appointed and is present. Unless another officer has been appointed Chief Executive Officer of the corporation, the President shall be the chief executive officer of the corporation and shall, subject to the control of the Board of Directors, have general supervision, direction and control of the business and officers of the corporation. The President shall perform other duties commonly incident to the office and shall also perform such other duties and have such other powers, as the Board of Directors shall designate from time to time.

(e) Duties of Vice Presidents. The Vice Presidents may assume and perform the duties of the President in the absence or disability of the President or whenever the office of President is vacant. The Vice Presidents shall perform other duties commonly incident to their office and shall also perform such other duties and have such other powers as the Board of Directors or the Chief Executive Officer, or, if the Chief Executive Officer has not been appointed or is absent, the President shall designate from time to time.

(f) Duties of Secretary. The Secretary shall attend all meetings of the stockholders and of the Board of Directors and shall record all acts and proceedings thereof in the minute book of the corporation. The Secretary shall give notice in conformity with these Bylaws of all meetings of the stockholders and of all meetings of the Board of Directors and any committee thereof requiring notice. The Secretary shall perform all other duties provided for in these Bylaws and other duties commonly incident to the office and shall also perform such other duties and have such other powers, as the Board of Directors shall designate from time to time. The President may direct any Assistant Secretary or other officer to assume and perform the duties of the Secretary in the absence or disability of the Secretary, and each Assistant Secretary shall perform other duties commonly incident to the office and shall also perform such other duties and have such other powers as the Board of Directors or the President shall designate from time to time.

(g) Duties of Chief Financial Officer. The Chief Financial Officer shall keep or cause to be kept the books of account of the corporation in a thorough and proper manner and shall render statements of the financial affairs of the corporation in such form and as often as required by the Board of Directors or the President. The Chief Financial Officer, subject to the order of the

Board of Directors, shall have the custody of all funds and securities of the corporation. The Chief Financial Officer shall perform other duties commonly incident to the office and shall also perform such other duties and have such other powers as the Board of Directors or the President shall designate from time to time. To the extent that a Chief Financial Officer has been appointed and no Treasurer has been appointed, all references in these Bylaws to the Treasurer shall be deemed references to the Chief Financial Officer. The President may direct the Treasurer, if any, or any Assistant Treasurer, or the Controller or any Assistant Controller to assume and perform the duties of the Chief Financial Officer in the absence or disability of the Chief Financial Officer, and each Treasurer and Assistant Treasurer and each Controller and Assistant Controller shall perform other duties commonly incident to the office and shall also perform such other duties and have such other powers as the Board of Directors or the President shall designate from time to time.

(h) Duties of Treasurer. Unless another officer has been appointed Chief Financial Officer of the corporation, the Treasurer shall be the chief financial officer of the corporation and shall keep or cause to be kept the books of account of the corporation in a thorough and proper manner and shall render statements of the financial affairs of the corporation in such form and as often as required by the Board of Directors or the President, and, subject to the order of the Board of Directors, shall have the custody of all funds and securities of the corporation. The Treasurer shall perform other duties commonly incident to the office and shall also perform such other duties and have such other powers as the Board of Directors or the President shall designate from time to time.

Section 29. Delegation Of Authority. The Board of Directors may from time to time delegate the powers or duties of any officer to any other officer or agent, notwithstanding any provision hereof.

Section 30. Resignations. Any officer may resign at any time by giving notice in writing or by electronic transmission to the Board of Directors or to the President or to the Secretary. Any such resignation shall be effective when received by the person or persons to whom such notice is given, unless a later time is specified therein, in which event the resignation shall become effective at such later time. Unless otherwise specified in such notice, the acceptance of any such resignation shall not be necessary to make it effective. Any resignation shall be without prejudice to the rights, if any, of the corporation under any contract with the resigning officer.

Section 31. Removal. Any officer may be removed from office at any time, either with or without cause, by the affirmative vote of a majority of the directors in office at the time, or by the unanimous written consent of the directors in office at the time, or by any committee or by the Chief Executive Officer or by other superior officers upon whom such power of removal may have been conferred by the Board of Directors.

ARTICLE VI

EXECUTION OF CORPORATE INSTRUMENTS AND VOTING OF SECURITIES OWNED BY THE CORPORATION

Section 32. Execution Of Corporate Instruments. The Board of Directors may, in its discretion, determine the method and designate the signatory officer or officers, or other person or persons, to execute on behalf of the corporation any corporate instrument or document, or to sign on behalf of the corporation the corporate name without limitation, or to enter into contracts on behalf of the corporation, except where otherwise provided by law or these Bylaws, and such execution or signature shall be binding upon the corporation.

All checks and drafts drawn on banks or other depositories on funds to the credit of the corporation or in special accounts of the corporation shall be signed by such person or persons as the Board of Directors shall authorize so to do.

Unless authorized or ratified by the Board of Directors or within the agency power of an officer, no officer, agent or employee shall have any power or authority to bind the corporation by any contract or engagement or to pledge its credit or to render it liable for any purpose or for any amount.

Section 33. Voting Of Securities Owned By The Corporation. All stock and other securities of other corporations owned or held by the corporation for itself, or for other parties in any capacity, shall be voted, and all proxies with respect thereto shall be executed, by the person authorized so to do by resolution of the Board of Directors, or, in the absence of such authorization, by the Chairman of the Board of Directors, the Chief Executive Officer, the President, or any Vice President.

ARTICLE VII

SHARES OF STOCK

Section 34. Form And Execution Of Certificates. The shares of the corporation shall be represented by certificates, or shall be uncertificated if so provided by resolution or resolutions of the Board of Directors. Certificates for the shares of stock, if any, shall be in such form as is consistent with the Certificate of Incorporation and applicable law. Every holder of stock represented by certificate in the corporation shall be entitled to have a certificate signed by or in the name of the corporation by the Chairman of the Board of Directors, or the President or any Vice President and by the Treasurer or Assistant Treasurer or the Secretary or Assistant Secretary, certifying the number of shares owned by him in the corporation. Any or all of the signatures on the certificate may be facsimiles. In case any officer, transfer agent, or registrar who has signed or whose facsimile signature has been placed upon a certificate shall have ceased to be such officer, transfer agent, or registrar before such certificate is issued, it may be issued with the same effect as if he were such officer, transfer agent, or registrar at the date of issue.

Section 35. Lost Certificates. A new certificate or certificates shall be issued in place of any certificate or certificates theretofore issued by the corporation alleged to have been lost, stolen, or destroyed, upon the making of an affidavit of that fact by the person claiming the certificate of stock to be lost, stolen, or destroyed. The corporation may require, as a condition precedent to the issuance of a new certificate or certificates, the owner of such lost, stolen, or destroyed certificate or certificates, or the owner's legal representative, to agree to indemnify the corporation in such

manner as it shall require or to give the corporation a surety bond in such form and amount as it may direct as indemnity against any claim that may be made against the corporation with respect to the certificate alleged to have been lost, stolen, or destroyed.

Section 36. Transfers.

(a) Transfers of record of shares of stock of the corporation shall be made only upon its books by the holders thereof, in person or by attorney duly authorized, and, in the case of stock represented by certificate, upon the surrender of a properly endorsed certificate or certificates for a like number of shares.

(b) The corporation shall have power to enter into and perform any agreement with any number of stockholders of any one or more classes of stock of the corporation to restrict the transfer of shares of stock of the corporation of any one or more classes owned by such stockholders in any manner not prohibited by the DGCL.

Section 37. Fixing Record Dates.

(a) In order that the corporation may determine the stockholders entitled to notice of or to vote at any meeting of stockholders or any adjournment thereof, the Board of Directors may fix a record date, which record date shall not precede the date upon which the resolution fixing the record date is adopted by the Board of Directors, and which record date shall, subject to applicable law, not be more than sixty (60) nor less than ten (10) days before the date of such meeting. If no record date is fixed by the Board of Directors, the record date for determining stockholders entitled to notice of or to vote at a meeting of stockholders shall be at the close of business on the day next preceding the day on which notice is given, or if notice is waived, at the close of business on the day next preceding the day on which the meeting is held. A determination of stockholders of record entitled to notice of or to vote at a meeting of stockholders shall apply to any adjournment of the meeting; *provided, however*, that the Board of Directors may fix a new record date for the adjourned meeting.

(b) In order that the corporation may determine the stockholders entitled to receive payment of any dividend or other distribution or allotment of any rights or the stockholders entitled to exercise any rights in respect of any change, conversion or exchange of stock, or for the purpose of any other lawful action, the Board of Directors may fix, in advance, a record date, which record date shall not precede the date upon which the resolution fixing the record date is adopted, and which record date shall be not more than sixty (60) days prior to such action. If no record date is fixed, the record date for determining stockholders for any such purpose shall be at the close of business on the day on which the Board of Directors adopts the resolution relating thereto.

Section 38. Registered Stockholders. The corporation shall be entitled to recognize the exclusive right of a person registered on its books as the owner of shares to receive dividends, and to vote as such owner, and shall not be bound to recognize any equitable or other claim to or interest in such share or shares on the part of any other person whether or not it shall have express or other notice thereof, except as otherwise provided by the laws of Delaware.

ARTICLE VIII

OTHER SECURITIES OF THE CORPORATION

Section 39. Execution Of Other Securities. All bonds, debentures and other corporate securities of the corporation, other than stock certificates (covered in Section 34), may be signed by the Chairman of the Board of Directors, the President or any Vice President, or such other person as may be authorized by the Board of Directors, and the corporate seal impressed thereon or a facsimile of such seal imprinted thereon and attested by the signature of the Secretary or an Assistant Secretary, or the Chief Financial Officer or Treasurer or an Assistant Treasurer; *provided, however,* that where any such bond, debenture or other corporate security shall be authenticated by the manual signature, or where permissible facsimile signature, of a trustee under an indenture pursuant to which such bond, debenture or other corporate security shall be issued, the signatures of the persons signing and attesting the corporate seal on such bond, debenture or other corporate security may be the imprinted facsimile of the signatures of such persons. Interest coupons appertaining to any such bond, debenture or other corporate security, authenticated by a trustee as aforesaid, shall be signed by the Treasurer or an Assistant Treasurer of the corporation or such other person as may be authorized by the Board of Directors, or bear imprinted thereon the facsimile signature of such person. In case any officer who shall have signed or attested any bond, debenture or other corporate security, or whose facsimile signature shall appear thereon or on any such interest coupon, shall have ceased to be such officer before the bond, debenture or other corporate security so signed or attested shall have been delivered, such bond, debenture or other corporate security nevertheless may be adopted by the corporation and issued and delivered as though the person who signed the same or whose facsimile signature shall have been used thereon had not ceased to be such officer of the corporation.

ARTICLE IX

DIVIDENDS

Section 40. Declaration Of Dividends. Dividends upon the capital stock of the corporation, subject to the provisions of the Certificate of Incorporation and applicable law, if any, may be declared by the Board of Directors pursuant to law at any regular or special meeting. Dividends may be paid in cash, in property, or in shares of the capital stock, subject to the provisions of the Certificate of Incorporation and applicable law.

Section 41. Dividend Reserve. Before payment of any dividend, there may be set aside out of any funds of the corporation available for dividends such sum or sums as the Board of Directors from time to time, in their absolute discretion, think proper as a reserve or reserves to meet contingencies, or for equalizing dividends, or for repairing or maintaining any property of the corporation, or for such other purpose as the Board of Directors shall think conducive to the interests of the corporation, and the Board of Directors may modify or abolish any such reserve in the manner in which it was created.

ARTICLE X

FISCAL YEAR

Section 42. Fiscal Year. The fiscal year of the corporation shall be fixed by resolution of the Board of Directors.

ARTICLE XI

INDEMNIFICATION

Section 43. Indemnification of Directors, Executive Officers, Employees and Other Agents.

(a) Directors and Executive Officers. The corporation shall indemnify its directors and executive officers (for the purposes of this Article XI, "executive officers" shall have the meaning defined in Rule 3b-7 promulgated under the 1934 Act to the extent not prohibited by the DGCL or any other applicable law; *provided, however*, that the corporation may modify the extent of such indemnification by individual contracts with its directors and executive officers; and, *provided, further*, that the corporation shall not be required to indemnify any director or executive officer in connection with any proceeding (or part thereof) initiated by such person unless (i) such indemnification is expressly required to be made by law, (ii) the proceeding was authorized by the Board of Directors of the corporation, (iii) such indemnification is provided by the corporation, in its sole discretion, pursuant to the powers vested in the corporation under the DGCL or any other applicable law or (iv) such indemnification is required to be made under subsection (d).

(b) Other Officers, Employees and Other Agents. The corporation shall have power to indemnify its other officers, employees and other agents as set forth in the DGCL or any other applicable law. The Board of Directors shall have the power to delegate the determination of whether indemnification shall be given to any such person except executive officers to such officers or other persons as the Board of Directors shall determine.

(c) Expenses. The corporation shall advance to any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative, by reason of the fact that he is or was a director or executive officer, of the corporation, or is or was serving at the request of the corporation as a director or executive officer of another corporation, partnership, joint venture, trust or other enterprise, prior to the final disposition of the proceeding, promptly following request therefor, all expenses incurred by any director or executive officer in connection with such proceeding provided, however, that if the DGCL requires, an advancement of expenses incurred by a director or executive officer in his or her capacity as a director or executive officer (and not in any other capacity in which service was or is rendered by such indemnitee, including, without limitation, service to an employee benefit plan) shall be made only upon delivery to the corporation of an undertaking (hereinafter an "undertaking"), by or on behalf of such indemnitee, to repay all amounts so advanced if it shall ultimately be determined by final judicial decision from which there is no further right to appeal (hereinafter a "final adjudication") that such indemnitee is not entitled to be indemnified for such expenses under this section or otherwise.

Notwithstanding the foregoing, unless otherwise determined pursuant to paragraph (e) of this section, no advance shall be made by the corporation to an executive officer of the corporation (except by reason of the fact that such executive officer is or was a director of the corporation in which event this paragraph shall not apply) in any action, suit or proceeding, whether civil, criminal, administrative or investigative, if a determination is reasonably and promptly made (i) by a majority vote of directors who were not parties to the proceeding, even if not a quorum, or (ii) by a committee of such directors designated by a majority vote of such directors, even though less than a quorum, or (iii) if there are no such directors, or such directors so direct, by independent legal counsel in a

written opinion, that the facts known to the decision-making party at the time such determination is made demonstrate clearly and convincingly that such person acted in bad faith or in a manner that such person did not believe to be in or not opposed to the best interests of the corporation.

(d) Enforcement. Without the necessity of entering into an express contract, all rights to indemnification and advances to directors and executive officers under this Bylaw shall be deemed to be contractual rights and be effective to the same extent and as if provided for in a contract between the corporation and the director or executive officer. Any right to indemnification or advances granted by this section to a director or executive officer shall be enforceable by or on behalf of the person holding such right in any court of competent jurisdiction if (i) the claim for indemnification or advances is denied, in whole or in part, or (ii) no disposition of such claim is made within ninety (90) days of request therefor. To the extent permitted by law, the claimant in such enforcement action, if successful in whole or in part, shall be entitled to be paid also the expense of prosecuting the claim. In connection with any claim for indemnification, the corporation shall be entitled to raise as a defense to any such action that the claimant has not met the standards of conduct that make it permissible under the DGCL or any other applicable law for the corporation to indemnify the claimant for the amount claimed. In connection with any claim by an executive officer of the corporation (except in any action, suit or proceeding, whether civil, criminal, administrative or investigative, by reason of the fact that such executive officer is or was a director of the corporation) for advances, the corporation shall be entitled to raise a defense as to any such action clear and convincing evidence that such person acted in bad faith or in a manner that such person did not believe to be in or not opposed to the best interests of the corporation, or with respect to any criminal action or proceeding that such person acted without reasonable cause to believe that his conduct was lawful. Neither the failure of the corporation (including its Board of Directors, independent legal counsel or its stockholders) to have made a determination prior to the commencement of such action that indemnification of the claimant is proper in the circumstances because he has met the applicable standard of conduct set forth in the DGCL or any other applicable law, nor an actual determination by the corporation (including its Board of Directors, independent legal counsel or its stockholders) that the claimant has not met such applicable standard of conduct, shall be a defense to the action or create a presumption that claimant has not met the applicable standard of conduct. In any suit brought by a director or executive officer to enforce a right to indemnification or to an advancement of expenses hereunder, the burden of proving that the director or executive officer is not entitled to be indemnified, or to such advancement of expenses, under this section or otherwise shall be on the corporation.

(e) Non-Exclusivity of Rights. The rights conferred on any person by this Bylaw shall not be exclusive of any other right which such person may have or hereafter acquire under any applicable statute, provision of the Certificate of Incorporation, Bylaws, agreement, vote of stockholders or disinterested directors or otherwise, both as to action in his official capacity and as to action in another capacity while holding office. The corporation is specifically authorized to enter into individual contracts with any or all of its directors, officers, employees or agents respecting indemnification and advances, to the fullest extent not prohibited by the DGCL, or by any other applicable law.

(f) Survival of Rights. The rights conferred on any person by this Bylaw shall continue as to a person who has ceased to be a director or executive officer and shall inure to the benefit of the heirs, executors and administrators of such a person.

(g) Insurance. To the fullest extent permitted by the DGCL or any other applicable law, the corporation, upon approval by the Board of Directors, may purchase insurance on behalf of any person required or permitted to be indemnified pursuant to this section.

(h) Amendments. Any repeal or modification of this section shall only be prospective and shall not affect the rights under this Bylaw in effect at the time of the alleged occurrence of any action or omission to act that is the cause of any proceeding against any agent of the corporation.

(i) Saving Clause. If this Bylaw or any portion hereof shall be invalidated on any ground by any court of competent jurisdiction, then the corporation shall nevertheless indemnify each director and executive officer to the full extent not prohibited by any applicable portion of this section that shall not have been invalidated, or by any other applicable law. If this section shall be invalid due to the application of the indemnification provisions of another jurisdiction, then the corporation shall indemnify each director and executive officer to the full extent under any other applicable law.

(j) Certain Definitions. For the purposes of this Bylaw, the following definitions shall apply:

(i) The term “proceeding” shall be broadly construed and shall include, without limitation, the investigation, preparation, prosecution, defense, settlement, arbitration and appeal of, and the giving of testimony in, any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative.

(ii) The term “expenses” shall be broadly construed and shall include, without limitation, court costs, attorneys’ fees, witness fees, fines, amounts paid in settlement or judgment and any other costs and expenses of any nature or kind incurred in connection with any proceeding.

(iii) The term the “corporation” shall include, in addition to the resulting corporation, any constituent corporation (including any constituent of a constituent) absorbed in a consolidation or merger which, if its separate existence had continued, would have had power and authority to indemnify its directors, officers, and employees or agents, so that any person who is or was a director, officer, employee or agent of such constituent corporation, or is or was serving at the request of such constituent corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, shall stand in the same position under the provisions of this section with respect to the resulting or surviving corporation as he would have with respect to such constituent corporation if its separate existence had continued.

(iv) References to a “director,” “executive officer,” “officer,” “employee,” or “agent” of the corporation shall include, without limitation, situations where such

person is serving at the request of the corporation as, respectively, a director, executive officer, officer, employee, trustee or agent of another corporation, partnership, joint venture, trust or other enterprise.

(v) References to “other enterprises” shall include employee benefit plans; references to “fines” shall include any excise taxes assessed on a person with respect to an employee benefit plan; and references to “serving at the request of the corporation” shall include any service as a director, officer, employee or agent of the corporation which imposes duties on, or involves services by, such director, officer, employee, or agent with respect to an employee benefit plan, its participants, or beneficiaries; and a person who acted in good faith and in a manner he reasonably believed to be in the interest of the participants and beneficiaries of an employee benefit plan shall be deemed to have acted in a manner “not opposed to the best interests of the corporation” as referred to in this section.

ARTICLE XII

NOTICES

Section 44. Notices.

(a) **Notice To Stockholders.** Written notice to stockholders of stockholder meetings shall be given as provided in Section 7 herein. Without limiting the manner by which notice may otherwise be given effectively to stockholders under any agreement or contract with such stockholder, and except as otherwise required by law, written notice to stockholders for purposes other than stockholder meetings may be sent by US mail or nationally recognized overnight courier, or by facsimile, telegraph or telex or by electronic mail or other electronic means.

(b) **Notice To Directors.** Any notice required to be given to any director may be given by the method stated in subsection (a), as otherwise provided in these Bylaws, or by overnight delivery service, facsimile, telex or telegram, except that such notice other than one which is delivered personally shall be sent to such address as such director shall have filed in writing with the Secretary, or, in the absence of such filing, to the last known post office address of such director.

(c) **Affidavit Of Mailing.** An affidavit of mailing, executed by a duly authorized and competent employee of the corporation or its transfer agent appointed with respect to the class of stock affected, or other agent, specifying the name and address or the names and addresses of the stockholder or stockholders, or director or directors, to whom any such notice or notices was or were given, and the time and method of giving the same, shall in the absence of fraud, be prima facie evidence of the facts therein contained.

(d) **Methods of Notice.** It shall not be necessary that the same method of giving notice be employed in respect of all recipients of notice, but one permissible method may be employed in respect of any one or more, and any other permissible method or methods may be employed in respect of any other or others.

(e) **Notice To Person With Whom Communication Is Unlawful.** Whenever notice is required to be given, under any provision of law or of the Certificate of Incorporation or Bylaws of the corporation, to any person with whom communication is unlawful, the giving of such notice to such person shall not be required and there shall be no duty to apply to any governmental authority or agency for a license or permit to give such notice to such person. Any action or meeting which shall be taken or held without notice to any such person with whom communication is unlawful shall have the same force and effect as if such notice had been duly given. In the event that the action taken by the corporation is such as to require the filing of a certificate under any provision of the DGCL, the certificate shall state, if such is the fact and if notice is required, that notice was given to all persons entitled to receive notice except such persons with whom communication is unlawful.

(f) **Notice to Stockholders Sharing an Address.** Except as otherwise prohibited under DGCL, any notice given under the provisions of DGCL, the Certificate of Incorporation or the Bylaws shall be effective if given by a single written notice to stockholders who share an address if consented to by the stockholders at that address to whom such notice is given. Such consent shall have been deemed to have been given if such stockholder fails to object in writing to the corporation within sixty (60) days of having been given notice by the corporation

of its intention to send the single notice. Any consent shall be revocable by the stockholder by written notice to the corporation.

ARTICLE XIII

AMENDMENTS

Section 45. Amendments. Subject to the limitations set forth in Section 43(h) of these Bylaws or the provisions of the Certificate of Incorporation, the Board of Directors is expressly empowered to adopt, amend or repeal the Bylaws of the corporation. Any adoption, amendment or repeal of the Bylaws of the corporation by the Board of Directors shall require the approval of a majority of the directors then serving. The stockholders also shall have power to adopt, amend or repeal the Bylaws of the corporation; *provided, however*, that, in addition to any vote of the holders of any class or series of stock of the corporation required by law or by the Certificate of Incorporation, such action by stockholders shall require the affirmative vote of the holders of at least sixty-six and two-thirds percent (66-2/3%) of the voting power of all of the then-outstanding shares of the capital stock of the corporation entitled to vote generally in the election of directors, voting together as a single class.

ARTICLE XIV

LOANS TO OFFICERS

Section 46. Loans To Officers. Except as otherwise prohibited by applicable law, the corporation may lend money to, or guarantee any obligation of, or otherwise assist any officer or other employee of the corporation or of its subsidiaries, including any officer or employee who is a director of the corporation or its subsidiaries, whenever, in the judgment of the Board of Directors, such loan, guarantee or assistance may reasonably be expected to benefit the corporation. The loan, guarantee or other assistance may be with or without interest and may be unsecured, or secured in such manner as the Board of Directors shall approve, including, without limitation, a pledge of shares of stock of the corporation. Nothing in these Bylaws shall be deemed to deny, limit or restrict the powers of guaranty or warranty of the corporation at common law or under any statute.

ARTICLE XV

FORUM SELECTION BYLAW

Section 47. Forum Selection Bylaw. Unless the corporation consents in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware (or, if and only if the Court of Chancery of the State of Delaware lacks subject matter jurisdiction, any state court located within the State of Delaware or, if and only if all such state courts lack subject matter jurisdiction, the federal district court for the District of Delaware) shall, to the fullest extent permitted by law, be the sole and exclusive forum for the following types of actions or proceedings under Delaware statutory or common law: (1) any derivative action or proceeding brought on behalf of the corporation; (2) any action asserting a claim of breach of a fiduciary duty owed by any current or former director, officer, other employee or stockholder of the corporation to the corporation or to the corporation's stockholders; (3) any action asserting a claim arising pursuant to any provision of the DGCL, the Certificate of Incorporation or these Bylaws or as to which the DGCL confers jurisdiction on the Court of Chancery of the State of Delaware; or (4) any action asserting a claim governed by the internal affairs doctrine. Any person or entity purchasing or otherwise acquiring or holding any interest in shares of capital stock of the corporation shall be deemed to have notice of and consented to the provisions of this Section 47. This choice of forum provision does not apply to suits brought to enforce a duty or liability created by the 1933 Act or the 1934 Act or any claim for which the federal courts have exclusive jurisdiction.

NewLink Genetics Corporation

Lock-Up Agreement

[•], 2019

This Lock-Up Agreement (this “**Agreement**”) is executed in connection with the Agreement and Plan of Merger and Reorganization (the “**Merger Agreement**”) by and among NewLink Genetics Corporation (the “**Parent**”), Cyclone Merger Sub, Inc., (“**Merger Sub**”), and Lumos Pharma, Inc. (the “**Company**”), dated as of [•], 2019. Capitalized terms used herein but not defined shall have the meanings ascribed to such terms in the Merger Agreement.

In connection with, and as an inducement to, the parties entering into the Merger Agreement and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the undersigned, by executing this Agreement, agrees that, without the prior written consent of the Parent, during the period commencing at the Effective Time and continuing until the end of the Lock-Up Period (as hereinafter defined), the undersigned will not: (1) offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, make any short sale or otherwise transfer or dispose of or lend, directly or indirectly, any shares of Common Stock of Parent (the “**Parent Common Stock**”) or any securities convertible into, exercisable or exchangeable for or that represent the right to receive Parent Common Stock (including without limitation, Parent Common Stock which may be deemed to be beneficially owned by the undersigned in accordance with the rules and regulations of the Securities and Exchange Commission and securities which may be issued upon exercise of a stock option or warrant) whether now owned or hereafter acquired (the “**Securities**”); (2) enter into any swap or other agreement that transfers, in whole or in part, any of the economic consequences of ownership of the Securities, whether any such transaction described in clause (1) or (2) above is to be settled by delivery of Parent Common Stock or such other securities, in cash or otherwise; (3) grant any proxies or powers of attorney with respect to any Securities, deposit any Securities into a voting trust or enter into a voting agreement or similar arrangement or commitment with respect to any Securities, other than the grant of any proxies to any officer of Parent in connection with the Parent Stockholders’ Meeting or (4) publicly disclose the intention to do any of the foregoing (each of the foregoing restrictions, the “**Lock-Up Restrictions**”).

The Lock-Up Restrictions shall automatically terminate and cease to be effective on the date that is one-hundred and eighty (180) days after the Effective Time. The period during which the Lock-Up Restrictions apply to the Securities shall be deemed the “**Lock-Up Period**” with respect thereto.

The undersigned agrees that the Lock-Up Restrictions preclude the undersigned from engaging in any hedging or other transaction with respect to any then-subject Securities which is designed to or which reasonably could be expected to lead to or result in a sale or disposition of such Securities even if such Securities would be disposed of by someone other than the undersigned. Such prohibited hedging or other transactions would include without limitation any short sale or any purchase, sale or grant of any right (including without limitation any put or call option) with respect to such Securities or with respect to any security that includes, relates to, or derives any significant part of its value from such Securities.

Notwithstanding the foregoing, the undersigned may transfer any of the Securities (i) as a *bona fide* gift or gifts or charitable contribution(s), (ii) to any trust for the direct or indirect benefit of the undersigned or the immediate family of the undersigned, (iii) if the undersigned is a corporation, partnership, limited liability

company, trust or other business entity (1) to another corporation, partnership, limited liability company, trust or other business entity that is a direct or indirect affiliate (as defined in Rule 405 promulgated under the Securities Act) of the undersigned or (2) as distributions of shares of Parent Common Stock or any security convertible into or exercisable for Parent Common Stock to limited partners, limited liability company members or stockholders of the undersigned or holders of similar equity interests in the undersigned, (iv) if the undersigned is a trust, to the beneficiary of such trust, (v) by testate succession or intestate succession, (vi) to any immediate family member, any investment fund, family partnership, family limited liability company or other entity controlled or managed by the undersigned, (vii) to a nominee or custodian of a person or entity to whom a disposition or transfer would be permissible under clauses (i) through (vi), (viii) to Parent in a transaction exempt from Section 16(b) of the Exchange Act upon a vesting event of the Securities or upon the exercise of options or warrants to purchase Parent Common Stock on a "cashless" or "net exercise" basis or to cover tax withholding obligations of the undersigned in connection with such vesting or exercise (but for the avoidance of doubt, excluding all manners of exercise that would involve a sale in the open market of any securities relating to such options or warrants, whether to cover the applicable aggregate exercise price, withholding tax obligations or otherwise), (ix) to Parent in connection with the termination of employment or other termination of a service provider and pursuant to agreements in effect as of the Effective Time whereby Parent has the option to repurchase such shares or securities, (x) acquired by the undersigned in open market transactions after the Effective Time, (xi) pursuant to a bona fide third party tender offer, merger, consolidation or other similar transaction made to all holders of the Parent's capital stock involving a Change of Control of the Parent, provided that in the event that such tender offer, merger, consolidation or other such transaction is not completed, the Securities shall remain subject to the restrictions contained in this Agreement, or (xii) pursuant to an order of a court or regulatory agency; *provided*, in the case of clauses (i)-(vii), that (A) such transfer shall not involve a disposition for value and (B) the transferee agrees in writing with Parent to be bound by the terms of this Agreement. For purposes of this Agreement, "**immediate family**" shall mean any relationship by blood, marriage or adoption, not more remote than first cousin and "**Change of Control**" shall mean the consummation of any bona fide third party tender offer, merger, consolidation or other similar transaction the result of which is that any "person" (as defined in Section 13(d)(3) of the Exchange Act), or group of persons, becomes the beneficial owner (as defined in Rules 13d-3 and 13d-5 of the Exchange Act) of more than 50% of total voting power of the voting stock of the Parent; provided that, for the avoidance of doubt, the consummation of the Contemplated Transactions shall not constitute a Change of Control for purposes of this Agreement.

In addition, the foregoing restrictions shall not apply to (i) the exercise of stock options (x) that would expire during the Lock-Up Period or (y) other than Company Options that are converted into and become options to purchase Parent Common Stock pursuant to Section 5.4(a) of the Merger Agreement, that are granted pursuant to Parent Stock Plans existing following the Effective Time, including in each case the "net" exercise of such options in accordance with their terms and the surrender of Parent Common Stock in lieu of payment in cash of the exercise price and any tax withholding obligations due as a result of such exercise; *provided* that it shall apply to any of the Securities issued upon such exercise, or (ii) the establishment of any contract, instruction or plan (a "**Plan**") that satisfies all of the requirements of Rule 10b5-1(c)(1)(i)(B) under the Exchange Act; *provided* that no sales of the Securities shall be made pursuant to such a Plan prior to the expiration of the Lock-Up Period, and such a Plan may only be established if no public announcement of the establishment or existence thereof and no filing with the Securities and Exchange Commission or other regulatory authority in respect thereof or transactions thereunder or contemplated thereby, by the undersigned, Parent or any other person, shall be required, and no such announcement or filing is made voluntarily, by the undersigned, Parent or any other person, prior to the expiration of the applicable Lock-Up Period. In furtherance of the foregoing, Parent and its transfer agent and registrar are hereby authorized to decline to make any transfer of shares of Parent Common Stock if such transfer would constitute a violation or breach of this Agreement.

The undersigned understands that the Securities shall bear the following or substantially similar legends, whether in book-entry or certificated form (in addition to any other legends required by law or any agreement to which any such Seller is a party):

“THE SECURITIES REPRESENTED HEREBY ARE SUBJECT TO AN AGREEMENT BY THE REGISTERED HOLDER HEREOF THAT RESTRICTS THE TRANSFER OR SALE OF THESE SHARES BEFORE *THE DATE THAT IS 180-DAYS AFTER THE EFFECTIVE TIME*. COPIES OF SUCH AGREEMENT MAY BE OBTAINED UPON WRITTEN REQUEST OF THE SECRETARY OF THE ISSUER”

The undersigned hereby represents and warrants that the undersigned has full power and authority to enter into this Agreement and that upon request, the undersigned will execute any additional documents reasonably necessary to ensure the validity or enforcement of this Agreement. All authority herein conferred or agreed to be conferred and any obligations of the undersigned shall be binding upon the successors, assigns, heirs or personal representatives of the undersigned.

The undersigned understands that the undersigned shall be released from all obligations under this Agreement if the Merger Agreement is terminated prior to the Effective Time pursuant to its terms, upon the date of such termination.

In the event that, during the Lock-Up Period, the Parent releases or waives any prohibition set forth in this Lock-Up Agreement on the transfer of Securities held by any of the stockholders of the Parent or the Company or any of their respective affiliates who receive shares from one or more of such stockholders during the Lock-Up Period as permitted by this Lock-Up Agreement, the same percentage of the total number of Securities held by the undersigned as the percentage of the total number of outstanding Securities held by such stockholder that are the subject of such waiver shall be immediately and fully released on the same terms from the applicable prohibition(s) set forth herein. Notwithstanding the foregoing, the provisions of this paragraph will not apply if (1) the release or waiver is effected solely to permit a transfer not involving a disposition for value and (2) the transferee agrees in writing to be bound by the same terms described in this Lock-Up Agreement to the extent and for the duration that such terms remain in effect at the time of transfer. The Parent shall use commercially reasonable efforts to promptly notify the undersigned of each such release (provided that the failure to provide such notice shall not give rise to any claim or liability against the Parent or the Company).

The undersigned understands that Parent, the Merger Sub and the Company are entering into the Merger Agreement in reliance upon this Agreement.

This Agreement shall be governed by, and construed in accordance with, the laws of the State of Delaware.

[Signature Page Follows]

This Agreement, and any certificates, documents, instruments and writings that are delivered pursuant hereto, constitutes the entire agreement and understanding of the Parent, the Company and the undersigned in respect of the subject matter hereof and supersedes all prior understandings, agreements or representations by or among the Parent, the Company and the undersigned, written or oral, to the extent they relate in any way to the subject matter hereof.

Very truly yours,

Printed Name of Holder

By:

Signature

Printed Name of Person Signing

(and indicate capacity of person signing if signing as custodian, trustee, or on behalf of an entity)

September 27, 2019

Nicholas Vahanian, M.D.
1723 Glenleven Terrace
West Des Moines, IA 50266

Re: Transition Agreement

Dear Nick:

This letter sets forth the terms of the transition agreement (the "**Transition Agreement**" or the "**Agreement**") that NewLink Genetics Corporation (the "**Company**") is offering to aid in your employment transition.

1. Transition Period and Separation Date. You hereby resign as President of the Company, and from any other office or position you may hold with the Company and any affiliated entities, including your position on the Board of Directors of the Company and any affiliated entities, effective as of September 27, 2019 (the "**Resignation Date**"). The period from such date through the date your employment terminates (the "**Separation Date**" as described below) is your "**Transition Period**." During the Transition Period you will remain an employee of the Company. You have qualified for Short Term Disability ("**STD**") benefits under the Company's STD Plan for eight weeks beginning August 17, 2019, and are awaiting a decision on extension of such benefits. The Separation Date will be the date on which your STD benefits terminate (but in no event later than November 8, 2019). From the date hereof through the Separation Date, you will be paid at 75% of your regular salary. On the Company's next regular payroll date following the Separation Date, the Company will pay you all accrued base salary and all remaining accrued but unused vacation earned for your services through the Separation Date, less applicable payroll deductions and withholdings (the "**Accrued Obligations**"). You will receive the Accrued Obligations regardless of whether or not you sign this Agreement.

2. Expense Reimbursements. You agree that, within thirty (30) days of the Separation Date, you will submit to the Company your final documented expense reimbursement statement reflecting all business expenses you incurred through the Separation Date, if any, for which you seek reimbursement. The Company will reimburse you for these expenses pursuant to its regular business practice.

3. Severance Benefits. Under the circumstances of your separation from the Company you are not eligible for any severance benefits set forth in your Employment Agreement with the Company dated January 4, 2016 (the "**Employment Agreement**") or otherwise. If you execute this Transition Agreement and execute and do not revoke the Release Agreement attached as Exhibit A (the "**Release Agreement**"), in each case within the specified time period, and comply with your obligations thereunder, the Company shall provide you with the severance payments and benefits

(collectively, the “**Severance Benefits**”) described below. Except as expressly provided otherwise, all cash benefits shall be paid subject to applicable payroll deductions and withholdings.

(a) Cash Severance.

(i) 2019 Bonus. The Company also will pay you a bonus for your 2019 services (the “**Bonus Payment**”) equal to \$133,877, calculated as follows: \$180,915 (representing the actual 2018 Bonus paid) multiplied by .740 (representing a prorated portion (270/365 days) for the period of employment in 2019). The Bonus Payment will be paid to you no later than the time 2019 bonuses are paid to other executives, and in any event not later than March 15, 2020.

(ii) Continuation Payments. Consistent with the severance provisions set forth in Sections 9(g) and 11 of your Employment Agreement, the Company will pay you cash severance equal to \$861,450, representing the base salary provided in your Employment Agreement, for a period of eighteen (18) months (the “**Salary Continuation Payment**”). As required by Section 409A of the Internal Revenue Code of 1986, as amended (the “**Code**”) and the regulations and other guidance thereunder and any state law of similar effect (collectively “**Section 409A**”), the Salary Continuation Payment shall be paid in a lump sum upon the first regularly scheduled payroll date that is six (6) months after the Separation Date, provided the Company has received the executed Agreement from you on or before that date. No interest will be paid to you on any amounts for which payment is delayed pursuant to the foregoing provision

(b) Healthcare Continuation Coverage Payments; other HealthCare Allowance.

(i) COBRA Election. To the extent provided by the federal COBRA law or, if applicable, state insurance laws, and by the Company’s current group health insurance policies, you may be eligible to continue your group health insurance benefits at your own expense after the Separation Date.

(ii) COBRA Premiums. As an additional severance benefit, if you timely elect continued coverage under COBRA, and execute, return and do not revoke this Agreement, the Company will pay that portion of your premiums that it was paying prior to the Separation Date for your basic medical coverage (including coverage for any eligible dependents, if applicable, but excluding dental and vision insurance coverage) (the “**COBRA Premiums**”) for the period (the “**COBRA Premium Period**”) starting on the Separation Date and ending on the earliest to occur of: (i) eighteen (18) months after the Separation Date; (ii) the date you become eligible for group health insurance coverage through a new employer; or (iii) the date you cease to be eligible for COBRA continuation coverage for any reason, including plan termination. In the event you become covered under another employer’s group health plan or otherwise cease to be eligible for COBRA during the COBRA Premium Period, you shall immediately provide written notification of such event to the Company’s Human Resources Manager.

(iii) Alternative Cash Payments in Lieu of COBRA Premiums. Notwithstanding the foregoing, if the Company determines, in its sole discretion, that it cannot pay the COBRA Premiums without a substantial risk of violating applicable law (including but not

limited to the 2010 Patient Protection and Affordable Care Act, as amended by the 2010 Health Care and Education Reconciliation Act), the Company instead shall pay you, on the first day of each calendar month following such determination, a fully taxable cash payment which, after taxes, is equal to the COBRA Premium amount the Company would have otherwise paid you for that month (assuming a 35% tax rate) (such amount, the “**Alternative Cash Payment**”), for the remainder of the COBRA Premium Period. You may, but are not obligated to, use such Alternative Cash Payments toward the cost of COBRA premiums.

(iv) **Allowance for Medical and Rehabilitation Costs.** As an additional benefit to you, the Company will pay you a fully taxable cash payment of \$400,000 within 30 days after the Separation Date as an allowance for future medical costs, healthcare insurance, and rehabilitation expenses.

(c) **Equity.** You have been granted options to purchase shares of the Company’s common stock (the “**Options**”) and certain restricted stock units (the “**RSUs**,” and together with the Options, the “**Awards**”) pursuant to the Company’s 2009 Equity Incentive Plan (the “**Plan**”). Vesting of any unvested Awards would cease on the Separation Date. As an additional severance benefit, the Company will (i) accelerate the vesting of the outstanding and unvested Awards set forth on Exhibit B (the “**Subject Awards**”) so that you are credited with an additional twelve (12) months of vesting as of such date (the “**Accelerated Vesting**”); and (ii) extend the exercise period under the governing agreements and Plan documents so that you have two (2) years from the Separation Date to exercise the shares vested as of the Separation Date (the “**Extended Exercise Period**”). To the extent that any performance criteria under any Award have not been satisfied as of the Separation Date, such Awards shall terminate as of the Separation Date. Except as expressly provided in this Section, the Options and RSUs will continue to be governed by the terms of the governing agreements and Plan documents. You acknowledge and agree that the Extended Exercise Period may convert any portion of the Options that were incentive stock options into non-qualified stock options, thereby changing their tax treatment; and you should seek advice from your own tax advisors about this extension.

(d) **Priority Review Voucher.** If the Company receives the Current Product Voucher contemplated by section 5.3.1 of the License and Collaboration Agreement between Merck Sharpe & Dohme Corp. (“**Merck**”), Bioprotection Systems Corporation, and the Company, dated November 21, 2018, as amended and as the same may be amended from time to time, then the Company shall pay you (or a charity designated by you) an amount equal to one half of one percent (0.5%) of the net amount actually received by the Company (in the event of a sale of such voucher), or the portion of the Current Product Voucher Value retained by the Company (if such voucher is retained by the Company), in each case after deducting all amounts paid or payable by the Company to Merck, Public Health Canada (as defined therein), or any other third parties entitled to a share of such amounts, and after deducting any fees or costs incurred in obtaining or selling such voucher. The foregoing right shall expire if such voucher has not been issued to the Company by December 31, 2024.

(e) **409A Compliance.** It is intended that the Severance Benefits provided to you hereunder comply with, or be exempt from, Section 409A, and that any ambiguities herein will

be interpreted to so comply and/or be exempt from Section 409A. It is intended that all of the benefits and payments under this Agreement satisfy, to the greatest extent possible, the exemptions from the application of Section 409A provided under Treasury Regulations Sections 1.409A-1(b)(4), 1.409A-1(b)(5) and 1.409A-1(b)(9), and this Agreement will be interpreted accordingly. To the extent not so exempt, this Agreement (and any definitions hereunder) will be interpreted in a manner that complies with the Section 409A requirements. For purposes of Section 409A, your right to receive any installment payments under this Agreement (whether severance payments, reimbursements or otherwise) shall be treated as a right to receive a series of separate payments and, accordingly, each installment payment hereunder shall at all times be considered a separate and distinct payment. If the period of time you could sign this Agreement crosses over two calendar years, the Agreement shall be deemed to have become effective on the last possible date it could become effective.

(f) 280G Compliance. Section 12 of the Employment Agreement is incorporated herein.

4. Benefits. Your participation in Employer-Sponsored Group Life Insurance and Short and Long Term Disability Insurance will cease as of the Separation Date; however, you may elect to convert your Life Insurance by contacting Mutual of Omaha at (800) 228-7104 or refer to the conversion notice attached hereto. Termination of your participation will not affect your eligibility for benefits for which you qualified during employment and for which you remain eligible after the Separation Date.

(a) Deductions for the 401(k) Plan will end with your last regular paycheck. You will receive information by mail concerning 401(k) plan rollover procedures should you be a participant in this program.

(b) You have the right to continue your current Health Care Spending Account if you are participating in this program. Information on how to continue this benefit will be mailed to you by Discovery Benefits along with your COBRA details. Dependent Care Spending Accounts cannot be continued. Your last full Spending Account payroll deductions will be processed on your final paycheck. Unless you elect to continue your Health Care Spending Account, you will only be eligible to claim expenses that you incurred through the end of the month of your separation date.

5. Other Compensation or Benefits. You acknowledge that, except as expressly provided in this Agreement, you have not earned and will not receive after the Separation Date any additional compensation, severance or benefits, with the exception of any vested right you may have under the express terms of a written ERISA-qualified benefit plan (e.g., 401(k) account). By way of example, you acknowledge that you have not earned and are not owed any bonus, incentive compensation, commissions or equity (other than as provided or referenced herein) from the Company.

6. Return of Company Property. No later than the close of business on the Separation Date, you shall return to the Company all Company non-public documents (and all copies thereof) and other Company property or information in your possession or control (collectively, "**Company**")

Property”), including, but not limited to: Company hardcopy and softcopy files, databases, notes, emails, correspondence, financial and operational information, current or potential customer lists and contact information, product and services information, research and development information, drawings, records, plans, forecasts, reports, payroll information, spreadsheets, studies, analyses, compilations of data, proposals, agreements, sales and marketing information, personnel information, specifications, code, software, electronically or computer-recorded information, tangible property and equipment (including, but not limited to, computing and communications devices, facsimile machines, mobile telephones, servers), credit cards, entry cards, identification badges and keys; and any materials of any kind which contain or embody any proprietary or confidential information of the Company and all reproductions thereof in whole or in part and in any medium, except that you shall be permitted to retain your Company-issued cell phone, desktop computer, laptop and printer, provided you shall comply with the penultimate sentence of this Section 6 with respect to such cell phone and laptop. You shall make a diligent search to locate any such Company Property by the close of business on the Separation Date. In addition, if you have used any personally owned computing or communication device, server, or e-mail system to receive, store, review, prepare or transmit any confidential or proprietary data, materials or information of the Company, then within five (5) business days after the Separation Date, you shall permanently delete and expunge such confidential or proprietary information from those systems without retaining any reproductions (in whole or in part); and you agree to make any such device or system available for inspection and analysis by the Company, upon its reasonable request, in order to permit the Company to determine whether you are in compliance with this provision. **Your timely compliance with the provisions of this Section is a precondition to your receipt of the Severance Benefits and other benefits provided hereunder.**

7. Proprietary Information, Non-Solicitation and Non-Competition Obligations. You acknowledge and agree to abide by your continuing obligations under your Employee Proprietary Information, Inventions, Non-Competition, and Non-Solicitation Agreement with the Company (the “**Proprietary Information Agreement**” described in **Exhibit C**), effective as of the beginning of your employment with the Company and continuing after the Separation Date, including but not limited to your obligations not to use or disclose any confidential or proprietary information of the Company and to refrain from certain solicitation and competitive activities. Confidential information that is also a “trade secret,” as defined by law, may be disclosed (A) if it is made (i) in confidence to a federal, state, or local government official, either directly or indirectly, or to an attorney and (ii) solely for the purpose of reporting or investigating a suspected violation of law; or (B) is made in a complaint or other document filed in a lawsuit or other proceeding, if such filing is made under seal. In addition, in the event that you file a lawsuit for retaliation by the Company for reporting a suspected violation of law, you may disclose the trade secret to your attorney and use the trade secret information in the court proceeding, if you: (A) file any document containing the trade secret under seal; and (B) do not disclose the trade secret, except pursuant to court order.

8. Non-Disparagement. Both you and the Company agree not to disparage the other party, and the other party’s officers, directors, employees, shareholders and agents, in any manner likely to be harmful to them or their business, business reputation or personal reputation; provided that both you and the Company will respond accurately and fully to any question, inquiry or request

for information when required by legal process. The Company's obligations under this Section are limited to the Company's directors, officers and other Company representatives with knowledge of this provision. Notwithstanding the foregoing, nothing in this Agreement shall limit your right to voluntarily communicate with the Equal Employment Opportunity Commission, United States Department of Labor, the National Labor Relations Board, the Securities and Exchange Commission, other federal government agency or similar state or local agency or to discuss the terms and conditions of your employment with others to the extent expressly permitted by Section 7 of the National Labor Relations Act.

9. Public Statements. Both the Company and you shall respond to third party inquiries, and the Company shall issue a press release, effectively stating that you have resigned from your position as President as of the Resignation Date.

10. References. In response to any request for references from a prospective employer, the Company will verify only your last job title and dates of employment.

11. Cooperation.

(a) Transition Briefings. Prior to and after the Separation Date, you agree to cooperate fully with the Company in all matters relating to the transition of your work and responsibilities on behalf of the Company, including, but not limited to, transitioning any work relationships and providing oral and written briefings (as requested) with respect to any past or present work activities and institutional knowledge, to such other persons as may be designated by the Company. You agree to make yourself available to respond to such inquiries with reasonable promptness, either telephonically or by email (as requested), unless the Company requests that you come to the Company at reasonably convenient times for such discussion or to review certain documents or materials related to the inquiry.

(b) No Voluntary Adverse Assistance. You agree that you will not voluntarily provide assistance, information or advice, directly or indirectly (including through agents or attorneys), to any third party (including both persons and entities) in connection with any claim or cause of action of any kind brought against, or being prepared against, the Company by any third party, nor shall you induce or encourage any person or entity to bring such claims; *provided, however*, that nothing herein shall limit or restrict your right to engage in any of the protected activities described in Section 14 (Protected Rights) below.

(c) Other Voluntary Cooperation. You agree to cooperate fully with the Company in connection with its actual or contemplated defense, prosecution, or investigation of any claims or demands by or against third parties, or other matters arising from events, acts, or failures to act that occurred during your employment with the Company. Such cooperation includes, without limitation, making yourself available to the Company upon reasonable notice, without subpoena, to provide complete, truthful and accurate information in witness interviews, depositions, and trial testimony. The Company will reimburse you for reasonable out-of-pocket expenses you incur in connection with any such cooperation (excluding forgone wages, salary, or other compensation), and will make reasonable efforts to accommodate your scheduling needs. In

addition, you agree to execute all documents (if any) necessary to carry out the terms of this Agreement.

12. No Admissions. Nothing contained in this Agreement shall be construed as an admission by you or the Company of any liability, obligation, wrongdoing or violation of law.

13. Release of Claims. In exchange for the Severance Benefits, including the Salary Continuation Payments, the reimbursement of your COBRA Premiums (or Alternative Cash Payments), the Accelerated Vesting, and all other consideration provided to you by the Company under this Agreement that you would not otherwise be entitled to receive (the "**Release Consideration**"), you agree to the terms below.

(a) General Release. You hereby generally and completely release the Company and its parent or subsidiary entities, successors, predecessors and affiliates, and its and their directors, officers, employees, consultants, shareholders, agents, attorneys, insurers, affiliates and assigns (collectively, the "**Released Parties**") of and from any and all claims, liabilities and obligations, both known and unknown, arising from or in any way related to events, acts, conduct, or omissions occurring prior to or on the date you sign this Agreement (collectively, the "**Released Claims**").

(b) Scope of Release. The Released Claims include, but are not limited to: (1) all claims arising from or in any way related to your employment with the Company, or the termination of that employment; (2) all claims related to your compensation or benefits from the Company (except as expressly provided in this Agreement), including but not limited to salary, bonuses, commissions, vacation pay, PTO, expense reimbursement, severance pay, fringe benefits, profit sharing, stock, stock options, or any other ownership or equity interests in the Company; (3) all claims for breach of contract, wrongful termination, and breach of the implied covenant of good faith and fair dealing, including but not limited to any claims arising under or based on your initial employment offer letter or subsequent Employment Agreement (including claims for severance benefits thereunder); (4) all tort claims, including but not limited to claims for battery, negligence, fraud, defamation, emotional distress, and discharge in violation of public policy; and (5) all federal, state, and local statutory claims in all jurisdictions, including but not limited to claims for discrimination, harassment, retaliation, attorneys' fees, or other claims arising under the federal Civil Rights Act of 1964, the federal Americans with Disabilities Act of 1990, the federal Family and Medical Leave Act, the Equal Pay Act of 1963, the Fair Labor Standards Act, the Employee Retirement Income Security Act of 1974, the Worker Adjustment and Retraining Notification Act (and all similar state and local laws), the Iowa Civil Rights Act of 1965, the Iowa Wage Payment Collection Law, the Texas Commission on Human Rights Act, the Texas Payday Law, the Texas Labor Code, and any statute or regulation administered by the Texas Workforce Commission.

(c) Excluded Claims. Notwithstanding the foregoing, the following are not included in the Released Claims (the "**Excluded Claims**"): (1) rights to apply for unemployment insurance benefits; (2) rights to workers' compensation disability benefits, claims and payments, if applicable; (3) any rights or claims for indemnification pursuant to any written indemnification agreement with the Company to which you are a party, or under Company bylaws or articles, or under applicable law; (4) any rights which cannot be waived as a matter of law; or (5) any claims for breach of this Agreement. You represent and warrant that, other than the Excluded Claims, you

are not aware of any claims you have or may have against any of the Released Parties that are not included in the Released Claims.

14. Protected Rights. Nothing in this Agreement shall prevent you from challenging the validity of the release of claims provided herein in a legal or administrative proceeding. You further understand that nothing in this Agreement (including, without limitation, Section 8 (Non-Disparagement) and Section 13 (Releases of Claims) above): limits your ability to file a charge or complaint with the Equal Employment Opportunity Commission, the Department of Labor, the National Labor Relations Board, the Occupational Safety and Health Administration, the Securities and Exchange Commission or any other federal, state or local governmental agency or commission (“**Government Agencies**”); prevents any party from providing information or disclosing the fact or terms of this Agreement as part of any government investigation; or prohibits any party from reporting possible violations of law or regulation to any Government Agencies or self-regulating entity under applicable law (including, but not limited to, the U.S. Securities and Exchange Commission’s Whistleblower Rule, of Section 21F of the U.S. Securities Exchange Act of 1934, as amended). While this Agreement does not limit your right to receive an award for information provided to the Securities and Exchange Commission, you understand and agree that, to the maximum extent permitted by law, you are otherwise waiving any and all rights you may have to individual relief based on any of the Released Claims and any rights you have waived by signing this Agreement.

15. Representations. You hereby represent that, except for amounts to be paid to you under this Agreement, you have been paid all compensation owed and for all hours worked, have received all the leave and leave benefits and protections for which you are eligible, pursuant to the Family and Medical Leave Act or otherwise, and have not suffered any on-the-job injury for which you have not already filed a claim. You also represent and affirm that all of the decisions of the Released Parties regarding your pay and benefits through the date of your execution of this Agreement were not discriminatory based on age, disability, race, color, sex, religion, national origin or any other classification protected by law. You further affirm that you have not filed, caused to be filed, and are not presently a party to a claim or cause of action against any of the Released Parties. The Company represents that this agreement has been approved by all necessary corporate action and that the Company has the requisite authority to perform its obligations hereunder.

16. Breach. You agree that upon a material breach of this Agreement you will forfeit all amounts paid or owing to you under Section 3(d) of this Agreement. The Company shall also have all other remedies at law or in equity. The parties acknowledge that it may be difficult to assess the damages caused by a violation of the terms of Sections 6, 7 and 8 of this Agreement and further agree that any threatened or actual violation or breach of those Sections of this Agreement will constitute immediate and irreparable injury to the non-breaching party. Therefore, the parties agree that any such breach of this Agreement is a material breach of this Agreement, and, in addition to any and all other damages and remedies available, the non-breaching party shall be entitled to an injunction to prevent violation or breach of this Agreement. The parties agree that if a party is successful in whole or part in any legal or equitable action under this Agreement, that party may recover all of the costs, including reasonable attorneys’ fees, incurred in enforcing the terms of this Agreement.

17. General. This Agreement, including **Exhibits A, B and C**, constitutes the complete, final and exclusive embodiment of the entire agreement between you and the Company with regard to this subject matter, except as expressly provided herein. It is entered into without reliance on any promise or representation, written or oral, other than those expressly contained herein, and it supersedes any other agreements, promises, warranties or representations concerning its subject matter (including but not limited to your Employment Agreement with the Company, except as expressly provided herein). This Agreement may not be modified or amended except in a writing signed by both you and a duly authorized officer of the Company. This Agreement will bind the heirs, personal representatives, successors and assigns of both you and the Company, and inure to the benefit of both you and the Company, their heirs, successors and assigns. If any provision of this Agreement is determined to be invalid or unenforceable, in whole or in part, this determination will not affect any other provision of this Agreement and the provision in question will be modified by the court so as to be rendered enforceable to the fullest extent permitted by law, consistent with the intent of the parties. This Agreement will be deemed to have been entered into and will be construed and enforced in accordance with the laws of the State of Iowa as applied to contracts made and to be performed entirely within Iowa. The parties hereby consent to the sole and exclusive jurisdiction of the state or federal court for Des Moines, Iowa for any actions, suits or proceedings arising out of or relating to this Agreement. Any ambiguity in this Agreement shall not be construed against either party as the drafter. Any waiver of a breach of this Agreement, or rights hereunder, must be in writing to be effective and shall not be deemed to be a waiver of any successive or other breach or rights hereunder. This Agreement may be executed in counterparts which shall be deemed to be part of one original, and facsimile, .PDF and electronic signatures shall be equivalent to original signatures.

Please sign and date this Agreement and return the fully executed Agreement to the Company by September 27, 2019. In addition, the Severance Benefits are subject to your execution and non-revocation of the Release Agreement attached as Exhibit A.

We wish you the best in your future endeavors.

Sincerely,

NEWLINK GENETICS CORPORATION

By: /s/ Bradley Powers

Bradley Powers
Office of the CEO and General Counsel

Exhibit A –Release Agreement

Exhibit B –Options and RSUs Subject to Twelve-Month Acceleration and Extended Exercise Period for Options

UNDERSTOOD AND AGREED:

/s/ Nicholas Vahanian, M.D.

Nicholas Vahanian, M.D.

9/27/2019

Date

EXHIBIT A
RELEASE AGREEMENT

This Release Agreement (the “**Release**” or “**Agreement**”) is made by and between Nicholas Vahanian (“**you**”) and **NewLink Genetics Corporation** (the “**Company**”). This Release was attached to and made part of the Transition Agreement letter to you dated **September 27, 2019** (the “**Transition Agreement**”).

1. Release of Claims. In consideration for the Severance Benefits, including the Salary Continuation Payments, the reimbursement of your COBRA Premiums (or Alternative Cash Payments), the Accelerated Vesting, and all other consideration provided to you by the Company under Section 3 the Transition Agreement that you would not otherwise be entitled to receive (the “**Release Consideration**”), you agree to the terms below.

2. General Release. You hereby generally and completely release the Company and its parent or subsidiary entities, successors, predecessors and affiliates, and its and their directors, officers, employees, consultants, shareholders, agents, attorneys, insurers, affiliates and assigns (collectively, the “**Released Parties**”) of and from any and all claims, liabilities and obligations, both known and unknown, arising from or in any way related to events, acts, conduct, or omissions occurring prior to or on the date you sign this Agreement (collectively, the “**Released Claims**”).

3. Scope of Release. The Released Claims include, but are not limited to: (1) all claims arising from or in any way related to your employment with the Company, or the termination of that employment; (2) all claims related to your compensation or benefits from the Company (except as expressly provided in this Agreement), including but not limited to salary, bonuses, commissions, vacation pay, PTO, expense reimbursement, severance pay, fringe benefits, profit sharing, stock, stock options, or any other ownership or equity interests in the Company; (3) all claims for breach of contract, wrongful termination, and breach of the implied covenant of good faith and fair dealing, including but not limited to any claims arising under or based on your initial employment offer letter or subsequent Employment Agreement (including claims for severance benefits thereunder); (4) all tort claims, including but not limited to claims for battery, negligence, fraud, defamation, emotional distress, and discharge in violation of public policy; and (5) all federal, state, and local statutory claims in all jurisdictions, including but not limited to claims for discrimination, harassment, retaliation, attorneys’ fees, or other claims arising under the federal Civil Rights Act of 1964, the federal Americans with Disabilities Act of 1990, the federal Family and Medical Leave Act, the Equal Pay Act of 1963, the Fair Labor Standards Act, the Age Discrimination in Employment Act of 1967, as amended by the Older Workers Benefit Protection Act (together, the “**ADEA**”), the Employee Retirement Income Security Act of 1974, the Worker Adjustment and Retraining Notification Act (and all similar state and local laws), the Iowa Civil Rights Act of 1965, the Iowa Wage Payment Collection Law, the Texas Commission on Human Rights Act, the Texas Payday Law, the Texas Labor Code, and any statute or regulation administered by the Texas Workforce Commission.

4. Excluded Claims. Notwithstanding the foregoing, the following are not included in the Released Claims (the “**Excluded Claims**”): (1) rights to apply for unemployment insurance benefits; (2) rights to workers’ compensation disability benefits, claims and payments, if applicable;

(3) any rights or claims for indemnification pursuant to any written indemnification agreement with the Company to which you are a party, or under Company bylaws or articles, or under applicable law; (4) any rights which cannot be waived as a matter of law; or (5) any claims for breach of this Agreement. You represent and warrant that, other than the Excluded Claims, you are not aware of any claims you have or may have against any of the Released Parties that are not included in the Released Claims. You and the Company agree that the sole reason for the termination of your employment is a business reorganization which began occurring on or about the week of July 29, 2019. All individuals who are being terminated in this business reorganization will be eligible for benefits based upon their execution of a release substantially similar to the Release Agreement. You are acknowledging by signing this Agreement that you understand that you are eligible for the benefits which you will receive contingent upon your executing the Release Agreement, because you were part of this business reorganization. A description of the employees on the **Senior Executive Team** that this business reorganization will affect is more fully set forth in **Schedule A to the Release Agreement**.

5. ADEA Waiver. You further specifically agree that, as part of the Released Claims, you are releasing any claims that you could assert under the ADEA, as amended (the “**ADEA Waiver**”). You acknowledge that: you are knowingly and voluntarily waiving and releasing any rights you have under the ADEA; that the Release Consideration is being given in partial consideration for the ADEA Waiver; and that the Release Consideration is in addition to anything of value to which you were already entitled. You further acknowledge that you have been advised, as required by the ADEA, that: (1) this ADEA Waiver does not apply to any rights or claims that arise after the date you sign this Agreement; (2) you should consult with an attorney prior to signing this Agreement (although you may choose voluntarily not to do so); (3) you have forty-five (45) days to consider this Agreement (although you may choose voluntarily to sign it earlier); (4) you have seven (7) days following the date you sign this Agreement to revoke the Agreement (in a written revocation provided to and received by the Company’s CEO within the 7-day revocation period); and (5) the Agreement will not be effective until the date upon which the revocation period has expired, which will be the eighth day after you sign this Agreement, provided that you have not timely revoked it (the “**Effective Date**”). You understand and agree that, if you revoke the ADEA Waiver, you will not be entitled to the Release Consideration.

6. Protected Rights. Nothing in this Agreement shall prevent you from challenging the validity of the release of claims provided herein in a legal or administrative proceeding. You further understand that nothing in this Agreement (including, without limitation, Section 8 (Non-Disparagement) and Section 13 (Releases of Claims) above): limits your ability to file a charge or complaint with the Equal Employment Opportunity Commission, the Department of Labor, the National Labor Relations Board, the Occupational Safety and Health Administration, the Securities and Exchange Commission or any other federal, state or local governmental agency or commission (“**Government Agencies**”); prevents any party from providing information or disclosing the fact or terms of this Agreement as part of any government investigation; or prohibits any party from reporting possible violations of law or regulation to any Government Agencies or self-regulating entity under applicable law (including, but not limited to, the U.S. Securities and Exchange Commission’s Whistleblower Rule, of Section 21F of the U.S. Securities Exchange Act of 1934, as amended). While this Agreement does not limit your right to receive an award for information

provided to the Securities and Exchange Commission, you understand and agree that, to the maximum extent permitted by law, you are otherwise waiving any and all rights you may have to individual relief based on any of the Released Claims and any rights you have waived by signing this Agreement.

7. **Miscellaneous.** This Agreement is entered into without reliance on any promise or representation, written or oral, other than those expressly contained herein and in the Transition Agreement, and it supersedes any other such promises, warranties or representations. This Agreement may not be modified or amended except in a writing signed by both you and a duly authorized officer of the Company. This Agreement will bind the heirs, personal representatives, successors and assigns of both you and the Company, and inure to the benefit of both you and the Company, their heirs, successors and assigns. If any provision of this Agreement is determined to be invalid or unenforceable, in whole or in part, this determination will not affect any other provision of this Agreement and the provision in question will be modified by the court so as to be rendered enforceable. This Agreement will be deemed to have been entered into and will be construed and enforced in accordance with the laws of the State of Iowa as applied to contracts made and to be performed entirely within Iowa.

NEWLINK GENETICS CORPORATION

By: /s/ Bradley Powers
Bradley Powers
Office of the CEO and General Counsel

Date _____

Nicholas Vahanian

/s/ Nicolas Vahanian
Signature

Date _____

EXHIBIT B

Options and RSUs Subject to Twelve-Month Acceleration
and Extended Exercise Period for Options

HOLDINGGROUP	PARTICIPANTID	HOLDINGID	PLANSEC	GRANTTYPE	GRANTDATE	NUMBEROFSHARES	GRANTPRICE	SHARESEXERCISED	SHARESVESTED	SHRSCANCWHC	OUTSTANDING	OSEXERCISEABLRSDEFER	CURRENTFMV	FIRSTNAME	LASTNAME	ADDRESSLINE1	ADDRESSLINE2	CITY	STATEORP
Options/SARs	B13470133	100204A	2009 EQUITY INCENTIVE PLAN	ISO	7/31/2019		1.77	0	0	0	22580	0	FMV on 09/26/2019=\$1.62	Nicholas	Vahanian	1723 Glenleven Terrace		West Des Moines	IA
Options/SARs	B13470133	100204NA	2009 EQUITY INCENTIVE PLAN	ISO	7/31/2019		1.77	0	0	0	167896	0	FMV on 09/26/2019=\$1.62	Nicholas	Vahanian	1723 Glenleven Terrace		West Des Moines	IA
Options/SARs	B13470133	100205NA	2009 EQUITY INCENTIVE PLAN	ISO	7/31/2019		1.77	0	0	0	85238	0	FMV on 09/26/2019=\$1.62	Nicholas	Vahanian	1723 Glenleven Terrace		West Des Moines	IA
Options/SARs	B13470133	100326A	2009 EQUITY INCENTIVE PLAN	ISO	7/31/2019		1.77	0	0	0	7143	0	FMV on 09/26/2019=\$1.62	Nicholas	Vahanian	1723 Glenleven Terrace		West Des Moines	IA
Options/SARs	B13470133	100326NA	2009 EQUITY INCENTIVE PLAN	ISO	7/31/2019		1.77	0	0	0	14286	0	FMV on 09/26/2019=\$1.62	Nicholas	Vahanian	1723 Glenleven Terrace		West Des Moines	IA
Options/SARs	B13470133	100503A	2009 EQUITY INCENTIVE PLAN	ISO	7/31/2019		1.77	0	0	0	8880	0	FMV on 09/26/2019=\$1.62	Nicholas	Vahanian	1723 Glenleven Terrace		West Des Moines	IA
Options/SARs	B13470133	100503NA	2009 EQUITY INCENTIVE PLAN	ISO	7/31/2019		1.77	0	0	0	31921	0	FMV on 09/26/2019=\$1.62	Nicholas	Vahanian	1723 Glenleven Terrace		West Des Moines	IA
Options/SARs	B13470133	100684A	2009 EQUITY INCENTIVE PLAN	ISO	7/31/2019		1.77	0	0	0	3129	0	FMV on 09/26/2019=\$1.62	Nicholas	Vahanian	1723 Glenleven Terrace		West Des Moines	IA
Options/SARs	B13470133	100684NA	2009 EQUITY INCENTIVE PLAN	ISO	7/31/2019		1.77	0	0	0	26872	0	FMV on 09/26/2019=\$1.62	Nicholas	Vahanian	1723 Glenleven Terrace		West Des Moines	IA
Options/SARs	B13470133	100719A	2009 EQUITY INCENTIVE PLAN	ISO	7/31/2019		1.77	0	0	0	1710	0	FMV on 09/26/2019=\$1.62	Nicholas	Vahanian	1723 Glenleven Terrace		West Des Moines	IA
Options/SARs	B13470133	100719NA	2009 EQUITY INCENTIVE PLAN	ISO	7/31/2019		1.77	0	0	0	22041	0	FMV on 09/26/2019=\$1.62	Nicholas	Vahanian	1723 Glenleven Terrace		West Des Moines	IA
Options/SARs	B13470133	100947A	2009 EQUITY INCENTIVE PLAN	ISO	7/31/2019		1.77	0	0	0	813	0	FMV on 09/26/2019=\$1.62	Nicholas	Vahanian	1723 Glenleven Terrace		West Des Moines	IA
Options/SARs	B13470133	100947NA	2009 EQUITY INCENTIVE PLAN	ISO	7/31/2019		1.77	0	0	0	19438	0	FMV on 09/26/2019=\$1.62	Nicholas	Vahanian	1723 Glenleven Terrace		West Des Moines	IA
Options/SARs	B13470133	101042A	2009 EQUITY INCENTIVE PLAN	ISO	7/31/2019		1.77	0	0	0	190	0	FMV on 09/26/2019=\$1.62	Nicholas	Vahanian	1723 Glenleven Terrace		West Des Moines	IA
Options/SARs	B13470133	101042B	2009 EQUITY INCENTIVE PLAN	ISO	7/31/2019		1.77	0	0	0	439	0	FMV on 09/26/2019=\$1.62	Nicholas	Vahanian	1723 Glenleven Terrace		West Des Moines	IA
Options/SARs	B13470133	101042NA	2009 EQUITY INCENTIVE PLAN	ISO	7/31/2019		1.77	0	0	0	18246	0	FMV on 09/26/2019=\$1.62	Nicholas	Vahanian	1723 Glenleven Terrace		West Des Moines	IA

HOLDINGGROUP	PARTICIPANTID	HOLDINGID	PLANSEC	GRANTTYPE	GRANTDATE	NUMBEROFSHARES	GRANTPRICE	SHARESEXERCISED	SHARESVESTED	SHRSCANCWHTC	OUTSTANDING	OSEXERCISEABLESDEFER	CURRENTFMV	FIRSTNAME	LASTNAME	ADDRESSLINE1	ADDRESSLINE2	CITY	STATEORFP
Options/SARs	B13470133	101042NB	2009 EQUITY INCENTIVE PLAN	ISO	7/31/2019		1.77	0	0	0	2195	0	FMV on 09/26/2019=\$1.62	Nicholas	Vahanian	1723 Glenleaven Terrace		West Des Moines	IA
Options/SARs	B13470133	101381B	2009 EQUITY INCENTIVE PLAN	ISO	7/31/2019		1.77	0	0	0	3477	0	FMV on 09/26/2019=\$1.62	Nicholas	Vahanian	1723 Glenleaven Terrace		West Des Moines	IA
Options/SARs	B13470133	101381NA	2009 EQUITY INCENTIVE PLAN	ISO	7/31/2019		1.77	0	0	0	48828	0	FMV on 09/26/2019=\$1.62	Nicholas	Vahanian	1723 Glenleaven Terrace		West Des Moines	IA
Options/SARs	B13470133	101381NB	2009 EQUITY INCENTIVE PLAN	ISO	7/31/2019		1.77	0	0	0	25820	0	FMV on 09/26/2019=\$1.62	Nicholas	Vahanian	1723 Glenleaven Terrace		West Des Moines	IA
Options/SARs	B13470133	101666	2009 EQUITY INCENTIVE PLAN	ISO	7/31/2019		1.77	0	0	0	100000	0	FMV on 09/26/2019=\$1.62	Nicholas	Vahanian	1723 Glenleaven Terrace		West Des Moines	IA
Options/SARs	B13470133	800004A	2009 EQUITY INCENTIVE PLAN	ISO	7/31/2019		1.77	0	0	0	19532	0	FMV on 09/26/2019=\$1.62	Nicholas	Vahanian	1723 Glenleaven Terrace		West Des Moines	IA
Options/SARs	B13470133	800005A	2009 EQUITY INCENTIVE PLAN	ISO	7/31/2019		1.77	0	0	0	19532	0	FMV on 09/26/2019=\$1.62	Nicholas	Vahanian	1723 Glenleaven Terrace		West Des Moines	IA
Options/SARs	B13470133	800006A	2009 EQUITY INCENTIVE PLAN	ISO	7/31/2019		1.77	0	0	0	19531	0	FMV on 09/26/2019=\$1.62	Nicholas	Vahanian	1723 Glenleaven Terrace		West Des Moines	IA
Options/SARs	B13470133	800007A	2009 EQUITY INCENTIVE PLAN	ISO	7/31/2019		1.77	0	0	0	19531	0	FMV on 09/26/2019=\$1.62	Nicholas	Vahanian	1723 Glenleaven Terrace		West Des Moines	IA
Options/SARs	B13470133	800013-1B	2009 EQUITY INCENTIVE PLAN	ISO	7/31/2019		1.77	0	0	0	6158	0	FMV on 09/26/2019=\$1.62	Nicholas	Vahanian	1723 Glenleaven Terrace		West Des Moines	IA
Options/SARs	B13470133	800013-1NA	2009 EQUITY INCENTIVE PLAN	ISO	7/31/2019		1.77	0	0	0	10542	0	FMV on 09/26/2019=\$1.62	Nicholas	Vahanian	1723 Glenleaven Terrace		West Des Moines	IA
Options/SARs	B13470133	800013-1NB	2009 EQUITY INCENTIVE PLAN	ISO	7/31/2019		1.77	0	0	0	14926	0	FMV on 09/26/2019=\$1.62	Nicholas	Vahanian	1723 Glenleaven Terrace		West Des Moines	IA
Options/SARs	B13470133	800013-2B	2009 EQUITY INCENTIVE PLAN	ISO	7/31/2019		1.77	0	0	0	5269	0	FMV on 09/26/2019=\$1.62	Nicholas	Vahanian	1723 Glenleaven Terrace		West Des Moines	IA
Options/SARs	B13470133	800013-3B	2009 EQUITY INCENTIVE PLAN	ISO	7/31/2019		1.77	0	0	0	5269	0	FMV on 09/26/2019=\$1.62	Nicholas	Vahanian	1723 Glenleaven Terrace		West Des Moines	IA
Options/SARs	B13470133	800013-4B	2009 EQUITY INCENTIVE PLAN	ISO	7/31/2019		1.77	0	0	0	5275	0	FMV on 09/26/2019=\$1.62	Nicholas	Vahanian	1723 Glenleaven Terrace		West Des Moines	IA
Options/SARs	B13470133	800013-5B	2009 EQUITY INCENTIVE PLAN	ISO	7/31/2019		1.77	0	0	0	7907	0	FMV on 09/26/2019=\$1.62	Nicholas	Vahanian	1723 Glenleaven Terrace		West Des Moines	IA
Options/SARs	B13470133	800013-6A	2009 EQUITY INCENTIVE PLAN	ISO	7/31/2019		1.77	0	0	0	7907	0	FMV on 09/26/2019=\$1.62	Nicholas	Vahanian	1723 Glenleaven Terrace		West Des Moines	IA
Options/SARs	B13470133	800019-1	2009 EQUITY INCENTIVE PLAN	ISO	3/1/2019		1.8	0	11562	0	92500	11562	FMV on 09/26/2019=\$1.62	Nicholas	Vahanian	1723 Glenleaven Terrace		West Des Moines	IA
Options/SARs	B13470133	800019-2	2009 EQUITY INCENTIVE PLAN	PNQ	3/1/2019		1.8	0	0	0	15430	0	FMV on 09/26/2019=\$1.62	Nicholas	Vahanian	1723 Glenleaven Terrace		West Des Moines	IA
Options/SARs	B13470133	800019-3	2009 EQUITY INCENTIVE PLAN	PNQ	3/1/2019		1.8	0	0	0	15410	0	FMV on 09/26/2019=\$1.62	Nicholas	Vahanian	1723 Glenleaven Terrace		West Des Moines	IA

HOLDINGGROUP	PARTICIPANTID	HOLDINGID	PLANSEC	GRANTTYPE	GRANTDATE	NUMBEROFSHARES	GRANTPRICE	SHARESEXERCISED	SHARESVESTED	SHRSCANCWHTC	OUTSTANDING	OSEXERCISEABLESDEFER	CURRENTFMV	FIRSTNAME	LASTNAME	ADDRESSLINE1	ADDRESSLINE2	CITY	STATEORPR
Options/SARs	B13470133	800019-4	2009 EQUITY INCENTIVE PLAN	PNQ	3/1/2019		1.8	0	0	0	15410	0	FMV on 09/26/2019=\$1.62	Nicholas	Vahanian	1723 Glenleaven Terrace		West Des Moines	IA
Options/SARs	B13470133	800019-5	2009 EQUITY INCENTIVE PLAN	PNQ	3/1/2019		1.8	0	0	0	23125	0	FMV on 09/26/2019=\$1.62	Nicholas	Vahanian	1723 Glenleaven Terrace		West Des Moines	IA
Options/SARs	B13470133	800019-6	2009 EQUITY INCENTIVE PLAN	PNQ	3/1/2019		1.8	0	0	0	23125	0	FMV on 09/26/2019=\$1.62	Nicholas	Vahanian	1723 Glenleaven Terrace		West Des Moines	IA
RS Awards	B13470133	300011	2009 EQUITY INCENTIVE PLAN	RSU	1/2/2014			9500	9500	0	0	0	FMV on 09/26/2019=\$1.62	Nicholas	Vahanian	1723 Glenleaven Terrace		West Des Moines	IA
RS Awards	B13470133	300024	2009 EQUITY INCENTIVE PLAN	RSU	1/2/2014			15000	15000	2675	0	0	FMV on 09/26/2019=\$1.62	Nicholas	Vahanian	1723 Glenleaven Terrace		West Des Moines	IA
RS Awards	B13470133	300051	2009 EQUITY INCENTIVE PLAN	RSU	1/2/2015			25000	25000	6686	0	0	FMV on 09/26/2019=\$1.62	Nicholas	Vahanian	1723 Glenleaven Terrace		West Des Moines	IA
RS Awards	B13470133	300075	2009 EQUITY INCENTIVE PLAN	RSU	1/4/2016			22092	22092	7370	7364	0	FMV on 09/26/2019=\$1.62	Nicholas	Vahanian	1723 Glenleaven Terrace		West Des Moines	IA

EXHIBIT C

Proprietary Information Agreement

Incorporated by reference from Exhibit A to Employment Agreement dated January 4, 2016, as filed with the Securities and Exchange Commission as Exhibit 10.32 to the Company's Annual Report on Form 10-K for the year ended December 31, 2018

EMPLOYMENT AGREEMENT

THIS EMPLOYMENT AGREEMENT (the "**Agreement**") is made as of this 30th day of September 2019, by and between NewLink Genetics Corporation (the "**Company**"), and Carl Langren ("**Executive**") (collectively, the "**Parties**", each a "**Party**").

WHEREAS, the Company wishes to continue to employ Executive and to assure itself of Executive's services on the terms set forth herein and to incentivize Executive to remain employed with the Company;

WHEREAS, Executive wishes to be employed by the Company on the terms set forth herein; and

WHEREAS, the Parties intend for this Agreement to set forth all of the terms and conditions of Executive's employment with the Company, and to supersede and replace all prior agreements, arrangements, representations or understandings between the Parties regarding Executive's employment with the Company.

AGREEMENT

NOW, THEREFORE, in consideration of the mutual promises and covenants contained herein, the Parties agree as follows:

- 1. EMPLOYMENT.** The Company will employ Executive and Executive shall serve the Company in the capacity of Chief Financial Officer ("**CFO**").
- 2. DUTIES.** Executive shall render exclusive, full-time services to the Company. Executive shall report to the Company's Chief Executive Officer ("**CEO**") or, if the CEO position is unfilled, to another officer designated by the Board of Directors (the "**Board**") or to the Board itself, as determined by the Board in its sole discretion. (For purposes of this Agreement, the term "CEO" is used generically to refer to the CEO or such other person(s) to whom Executive is assigned to report.) Executive shall perform services under this Agreement primarily at the Company's office in Austin, Texas, and from time to time at such other locations as may be necessary or as otherwise reasonably requested by the Company. Subject to the terms of this Agreement, Executive's responsibilities, working conditions and duties may be changed, expanded or eliminated at the sole discretion of the CEO. Executive shall devote Executive's best efforts and full business time, skill and attention to performance of Executive's duties on behalf of the Company; *provided, however*, that Executive may engage in civic and not-for-profit activities (*e.g.* charitable and industry association activities) as long as such activities do not materially interfere with Executive's obligations hereunder. During Executive's employment with the Company, Executive agrees not to engage in any business or for-profit activities outside the Company, including serving on any advisory boards or boards of directors of for-profit entities, except with the prior written approval of the CEO, which approval may be rescinded at any time in the CEO's sole discretion, provided that in the event of such rescission Executive shall be permitted reasonable time for orderly withdrawal from any board with respect to which such consent has been rescinded. By signing this Agreement, Executive represents that, to the best of Executive's knowledge, Executive is not subject to any other contract or duty that would interfere in any way with Executive's employment with the Company or performance of employment duties hereunder.
- 3. POLICIES AND PROCEDURES.** Executive shall be subject to and will comply with the policies and procedures of the Company, as they may be modified, expanded or eliminated from time to time at the Company's sole discretion, except to the extent any such policy or procedure specifically conflicts with the express terms of this Agreement (in which case, this Agreement shall control).
- 4. BASE SALARY.** For services rendered hereunder, Executive shall receive a base salary at the rate of \$370,500 per year ("**Base Salary**"), paid periodically in accordance with ordinary Company payroll.

practices, subject to applicable payroll withholdings and deductions. Executive's Base Salary shall also be subject to annual reviews and periodic adjustment; provided that Executive's Base Salary may not be decreased without Executive's express written consent except in connection with an across-the-board reduction proportionally affecting all senior executives of the Company.

5. **BONUS.** Executive will be eligible to receive an annual performance bonus ("**Bonus**"), with a target level at forty percent (40%) of Executive's Base Salary (the "**Bonus Target**"), with the annual amount of such Bonus to be determined in the sole discretion of the Company's Board of Directors (the "**Board**") or by its Compensation Committee (under authority delegated by the Board), based upon a review of both Executive's individual performance and the Company's performance (both of which may include, but are not limited to, achievement of certain milestones or performance objectives, if any, established by the Board or the Compensation Committee (the "**Bonus Plan**")). The Board or the Compensation Committee, in their sole discretion, shall determine the extent to which Executive has achieved any performance targets or other terms and conditions applicable to the Bonus; the amount of the Bonus (if any); and whether and to what extent a Bonus may be paid with respect to any year during which Executive's employment terminates, subject to the terms and conditions of this Agreement. Bonuses are not earned until they are approved in writing by the Board or Compensation Committee. Any Bonuses earned shall be paid subject to applicable employment taxes, withholding and deductions. Except as otherwise expressly provided in this Agreement or in the Bonus Plan, Executive must remain continuously employed with the Company through the date a Bonus is approved in order to be eligible to receive such Bonus.

6. **STOCK OPTIONS.** Executive currently holds certain stock options and/or Restricted Stock Units (collectively the "**Equity Awards**"), subject to the vesting schedule and all other terms, conditions and limitations applicable to such stock, stock options and/or Restricted Stock Units as set forth in the Company's 2009 Equity Incentive Plan as it may be amended from time to time (the "**Equity Plan**") and in Stock Award Agreements (as defined in the Equity Plan) approved by the Board and entered into by Executive. Executive may receive additional equity grants from time to time, in the sole discretion of the Board or a designated committee thereof.

7. **OTHER BENEFITS.** While employed by the Company pursuant to this Agreement, Executive shall be entitled to the following benefits:

(a) **Executive Benefits.** The Executive shall be entitled to all benefits to which other executive officers of the Company are entitled, on the same terms and conditions in effect from time to time, including, without limitation, participation in pension and profit sharing plans, the Company's 401(k) plan, group insurance policies and plans (including medical, health, vision, and disability insurance policies and plans, and the like) which may be maintained by the Company for the benefit of its executives. The Company reserves the right to alter, discontinue and/or amend its benefit plans and programs from time to time in its sole discretion.

(b) **Expense Reimbursement.** The Executive shall receive, upon presentation of proper receipts and vouchers, reimbursement for direct and reasonable out-of-pocket expenses incurred in connection with the performance of Executive's duties hereunder, in accordance with the Company's expense reimbursement policies and procedures in effect from time to time.

(c) **Paid Time Off.** Executive will accrue fifty-six (56) days of paid time off ("**PTO**") each full year, accrued in bi-weekly increments (on the Company's regular payroll schedule), subject to Executive's continuing service. Unused PTO will carry over from year-to-year; provided, however, that Executive shall not be entitled to "carry over" more than fifty-six (56) days of accrued unused PTO from year-to-year (the "**PTO Carryover Cap**"). Upon termination of employment for any reason, Executive shall be paid out (at Executive's last rate of pay) for Executive's then accrued unused PTO amount, up to a maximum of Executive's PTO Carryover Cap, less applicable payroll deductions and withholdings. Except as provided herein, Executive's PTO rights shall be governed by the Company's PTO policy and applicable law, as in effect from time to time; provided, however, that in the event of a conflict between this Agreement and the Company's governing PTO policy, this Agreement will control.

8. **CONFIDENTIAL INFORMATION, RIGHTS AND DUTIES.**

(a) **Proprietary Information.** Executive acknowledges and agrees to abide by all duties and obligations under his Proprietary Information, Inventions, Non-Competition and Non-Solicitation Agreement with the Company (the "**Proprietary Information Agreement**"), attached hereto as **Exhibit A**.

(b) **Exclusive Property.** Executive agrees that all Company-related business procured by the Executive, and all Company-related business opportunities and plans made known to Executive while employed by the Company, are and shall remain the permanent and exclusive property of the Company.

9. **TERMINATION OF EMPLOYMENT.**

(a) **At-Will Status.** The Company and Executive understand and agree that this employment relationship is at-will. Accordingly, there are no promises or representations concerning the duration of Executive's employment relationship, and it may be terminated by either Executive or the Company at any time, with or without Cause or Good Reason (as defined herein), and with or without advance notice. Executive's at-will status cannot be altered except in an express written agreement signed by Executive and the Company with the specific approval of the Company's Board.

(b) **Termination Due to Death or Disability.** Subject to applicable state or federal law, Executive's employment with the Company will automatically terminate upon Executive's death or a physical or mental disability or condition which renders Executive unable to perform the essential functions of Executive's position (with or without accommodation) for more than six (6) months in any twelve (12) month period, or for more than four (4) consecutive months. This provision shall be interpreted and construed in accordance with the federal Americans with Disabilities Act of 1990 and all other applicable laws.

(c) **Resignation by Executive.** Executive may resign from the Company with or without Good Reason. The Company requests that Executive provide at least three (3) weeks advance written notice of a termination without Good Reason to allow for an orderly transition. The Company may accelerate the date Executive's resignation is to become effective, in its sole discretion. In the event the Company accelerates the resignation effective date, the Executive will be paid Base Salary severance through the originally tendered resignation date, provided that in no such event will Executive be entitled to receive more than three (3) months of Base Salary severance beyond the accelerated resignation date.

(d) **Definition of Cause.** For purposes of this Agreement, "**Cause**" for the Company to terminate Executive shall mean: (i) Executive's incompetence or failure or refusal to perform satisfactorily any duties reasonably required of Executive by the Company (other than by reason of Disability), which failure continues for fifteen (15) days after Executive receives specific written notice to cure; (ii) Executive's conviction or plea of guilty or *nolo contendere* to any felony or to any other crime involving dishonesty or moral turpitude; (iii) any act or omission which constitutes a material breach of this Agreement, the Proprietary Information Agreement, the Company's policies, or Executive's fiduciary duty to the Company; (iv) any act or omission in connection with Executive's employment with the Company, which involves material personal dishonesty by Executive or demonstrates a willful or continuing disregard for the best interests of the Company; or (v) Executive's engaging in dishonorable or disruptive behavior, practices or acts which cause, or could be reasonably expected to cause, material harm or bring disrepute to the Company.

(e) **Definition of Good Reason.** For purposes of this Agreement, "**Good Reason**" means the occurrence of any of the following without Executive's prior written consent: (i) a reduction in Executive's Base Salary or benefits that materially diminishes the aggregate value of Executive's compensation and benefits, unless a reduction is made in connection with an across-the-board reduction of all executives' base salaries and/or employee benefits by a percentage less than 20% and at least equal to the percentage by which Executive's Base Salary or employee benefits are reduced; (ii) in the event of such an across-the-board reduction and a subsequent across-the-board restoration of all or any portion of the reduced Base Salary or benefits, then a failure to restore Executive's Base Salary or benefits in at least a proportional manner; (iii) a material reduction of Executive's Bonus Target level; (iv) a material reduction in Executive's duties, authority or responsibilities taken as a whole; or (v) a relocation of

Executive's principal place of employment that would result in an increase in Executive's one-way commute by more than 30 miles. Notwithstanding the foregoing, "**Good Reason**" for Executive to resign shall not exist unless: (x) Executive provides the Company with specific written notice of the existence of the condition giving rise to Good Reason within ninety (90) days after its initial occurrence; (y) the Company fails to remedy such condition within thirty (30) days after its receipt of such written notice; and (z) Executive resigns within sixty (60) days after the cure period has lapsed. (For avoidance of doubt, the requirement that Executive report to another officer or to the Board while the CEO position is vacant shall not constitute Good Reason for resignation.)

(f) **Final Pay upon Termination for Any Reason.** Except as otherwise provided by this Agreement and/or required by law, upon termination of Executive's employment for any reason, the Company's obligation to make payments hereunder shall cease, except that the Company shall pay all amounts due and payable for Executive's services through Executive's last day of employment (the "**Separation Date**"), including all accrued unpaid Base Salary and Bonus compensation earned through the Separation Date, any benefits accrued prior to the Separation Date, all accrued but unused vacation as of the Separation Date, and any reimbursable business expenses incurred but not reimbursed as of the Separation Date.

(g) **Severance Benefits (No Change in Control).**

(i) **Severance Benefits upon a Covered Termination.** If Executive's employment is terminated by the Company without Cause, or due to Executive's death or Disability, or as a result of Executive's resignation for Good Reason (each a "**Covered Termination**"), Executive (or Executive's estate, as applicable) shall be eligible to receive the following severance benefits: (1) payment of an amount equal to twelve (12) months of Executive's Base Salary in effect immediately prior to the Separation Date, less applicable payroll tax withholdings and deductions (the "**Severance**"); (2) twelve (12) months of accelerated vesting of Executive's Equity Awards (so that Executive becomes vested in the portion of the Equity Awards that would have become vested if Executive remained employed for 365 days after the Separation Date); and (3) a twelve (12) month extension of the exercise period applicable to the Equity Awards so that Executive has 365 days after the Separation Date to exercise any vested Equity Awards (including, for avoidance of doubt, any portion of such awards that became vested as a result of the foregoing accelerated vesting benefit) (the "**Extended Exercise Period**"). For avoidance of doubt, to the extent that any performance criteria under any Equity Award has not been satisfied as of the Separation Date, such Equity Awards shall terminate as of the Separation Date and shall not be subject to the foregoing accelerated vesting benefit. The foregoing Extended Exercise Period benefit may convert Equity Awards that were incentive stock options into non-statutory stock options. Executive should consult with an independent tax advisor for additional guidance. Except for the accelerated vesting and Extended Exercise Period benefits set forth herein, all existing terms and conditions applicable to the Equity Awards shall remain in full force and effect. In addition, provided Executive timely elects to continue Executive's group health insurance coverage after the Separation Date pursuant to the federal COBRA law or, if applicable, state insurance laws (collectively, "**COBRA**"), and the terms of the governing health insurance policies, the Company will reimburse the monthly COBRA health insurance premiums (the "**COBRA Payments**")

Executive pays to continue Executive's health insurance coverage (including dependent coverage) for twelve (12) months after the Separation Date or until such earlier date as Executive either becomes eligible for group health insurance coverage through a new employer or ceases to be eligible for COBRA coverage (the "**COBRA Payment Period**"). Executive must submit to the Company appropriate documentation of the foregoing health insurance payments, within sixty (60) days of making such payments, in order to be reimbursed. Notwithstanding the foregoing, if the Company determines, in its sole discretion, that it cannot pay the COBRA Payments without a substantial risk of violating applicable law (including, without limitation, Section 2716 of the Public Health Service Act), at the end of each remaining month of the COBRA Payment Period, the Company shall pay Executive directly a taxable monthly amount which, after taxes, equals the COBRA Payment amount the Company would have otherwise paid to Executive (assuming a 35% tax rate). Executive agrees to promptly notify the Company in writing if Executive becomes eligible for group health insurance coverage through a new employer before the end of the specified reimbursement period. For sake of reference, all severance benefits provided in this subsection 9(g)(i) are referred to collectively as the "**Severance Benefits.**"

(ii) **Protected Resignation.** If (1) Executive voluntarily resigns without Good Reason at any time after delivery of the Company's audited financial statements for 2019 to be completed in early 2020 and (2) Executive provides at least thirty (30) days advance written notice of such resignation and (3) Executive is not eligible for the benefits set forth in Section 10 below at the time of such resignation, (a "Protected Resignation") then, Executive shall be eligible to receive all of the Severance Benefits available to Executive upon a Covered Termination on the same terms as set forth in subsection (g)(i) above.

(iii) **Preconditions.** As a precondition to receiving any Severance Benefits, Executive must (1) remain in compliance with all continuing obligations Executive owes to the Company, including those set forth under Executive's Proprietary Information Agreement, and (2) within twenty-one (21) days after the Separation Date, Executive (or Executive's estate, as applicable) must sign and return to the Company, a separation agreement and release of claims in substantially the form attached hereto as **Exhibit B** (the "Release") and allow the Release to become fully-effective and non-revocable by its terms. The Severance will be paid in the form of continuing salary installment payments, paid on the Company's ordinary payroll schedule starting immediately after the Separation Date; *provided, however*, that any payments that would be paid prior to the date the Release becomes fully effective and non-revocable (the "Effective Date"), shall be delayed and paid in full on the first payroll date after the Effective Date. (For avoidance of doubt, no Severance Benefits will be paid under any circumstances if the foregoing preconditions are not satisfied, or if Executive's employment ends because of a termination for Cause.)

10. **Change In Control Benefits.**

(a) **Change in Control Termination.** If Executive's employment with the Company is terminated by the Company without Cause (but not due to Executive's death or Disability) or Executive resigns with thirty (30) day notice and such termination or resignation occurs (A) within one (1) month before, or within thirteen (13) months after a Change in Control (defined below) or (B) on or before the thirteen month anniversary of the "Closing" as defined in the Agreement and Plan of Merger and Reorganization between NewLink Genetics Corporation, Cyclone Merger Sub, Inc. and Lumos Pharma, Inc. (the "Lumos Transaction") (each a "CIC Termination"), Executive shall be eligible to receive the following enhanced severance package (in lieu of the Severance Benefits described above): (i) payment of eighteen (18) months of Executive's Base Salary as in effect immediately prior to the Separation Date, less applicable withholdings and deductions; (ii) payment of a bonus in an amount equal to the most recently paid Bonus as described in Section 5 above multiplied by 1.5, less applicable withholdings and deductions (the payments under clauses (i) and (ii) referred to as the "CIC Cash Severance"); (iii) accelerated vesting of Executive's Equity Awards so that Executive becomes one hundred percent (100%) vested in all such Equity Awards; and (iv) a twenty-four (24) month extension of the exercise period applicable to the Equity Awards so that Executive has 730 days after the Separation Date to exercise any vested Equity Awards (including, for avoidance of doubt, any portion of such awards that became vested as a result of the foregoing accelerated vesting benefit). As set forth above, this extended exercise period benefit may convert any stock options that were incentive stock options into non-qualified stock options, and Executive is advised to consult with an independent tax advisor for additional guidance. Except for the foregoing accelerated vesting benefit, all existing terms and conditions applicable to the Equity Awards shall remain in full force and effect. In addition, provided Executive timely elects to continue Executive's group health insurance coverage after the Separation Date pursuant to COBRA, and the terms of the governing health insurance policies, the Company will reimburse all monthly COBRA health insurance premiums the Executive pays to continue Executive's health insurance coverage (including dependent coverage) for eighteen (18) months after the Separation Date or until such earlier date as Executive either becomes eligible for group health insurance coverage through a new employer or Executive ceases to be eligible for COBRA coverage. These CIC severance benefits shall be paid subject to the same preconditions and on the same terms and conditions applicable to the Severance Benefits; provided, however, that the CIC Cash Severance shall be paid in a lump sum within ten (10) business days of the Effective Date of the Release required under Section 9(g)(ii) (Preconditions).

(b) **Definition of Change in Control.** For purposes of this Agreement, "Change in Control" has the definition set forth in the Equity Plan. For the avoidance of doubt, the Lumos Transaction shall be deemed a Change in Control for purposes of this Agreement.

11. **CODE SECTION 409A COMPLIANCE.** Notwithstanding anything set forth in this Agreement to the contrary, any payments and benefits provided pursuant to this Agreement which constitute “deferred compensation” within the meaning of the Treasury Regulations issued pursuant to Section 409A shall not commence until Executive has incurred a “separation from service” (as such term is defined in the Treasury Regulation Section 1.409A-1(h) (“**Separation From Service**”), unless the Company reasonably determines that such amounts may be provided to Executive without causing Executive to incur the additional 20% tax under Section 409A.

For the avoidance of doubt, it is intended that the payments and benefits set forth in this Agreement satisfy, to the greatest extent possible, the exemptions from the application of Section 409A provided under Treasury Regulation Sections 1.409A-1(b)(4), 1.409A-1(b)(5) and 1.409A-1(b)(9) and this Agreement will be construed to the greatest extent possible as consistent with those provisions. To the extent not so exempt, this Agreement (and any definitions hereunder) will be construed in a manner that complies with Section 409A and incorporates by reference all required definitions and payment terms. For purposes of Section 409A (including, without limitation, for purposes of Treasury Regulation Section 1.409A-2(b)(2)(iii)), Executive’s right to receive any installment payments under this Agreement (whether severance payments, reimbursements or otherwise) shall be treated as a right to receive a series of separate payments and, accordingly, each installment payment hereunder shall at all times be considered a separate and distinct payment. Notwithstanding any provision to the contrary in this Agreement, if the Company (or, if applicable, the successor entity thereto) determines that any payments upon Executive’s Separation From Service set forth herein and/or under any other agreement with the Company constitute “deferred compensation” under Section 409A and Executive is, on Executive’s Separation From Service, a “specified employee” of the Company or any successor entity thereto, as such term is defined in Section 409A(a)(2)(B)(i) of the Code, then, solely, to the extent necessary to avoid the incurrence of the adverse personal tax consequences under Section 409A, the timing of the payments upon Executive’s Separation From Service shall be delayed until the earlier to occur of: (a) the date that is six months and one day after Executive’s Separation From Service or (b) the date of Executive’s death (such applicable date, the “**Specified Employee Initial Payment Date**”). On the Specified Employee Initial Payment Date, the Company (or the successor entity thereto, as applicable) shall (A) pay to Executive a lump sum amount equal to the sum of the payments upon Executive’s Separation From Service that Executive would otherwise have received through the Specified Employee Initial Payment Date if the commencement of the payment of the severance benefits had not been so delayed pursuant to this section and (B) commence paying the balance of the severance benefits in accordance with the applicable payment schedules set forth in this Agreement.

None of the severance benefits under this Agreement will commence or otherwise be delivered prior to the effective date of the Release. If the period of time Executive has to execute the Release “crosses over” two (2) calendar years, the Release will be deemed to have been executed on the twenty-first (21st) day after the Separation Date. Except to the minimum extent that payments must be delayed because Executive is a “specified employee” (as described above) or until the effectiveness of the Release, all amounts will be paid as soon as practicable in accordance with the Company’s normal payroll practices and no interest will be due on any amounts so deferred.

12. **BETTER AFTER-TAX PROVISION.** If any payment or benefit that Executive will or may receive from the Company or otherwise (a “**280G Payment**”) would (i) constitute a “parachute payment” within the meaning of Section 280G of the Code, and (ii) but for this sentence, be subject to the excise tax imposed by Section 4999 of the Code (the “**Excise Tax**”), then any such 280G Payment will be equal to the Reduced Amount. The “**Reduced Amount**” will be either (x) the largest portion of the 280G Payment that would result in no portion of the 280G Payment (after reduction) being subject to the Excise Tax or (y) the largest portion, up to and including the total, of the 280G Payment, whichever amount (*i.e.*, the amount determined by clause (x) or by clause (y)), after taking into account all applicable federal, state and local employment taxes, income taxes, and the Excise Tax (all computed at the highest applicable marginal rate), results in Executive’s receipt, on an after-tax basis, of the greater economic benefit notwithstanding that all or some portion of the 280G Payment may be subject to the Excise Tax. If a reduction in a 280G Payment is required pursuant to the preceding sentence and the Reduced Amount is determined pursuant to clause (x) of the preceding sentence, the reduction will occur in the manner (the “**Reduction Method**”) that results in the greatest economic benefit for Executive. If more than one method of reduction will result in the same economic benefit, the items so reduced will be reduced pro rata (the “**Pro Rata Reduction Method**”).

Notwithstanding the foregoing, if the Reduction Method or the Pro Rata Reduction Method would result in any

portion of the 280G Payment being subject to taxes pursuant to Section 409A of the Code that would not otherwise be subject to taxes pursuant to Section 409A of the Code, then the Reduction Method and/or the Pro Rata Reduction Method, as the case may be, will be modified so as to avoid the imposition of taxes pursuant to Section 409A of the Code as follows: (A) as a first priority, the modification will preserve, to the greatest extent possible, the greatest economic benefit for Executive as determined on an after-tax basis; (B) as a second priority, 280G Payments that are contingent on future events (*e.g.*, being terminated without Cause), will be reduced (or eliminated) before 280G Payments that are not contingent on future events; and (C) as a third priority, 280G Payments that are “deferred compensation” within the meaning of Section 409A of the Code will be reduced (or eliminated) before 280G Payments that are not “deferred compensation” within the meaning of Section 409A of the Code.

If Section 280G of the Code is not applicable by law to Executive, the Company will determine whether any similar law in Executive’s jurisdiction applies and should be taken into account.

The independent professional firm engaged by the Company for general tax audit purposes as of the day prior to the effective date of the Change in Control will make all determinations required to be made under this Section. If the firm so engaged by the Company is serving as accountant or auditor for the individual, entity or group effecting the Change in Control, the Company will appoint a nationally recognized independent professional firm to make the determinations required hereunder. The Company will bear all expenses with respect to the determinations by such firm required to be made hereunder. The Company will use commercially reasonable efforts to cause the firm engaged to make the determinations hereunder to provide its calculations, together with detailed supporting documentation, to the Company and Executive within thirty (30) calendar days after the date on which Executive’s right to a 280G Payment becomes reasonably likely to occur (if requested at that time by the Company or Executive) or such other time as requested by the Company or Executive.

If Executive receives a 280G Payment for which the Reduced Amount was determined pursuant to clause (x) of the first paragraph of this Section and the Internal Revenue Service determines thereafter that some portion of the 280G Payment is subject to the Excise Tax, Executive will promptly return to the Company a sufficient amount of the 280G Payment (after reduction pursuant to clause (x) of the first paragraph of this Section) so that no portion of the remaining 280G Payment is subject to the Excise Tax. For the avoidance of doubt, if the Reduced Amount was determined pursuant to clause (y) of the first paragraph of this Section, Executive will have no obligation to return any portion of the 280G Payment pursuant to the preceding sentence.

13. **MISCELLANEOUS.**

(a) **Taxes.** Executive shall be responsible for the payment of any taxes due on any and all compensation, stock option, or benefit provided by the Company pursuant to this Agreement which are not withheld by the Company. Executive agrees to indemnify and hold harmless the Company from any and all claims or penalties asserted against the Company arising from Executive’s failure to pay taxes due on any compensation, stock option, or benefit provided by the Company pursuant to this Agreement. Executive expressly acknowledges that the Company has not made any representation about the tax consequences of any consideration provided by the Company to Executive pursuant to this Agreement.

(b) **Modification/Waiver.** This Agreement may not be amended, modified, superseded, canceled, renewed or expanded, or any terms or covenants hereof waived, except by a writing executed by each of the Parties or, in the case of a waiver, by the Party waiving compliance. Failure of any Party at any time to require performance of any provision hereof shall in no manner affect his, her or its right at a later time to enforce such provision. No waiver by a Party of a breach of this Agreement shall be deemed to be or construed as a waiver of any other breach of any term or condition contained in the Agreement.

(c) **Successors and Assigns.** This Agreement may be assigned by the Company to an affiliated entity or to any successor or assignee of the Company with or without Executive’s consent. This Agreement shall not be assignable by Executive.

(d) **Notices.** All notices to be given hereunder shall be in writing and shall be deemed to have been duly

given on: the date personally or hand delivered; one (1) day after being sent by internationally- recognized overnight delivery courier; and three (3) days after being sent by certified mail, return receipt requested. Notices mailed to Executive shall be sent to Executive's last home address as reflected in the Company's personnel records. Executive promptly shall notify Company of any change in Executive's address. Notices to be issued to the Company shall be directed to the Company's CEO, and shall be mailed to the Company's headquarters.

(e) **Dispute Resolution.** To aid in the rapid and economical resolution of any disputes that may arise in the course of Executive's employment relationship, the Parties agree that any and all disputes, claims, or demands arising from or relating to the terms of this Agreement (including but not limited to the Proprietary Information Agreement incorporated by reference herein), Executive's employment relationship with the Company, or the termination of that relationship (including statutory claims), shall be resolved, to the fullest extent permitted by law, by final, binding and confidential arbitration in Austin, Texas conducted before a single neutral arbitrator by JAMS, Inc. ("JAMS") or its successor, under the then applicable JAMS Arbitration Rules and Procedures for Employment Disputes (available at <http://www.jamsadr.com/rules-employment-arbitration/>) and subject to JAMS' Policy on Employment Arbitration Minimum Standards of Procedural Fairness. **The Parties acknowledge that by agreeing to this arbitration procedure, they waive the right to resolve any such dispute, claim or demand through a trial by jury or judge or by administrative proceeding.** Executive will have the right to be represented by legal counsel at any arbitration proceeding, at Executive's expense. The arbitrator shall: (a) have authority to compel adequate discovery for the resolution of the dispute and to award such relief as would otherwise be available under applicable law in a court proceeding; (b) issue a written statement signed by the arbitrator regarding the disposition of each claim and the relief, if any, awarded as to each claim, the reasons for the award, and the arbitrator's essential findings and conclusions on which the award is based; and (c) have authority to, in the arbitrator's discretion, award recovery of attorneys' fees and costs to the prevailing party. The Company shall pay all JAMS' arbitration fees. Nothing in this Agreement is intended to prevent either Party from obtaining injunctive relief in a court of applicable jurisdiction to prevent irreparable harm pending the conclusion of any arbitration; or from enforcing any arbitration award in a court of applicable jurisdiction.

(f) **Entire Agreement.** This Agreement, together with the Exhibits, sets forth the complete and exclusive agreement and understanding of the Parties with regard to the subject matter hereof, and supersedes any and all prior or contemporaneous agreements, promises, representations, or communications, written or oral, pertaining to the subject matter hereof (including, without limitation, the Executive's July 26, 2018 Employment Agreement with the Company). If any provision of this Agreement is determined to be invalid or unenforceable, in whole or in part, this determination will not affect any other provision of this Agreement, and the invalid or unenforceable provision shall be modified to render it valid and enforceable consistent with the intent of the parties insofar as possible under applicable law. For purposes of construing this Agreement, any ambiguities shall not be construed against any party as the drafter. This Agreement may be executed in counterparts, which shall be deemed to be part of one original, and facsimile signatures, signatures transmitted by .PDF, as well as electronic signatures, shall be equivalent to original signatures. The validity, interpretation, construction and performance of this Agreement shall be governed by the laws of the State of Iowa, without regard to conflict of laws principles.

IN WITNESS WHEREOF, the Parties have each duly executed this Agreement as of the date written above to indicate their understanding and acceptance of all of the above-stated terms and conditions.

NEWLINK GENETICS CORPORATION

By: /s/Brad Powers

Its: General Counsel

EXECUTIVE /s/Carl Langren

EXHIBIT A

EMPLOYEE PROPRIETARY INFORMATION AGREEMENT

EMPLOYEE PROPRIETARY INFORMATION AND INVENTIONS AGREEMENT

This Employee Proprietary Information, Inventions, Non-competition, and Non-solicitation Agreement (this

“Agreement”) is made in consideration for my employment or continued employment by NewLink Genetics Corporation or any of its subsidiaries (the “Company”), and the compensation now and hereafter paid to me. I hereby agree as follows:

1. **NONDISCLOSURE.**

1.1 Recognition of Company’s Rights; Nondisclosure. At all times during my employment and thereafter, I will hold in strictest confidence and will not disclose, use, lecture upon or publish any of the Company’s Proprietary Information (defined below), except as such disclosure, use or publication may be required in connection with my work for the Company, or unless an officer of the Company expressly authorizes such in writing. I will obtain Company’s written approval before publishing or submitting for publication any material (written, verbal, or otherwise) that relates to my work at Company and/or incorporates any Proprietary Information. I hereby assign to the Company any rights I may have or acquire in such Proprietary Information and recognize that all Proprietary Information shall be the sole property of the Company and its assigns.

1.2 Proprietary Information. The term “**Proprietary Information**” shall mean any and all confidential and/or proprietary knowledge, data or information of the Company. By way of illustration but not limitation, “Proprietary Information” includes (a) tangible and intangible information relating to antibodies and other biological materials, cell lines, samples of assay components, media and/or cell lines and procedures and formulations for producing any such assay components, media and/or cell lines, formulations, products, processes, know-how, designs, formulas, methods, developmental or experimental work, clinical data, improvements, discoveries, plans for research, new products, marketing and selling, business plans, budgets and unpublished financial statements, licenses, prices and costs, suppliers and customers, and information regarding the skills and compensation of other employees of the Company; (b) trade secrets, inventions, mask works, ideas, processes, formulas, source and object codes, data, programs, other works of authorship, know-how, improvements, discoveries, developments, designs and techniques (hereinafter collectively referred to as “Inventions”); (c) information regarding plans for research, development, new products, marketing and selling, business plans, budgets and unpublished financial statements, licenses, prices and costs, suppliers and customers; and (d) information regarding the skills and compensation of other employees of the Company. Notwithstanding the foregoing, it is understood that, at all such times, I am free to use information which is generally known in the trade or industry, which is not gained as result of a breach of this Agreement, and my own, skill, knowledge, know-how and experience to whatever extent and in whichever way I wish.

1.3 Third Party Information. I understand, in addition, that the Company has received and in the future will receive from third parties confidential or proprietary information (“Third Party Information”) subject to a duty on the Company’s part to maintain the confidentiality of such information and to use it only for certain limited purposes. During the term of my employment and thereafter, I will hold Third Party Information in the strictest confidence and will not disclose to anyone (other than Company personnel who need to know such information in connection with their work for the Company) or use, except in connection with my work for the Company, Third Party Information unless expressly authorized by an officer of the Company in writing.

1.4 No Improper Use of Information of Prior Employers and Others. During my employment by the Company I will not improperly use or disclose any confidential information or trade secrets, if any, of any third party, including but not limited to any former employer or any other person or entity to whom I have an obligation of confidentiality, and I will not bring onto the premises of the Company any unpublished documents or any property belonging to any third party, including but not limited to any former employer or any other person or entity to whom I have an obligation of confidentiality unless consented to in writing by that third party. I will use in the performance of my duties only information which is generally known and used by persons with training and experience comparable to my own, which is common knowledge in the industry or otherwise legally in the public domain, or which is otherwise provided, obtained, or developed by or for the Company.

2. **ASSIGNMENT OF INVENTIONS.**

2.1 Proprietary Rights. The term “**Proprietary Rights**” shall mean all trade secret, patent, copyright, mask work and other intellectual property rights throughout the world.

2.2 Prior Inventions. Inventions, if any, patented or unpatented, which I made prior to the commencement of my employment with the Company are excluded from the scope of this Agreement. To preclude any possible uncertainty, I have set forth on *Exhibit A* (Previous Inventions) attached hereto a complete list of all Inventions that I have, alone or jointly with others, conceived, developed or reduced to practice or caused to be conceived, developed or reduced to practice prior to the commencement of my employment with the Company, that I consider to be my property or the property of third parties and that I wish to have excluded from the scope of this Agreement (collectively referred to as “**Prior Inventions**”). If disclosure of any such Prior Invention would cause me to violate any prior confidentiality agreement, I understand that I am not to list such Prior Inventions in Exhibit A but am only to disclose a cursory name for each such invention, a listing of the party (ies) to whom it belongs and the fact that full disclosure as to such inventions has not been made for that reason. A space is provided on Exhibit A for such purpose. If no such disclosure is attached, I represent that there are no Prior Inventions. If, in the course of my employment with the Company, I incorporate a Prior Invention into a Company product, process or machine, the Company is hereby granted and shall have a nonexclusive, royalty-free, irrevocable, perpetual, worldwide license (with rights to sublicense through multiple tiers of sublicensees) to make, have made, modify, use and sell such Prior Invention. Notwithstanding the foregoing, I agree that I will not incorporate, or permit to be incorporated, Prior Inventions in any Company Inventions without the Company’s prior written consent.

2.3 Assignment of Inventions. Subject to Sections 2.4, and 2.6, I hereby assign and agree to assign in the future (when any such Inventions or Proprietary Rights are first reduced to practice or first fixed in a tangible medium, as applicable) to the Company all my right, title and interest in and to any and all Inventions (and all Proprietary Rights with respect thereto) whether or not patentable or registrable under copyright or similar statutes, made or conceived or reduced to practice or learned by me, either alone or jointly with others, during the period of my employment with the Company. Inventions assigned to the Company, or to a third party as directed by the Company pursuant to this Section 2, are hereinafter referred to as “Company Inventions.”

2.4 Nonassignable Inventions. I recognize that, in the event of a specifically applicable state law, regulation, rule, or public policy (“Specific Inventions Law”), this Agreement will not be deemed to require assignment of any invention which qualifies fully for protection under a Specific Inventions Law by virtue of the fact that any such invention was, for example, developed entirely on my own time without using the Company’s equipment, supplies, facilities, or trade secrets and neither related to the Company’s actual or demonstrably anticipated business, research or development, nor resulted from work performed by me for the Company. In the absence of a Specific Inventions Law, the preceding sentence will not apply.

2.5 Obligation to Keep Company Informed. During the period of my employment with the Company, I will promptly disclose to the Company fully and in writing all Inventions authored, conceived or reduced to practice by me, either alone or jointly with others; and all patent applications filed by me or on my behalf. At the time of each such disclosure, I will advise the Company in writing of any Inventions that I believe fully qualify for protection under the provisions of a Specific Inventions Law; and I will at that time provide to the Company in writing all evidence necessary to substantiate that belief. The Company will keep in confidence and will not use for any purpose or disclose to third parties without my consent any confidential information disclosed in writing to the Company pursuant to this Agreement relating to Inventions that qualify fully for protection under a Specific Inventions Law. I will preserve the confidentiality of any Invention that does not fully qualify for protection under a Specific Inventions Law.

2.6 Government or Third Party. I also agree to assign all my right, title and interest in and to any particular Company Invention to a third party, including without limitation the United States, as directed by the Company.

2.7 Works for Hire. I acknowledge that all original works of authorship which are made by me (solely or jointly with others) within the scope of my employment at the Company and which are protectable by copyright are “works made for hire,” pursuant to United States Copyright Act (17 U.S.C., Section 101).

2.8 Enforcement of Proprietary Rights.

(i) **Obligation to Assist.** I will assist the Company in every proper way to obtain, and from time to time enforce, United States and foreign Proprietary Rights relating to Company Inventions in any and all countries. To that end I will execute, verify and deliver such documents and perform such other acts (including appearances as a witness) as the Company may reasonably request for use in applying for, obtaining, perfecting, evidencing, sustaining and enforcing such Proprietary Rights and the assignment thereof. In addition, I will execute, verify and deliver assignments of such Proprietary Rights to the Company or its designee. My obligation to assist the Company with respect to Proprietary Rights relating to such Company Inventions in any and all countries shall continue beyond the termination of my employment, but the Company shall compensate me at a reasonable rate after my termination for time actually spent by me at the Company's request on such assistance.

(ii) **Appointment of Attorney in Fact.** In the event the Company is unable for any reason, after reasonable effort, to secure my signature on any document needed in connection with the actions specified in the preceding paragraph, I hereby irrevocably designate and appoint the Company and its duly authorized officers and agents as my agent and attorney in fact, which appointment is coupled with an interest, to act for and in my behalf to execute, verify and file any such documents and to do all other lawfully permitted acts to further the purposes of the preceding paragraph with the same legal force and effect as if executed by me. I hereby waive and quitclaim to the Company any and all claims, of any nature whatsoever, which I now or may hereafter have for infringement of any Proprietary Rights assigned hereunder to the Company.

3. **NO CONFLICTS, NON-SOLICITATION, AND NON-INTERFERENCE.** I acknowledge that during my employment I will have access to and knowledge of Proprietary Information. To protect the Company's Proprietary Information, I agree that during the period of my employment by the Company I will not, without the Company's express written consent, engage in any other employment or business activity directly related to the business in which the Company is now involved or becomes involved, nor will I engage in any other activities which conflict with my obligations to the Company or the interests of the Company. For the period of my employment by the Company and continuing until one year after my last day of employment with the Company, I will not: (a) directly or indirectly induce any employee of the Company to terminate or reduce his or her relationship with the Company; (b) solicit the business of any Client or Customer of the Company (other than on behalf of the Company) for any competitive purpose; or (c) induce any supplier, vendor, consultant or independent contractor of the Company to terminate or reduce his, her or its relationship with the Company. I agree that for purposes of this Agreement, a "**Client or Customer**" is any person or entity with whom or which, at any time during the two year period prior to my last day of employment with the Company, (i) I had direct dealings; (ii) an individual whom I supervised had direct dealings; or (iii) about whom or which I obtained confidential information. If any restriction set forth in this Section is found by any court of competent jurisdiction to be unenforceable because it extends for too long a period of time or over too great a range of activities or in too broad a geographic area, it shall be interpreted to extend only over the maximum period of time, range of activities or geographic area as to which it may be enforceable.

4. **COVENANT NOT TO COMPETE.** I acknowledge that during my employment I will have access to and knowledge of Proprietary Information. To protect the Company's Proprietary Information, I agree that during my employment with the Company, whether full-time or part-time, and for a period of one year after my last day of employment with the Company, I will not directly or indirectly engage in (whether as an employee, consultant, proprietor, partner, director or otherwise), or have any ownership interest in, or participate in the financing, operation, management or control of, any person, entity, corporation or business that engages in a "Restricted Business" in a "Restricted Territory" (as defined below). It is agreed that ownership of (i) no more than one percent (1%) of the outstanding voting stock of a publicly traded corporation, or (ii) any stock I presently own shall not constitute a violation of this provision.

4.1 Reasonable. I agree and acknowledge that the time limitation on the restrictions in this paragraph, combined with the geographic scope, is reasonable. I also acknowledge and agree that this paragraph is reasonably necessary for the protection of the Company's Proprietary Information as defined in paragraph 1.2 herein, that through my employment I shall receive adequate consideration for any loss of opportunity associated with the provisions herein, and that these provisions provide a reasonable way of protecting the Company's business value, some of which will be imparted to me in the ordinary course of my employment with the Company. If any restriction set forth in this paragraph 4 is found by any court of competent jurisdiction to be unenforceable because it extends for too long a

period of time or over too great a range of activities or in too broad a geographic area, it shall be interpreted to extend only over the maximum period of time, range of activities or geographic area as to which it may be enforceable.

4.2 As used herein, the terms:

(i) **“Restricted Business”** shall mean a business that is engaged in or is preparing to engage in any of the areas that the Company is actively pursuing, including but not limited to research, development and/or commercialization of (1) one or more products for the treatment of cancer or infectious disease based upon the Company’s HyperAcute technology platform; (2) one or more products for the treatment of cancer based upon IDO, TDO or PTEN inhibitors; (3) vaccines against the Ebola virus; or (4) any other area of research, development, or commercialization drug or biologic candidate potentially likely which is intended to address the same enzymatic target (such as, for example, IDO) as any drug or biologic candidate that (i) is the subject area of research, development, or commercialization in which the Company or any subsidiary is engaged pursuant to a program which is being materially funded by the Company, a strategic partner of the Company, and/or a grant to the Company and (ii) as to which I participated in or was familiar with the details of such the research, development or commercialization during their time of my employment with Company or regarding which I possess Confidential Information. For purposes of the preceding sentence, the determination of the scope of the Company’s business activities shall be made as of the date of termination of my employment.

(ii) **“Restricted Territory”** shall mean any state, county, or locality in the United States in which the Company conducts business and any other country, city, state, jurisdiction, or territory in which the Company does business or plans to do business.

5. **RECORDS.** I agree to keep and maintain adequate and current records (in the form of notes, sketches, drawings and any other form that may be required by the Company) of all Proprietary Information developed by me and all Company Inventions made by me during the period of my employment at the Company, which records shall be available to and remain the sole property of the Company at all times.

6. **NO CONFLICTING OBLIGATION.** I represent that my performance of all the terms of this Agreement and as an employee of the Company does not and will not breach any agreement to keep in confidence information acquired by me in confidence or in trust prior to my employment by the Company, nor any other lawful obligation I have to any third party. I have not entered into, and I agree I will not enter into, any agreement either written or oral in conflict herewith.

7. **RETURN OF COMPANY MATERIALS.** When I leave the employ of the Company, or earlier if requested by the Company, I will deliver to the Company any and all drawings, notes, memoranda, specifications, devices, formulas, documents, materials, and tangible or intangible property of the Company together with all copies thereof, and any other material containing or embodying any Company Inventions, Third Party Information or Proprietary Information of the Company without retaining any reproductions or embodiments thereof in whole or in part and in any medium. By way of example, such items include but are not limited to: Company files, records, plans, forecasts, reports, studies, analyses, proposals, agreements, financial information, information regarding potential business development partners, research and development information, sales and marketing information, operational and personnel information, code, software, databases, computer-recorded information, and tangible property and equipment (including, but not limited to, computers, data storage devices, facsimile machines, mobile telephones, servers, credit cards, entry cards, identification badges and keys). In addition, if I have used any personal computer, server, or e-mail system to receive, store, review, prepare or transmit any Company information, including but not limited to, Confidential Information, I agree to provide Company with a computer-useable copy of all such Confidential Information and then permanently delete and expunge such Confidential Information from those systems; and I agree to provide Company access to my system as reasonably requested to verify that the necessary copying and/or deletion is completed. I further agree that any property situated on the Company’s premises and owned by the Company, including disks and other storage media, filing cabinets or other work areas, is subject to inspection by Company personnel at any time with or without notice.

8. **LEGAL AND EQUITABLE REMEDIES.** Because my services are personal and unique and because I may have access to and become acquainted with the Proprietary Information of the Company, the Company shall have the

right to enforce this Agreement and any of its provisions by injunction, specific performance or other equitable relief, without bond and without prejudice to any other rights and remedies that the Company may have for a breach of this Agreement.

9. **NOTICES.** Any notices required or permitted hereunder shall be given to the appropriate party at the address specified below or at such other address as the party shall specify in writing. Such notice shall be deemed given upon personal delivery or express delivery service (e.g., FedEx) to the appropriate address; upon delivery via facsimile; or if sent by certified or registered mail, three days after the date of mailing.

10. **NOTIFICATION OF NEW EMPLOYER.** In the event that I leave the employ of the Company, I hereby consent to the notification of my new employer of my rights and obligations under this Agreement.

11. **GENERAL PROVISIONS.**

11.1 Governing Law; Consent to Personal Jurisdiction and Exclusive Forum. This Agreement will be governed by and construed according to the laws of the State of Iowa as such laws are applied to agreements entered into and to be performed entirely within Iowa between Iowa residents. I hereby expressly understand and consent that my employment is a transaction of business in the State of Iowa and constitutes the minimum contacts necessary to make me subject to the personal jurisdiction of the federal courts located in the State of Iowa, and the state courts located in the County of Story, Iowa, for any lawsuit filed against me by Company arising from or related to this Agreement. I agree and acknowledge that any controversy arising out of or relating to this Agreement or the breach thereof, or any claim or action to enforce this Agreement or portion thereof, or any controversy or claim requiring interpretation of this Agreement must be brought in a forum located within the State of Iowa. No such action may be brought in any forum outside the State of Iowa. Any action brought in contravention of this paragraph by one party is subject to dismissal at any time and at any stage of the proceedings by the other, and no action taken by the other in defending, counter claiming or appealing shall be construed as a waiver of this right to immediate dismissal. A party bringing an action in contravention of this paragraph shall be liable to the other party for the costs, expenses and attorney's fees incurred in successfully dismissing the action or successfully transferring the action to the federal courts located in the State of Iowa, or the state courts located in the County of Story, Iowa.

11.2 Severability. In case any one or more of the provisions contained in this Agreement shall, for any reason, be held to be invalid, illegal or unenforceable in any respect, such invalidity, illegality or unenforceability shall not affect the other provisions of this Agreement; this Agreement shall be construed as if such invalid, illegal or unenforceable provision had never been contained herein; and such provision shall be deemed modified and enforceable, insofar as possible consistent with its original intent. By way of example, if, moreover, any one or more of the provisions contained in this Agreement shall for any reason be held to be excessively broad as to duration, geographical scope, activity or subject, it shall be construed by limiting and reducing it, so as to be enforceable to the extent compatible with the applicable law as it shall then appear.

11.3 Successors and Assigns. This Agreement will be binding upon my heirs, executors, administrators and other legal representatives and will be for the benefit of the Company, its successors, and its assigns. My obligations under this Agreement are not assignable to any party.

11.4 Survival. The provisions of this Agreement shall survive the termination of my employment and the assignment of this Agreement by the Company to any successor in interest or other assignee.

11.5 Employment. I agree and understand that my employment is at-will which means I or the Company each have the right to terminate my employment, with or without advanced notice and with or without cause. I further agree and understand that nothing in this Agreement shall confer any right with respect to continuation of employment by the Company, nor shall it interfere in any way with my right or the Company's right to terminate my employment at any time, with or without cause.

11.6 Waiver. To be valid, any waiver by me or the Company of any breach of this Agreement or right hereunder shall be specifically stated in writing, and shall not be a waiver of any preceding or succeeding breach unless so

specifically stated. No waiver of any right under this Agreement and applicable law shall be construed as a waiver of any other right. Neither party shall be required to give notice to enforce strict adherence to all terms of this Agreement.

11.7 Entire Agreement. The obligations pursuant to this Agreement shall apply to any time during which I was previously, or am in the future, employed or engaged as a consultant by the Company, if no other agreement governs the subject matter thereof. This Agreement is the final, complete and exclusive agreement of the parties with respect to the subject matter hereof and supersedes and merges all prior communications and representations with respect to such subject matter. No modification or amendment to this Agreement will be effective unless in writing and signed by the party to be charged. Any subsequent changes in my duties, salary or compensation will not affect the validity or scope of this Agreement.

EMPLOYEE PROPRIETARY INFORMATION AND INVENTIONS AGREEMENT ACKNOWLEDGEMENT FORM

I acknowledge that I have been given a copy of the Employee Proprietary Information and Inventions Agreement, that I have read it, and that I understand its terms and procedures. Furthermore, I agree to abide by it and understand that if NewLink determines my conduct warrants it, I may be subject to discipline for breaches hereof, up to and including the immediate termination of my employment.

Carl Langren

Employee's Name (Please Print)

/s/ Carl Langren

Employee's Signature

9/23/2019

Date

EXHIBIT B

RELEASE

[To be signed on or within twenty-one (21) days after the Separation Date]

My employment with NewLink Genetics Corporation (the “Company”) ended in all capacities on (the “Separation Date”). I hereby confirm that I have been paid all compensation owed to me by the Company for all hours worked; I have received all the leave and leave benefits and protections for which I was eligible, pursuant to the Company’s policies, applicable law, or otherwise; and I have not suffered any on-the-job injury or illness for which I have not already filed a workers’ compensation claim.

If I choose to enter into this Release and allow it to become effective by its terms, the Company will provide me with certain severance benefits pursuant to the terms of the Employment Agreement between me and the Company dated __, 2019 (the “Agreement”). I understand that I am not entitled to such severance benefits unless I return this fully-executed Release to the Company within twenty-one (21) days after the Separation Date and allow this Release to become fully effective and non-revocable by its terms. (Capitalized terms used but not defined in this Release shall have the meaning ascribed to them in the Agreement.)

In exchange for the severance benefits to which I would not otherwise be entitled, I hereby generally and completely release the Company and its directors, officers, employees, shareholders, partners, agents, attorneys, predecessors, successors, parent and subsidiary entities, insurers, affiliates, and assigns (collectively, the “Released Parties”) from any and all claims, liabilities and obligations, both known and unknown, arising from or in any way related to events, acts, conduct, or omissions occurring prior to or at the time that I sign this Release, including but not limited to claims arising from or in any way related to my employment with the Company or the termination of that employment (collectively, the “Released Claims”). By way of example, the Released claims include, but are not limited to: (1) all claims related to my compensation or benefits from the Company, including salary, bonuses, commissions, vacation pay, expense reimbursements, severance pay, fringe benefits, stock, stock options, or any other ownership interests in the Company; (2) all claims for breach of contract, wrongful termination, and breach of the implied covenant of good faith and fair dealing; (3) all tort claims, including claims for fraud, defamation, emotional distress, and discharge in violation of public policy; and (4) all federal, state, and local statutory claims, including claims for discrimination, harassment, retaliation, attorneys’ fees, or other claims arising under the federal Civil Rights Act of 1964 (as amended), the federal Americans with Disabilities Act of 1990, the federal Age Discrimination in Employment Act of 1967 (as amended) (“ADEA”), and Iowa state law.

Notwithstanding the foregoing, the following are not included in the Released Claims (the “Excluded Claims”): (a) any claims for breach of the Agreement arising after the date on which I sign this Release; (2) claims for reimbursement of properly incurred business expenses prior to and through the Separation Date which are submitted to the Company for reimbursement within thirty (30) days after the Separation Date; (3) all rights I have in respect of the Equity Awards; (4) all claims for or rights to indemnification pursuant to the articles of incorporation and bylaws of the Company, any indemnification agreement to which I am a party, or under applicable law; and (5) all claims which cannot be waived as a matter of law. I understand that nothing in this Release prevents me from filing, cooperating with, or participating in any proceeding before the Equal Employment Opportunity Commission, the Department of Labor, or any other government agency, except that I acknowledge and agree that I am hereby waiving my right to any monetary benefits in connection with any such claim, charge or proceeding. I hereby represent and warrant that, other than the Excluded Claims, I am not aware of any claims that I have or might have against any of the parties released above that are not included in the Released Claims.

[IF EXECUTIVE IS 40 YEARS OF AGE OR OLDER] I acknowledge that I am knowingly and voluntarily waiving and releasing any rights I may have under the ADEA, and that the consideration given for this Release is in addition to anything of value to which I was already entitled. I further acknowledge that I have been advised, as required by the ADEA, that: (a) my waiver and release does not apply to any rights or claims that may arise after

the date I sign this Release; (b) I have been advised that I have the right to consult with an attorney prior to executing this Release (although I may choose voluntarily not to do so); (c) I have been given twenty-one (21) days to consider this Release (although I may choose voluntarily to sign it earlier); (d) I have seven (7) days following my execution of this Release to revoke my acceptance of it (with such revocation to be delivered in writing to the Company within the 7-day revocation period); and (e) this Release will not be effective until the date upon which the revocation period has expired, which will be the eighth day after I sign it, provided I do not earlier revoke it ("**Effective Date**").

I further agree: (a) not to disparage the Company or any of the other Released Parties, in any manner likely to be harmful to its or their business, business reputation or personal reputation (although I may respond accurately and fully to any question, inquiry or request for information as required by legal process); (b) not to voluntarily (except in response to legal compulsion) assist any third party in bringing or pursuing any proposed or pending litigation, arbitration, administrative claim or other formal proceedings against the Company, its affiliates, officers, directors, employees or agents; and (c) to reasonably cooperate with the Company by voluntarily (without legal compulsion) providing accurate and complete information, in connection with the Company's actual or contemplated defense, prosecution or investigation of any claims or demands by or against third parties, or other matters, arising from events, acts, or omissions that occurred during my employment with the Company. I hereby certify that I have returned, without retaining any reproductions (in whole or in part), all information, materials and other property of the Company, including but not limited to any such information, materials or property contained on any personally-owned electronic or other storage device (such as computer, cellular phone, PDA, tablet or the like).

This Release, together with the Agreement (including all Exhibits and documents incorporated therein by reference), constitutes the complete, final and exclusive embodiment of the entire agreement between me and the Company with regard to this subject matter. It is entered into without reliance on any promise or representation, written or oral, other than those expressly contained in the Release or the Agreement, and it entirely supersedes any other such promises, warranties or representations, whether oral or written.

Reviewed, Understood and Agreed:

By:

EMPLOYMENT AGREEMENT

THIS EMPLOYMENT AGREEMENT (the "**Agreement**") is made as of this 30th day of September 2019, by and between NewLink Genetics Corporation (the "**Company**") and Eugene P. Kennedy, M.D. ("**Executive**") (collectively, the "**Parties**", each a "**Party**").

WHEREAS, the Company wishes to employ and/or continue to employ Executive and to assure itself of Executive's services on the terms set forth herein;

WHEREAS, Executive wishes to be employed by the Company on the terms set forth herein; and

WHEREAS, the Parties intend for this Agreement to set forth all of the terms and conditions of Executive's employment with the Company, and to supersede and replace all prior agreements, arrangements, representations or understandings between the Parties regarding Executive's employment with the Company.

AGREEMENT

NOW, THEREFORE, in consideration of the mutual promises and covenants contained herein, the Parties agree as follows:

1. **EMPLOYMENT.** The Company will employ Executive and Executive shall serve the Company in the capacity of Chief Medical Officer ("**CMO**").
2. **DUTIES.** Executive shall render exclusive, full-time services to the Company. Executive shall report to the Company's Chief Executive Officer ("**CEO**") or, if the CEO position is unfilled, to another officer designated by the Board of Directors (the "**Board**") or to the Board itself, as determined by the Board in its sole discretion. (For purposes of this Agreement, the term "CEO" is used generically to refer to the CEO or such other person(s) to whom Executive is assigned to report.) Executive shall perform services under this Agreement primarily at the Company's facilities in the greater Philadelphia, Pennsylvania area, and from time to time at such other locations as may be necessary or as otherwise reasonably requested by the Company. Subject to the terms of this Agreement, Executive's responsibilities, working conditions and duties may be changed, expanded or eliminated at the sole discretion of the Company's CEO. Executive shall devote Executive's best efforts and full business time, skill and attention to performance of Executive's duties on behalf of the Company; *provided, however*, that Executive may engage in civic and not-for-profit activities (*e.g.* charitable and industry association activities) as long as such activities do not materially interfere with Executive's obligations hereunder. During Executive's employment with the Company, Executive agrees not to engage in any business or for-profit activities outside the Company, including serving on any advisory boards or boards of directors of for-profit entities, except with the prior written approval of the CEO, which approval may be rescinded at any time in the CEO's sole discretion, provided that in the event of such rescission Executive shall be permitted reasonable time for orderly withdrawal from any board with respect to which such consent has been rescinded. By signing this Agreement, Executive represents that, to the best of Executive's knowledge, Executive is not subject to any other contract or duty that would interfere in any way with Executive's employment with the Company or performance of employment duties hereunder.
3. **POLICIES AND PROCEDURES.** Executive shall be subject to and will comply with the policies and procedures of the Company, as they may be modified, expanded or eliminated from time to time at the Company's sole discretion, except to the extent any such policy or procedure specifically conflicts with the express terms of this Agreement (in which case, this Agreement shall control).
4. **BASE SALARY.** For services rendered hereunder, Executive shall receive a base salary at the rate of \$437,750 per year ("**Base Salary**"), paid periodically in accordance with ordinary Company payroll practices, subject to applicable payroll withholdings and deductions. Executive's Base Salary shall also be subject to annual reviews and periodic adjustment; provided that Executive's Base Salary may not be decreased without

Executive's express written consent except in connection with an across-the-board reduction proportionally affecting all senior executives of the Company.

5. **BONUS.** Executive will be eligible to receive an annual performance bonus ("**Bonus**"), with a target level at forty percent (40%) of Executive's Base Salary (the "**Bonus Target**"), with the annual amount of such Bonus to be determined in the sole discretion of the Company's Board of Directors (the "**Board**") or by its Compensation Committee (under authority delegated by the Board), based upon a review of both Executive's individual performance and the Company's performance (both of which may include, but are not limited to, achievement of certain milestones or performance objectives, if any, established by the Board or the Compensation Committee (the "**Bonus Plan**"). The Board or the Compensation Committee, in their sole discretion, shall determine the extent to which Executive has achieved any performance targets or other terms and conditions applicable to the Bonus; the amount of the Bonus (if any); and whether and to what extent a Bonus may be paid with respect to any year during which Executive's employment terminates, subject to the terms and conditions of this Agreement. Bonuses are not earned until they are approved in writing by the Board or Compensation Committee. Any Bonuses earned shall be paid subject to applicable employment taxes, withholding and deductions. Except as otherwise expressly provided in this Agreement or in the Bonus Plan, Executive must remain continuously employed with the Company through the date a Bonus is approved in order to be eligible to receive such Bonus.
6. **STOCK OPTIONS.** Executive currently holds certain stock options and/or Restricted Stock Units (collectively the "**Equity Awards**"), subject to the vesting schedule and all other terms, conditions and limitations applicable to such stock, stock options and/or Restricted Stock Units as set forth in the Company's 2009 Equity Incentive Plan as it may be amended from time to time (the "**Equity Plan**") and in Stock Award Agreements (as defined in the Equity Plan) approved by the Board and entered into by Executive. Executive may receive additional equity grants from time to time, in the sole discretion of the Board or a designated committee thereof.
7. **OTHER BENEFITS.** While employed by the Company pursuant to this Agreement, Executive shall be entitled to the following benefits:
 - (a) **Executive Benefits.** The Executive shall be entitled to all benefits to which other executive officers of the Company are entitled, on the same terms and conditions in effect from time to time, including, without limitation, participation in pension and profit sharing plans, the Company's 401(k) plan, group insurance policies and plans (including medical, health, vision, and disability insurance policies and plans, and the like) which may be maintained by the Company for the benefit of its executives. The Company reserves the right to alter, discontinue and/or amend its benefit plans and programs from time to time in its sole discretion.
 - (b) **Expense Reimbursement.** The Executive shall receive, upon presentation of proper receipts and vouchers, reimbursement for direct and reasonable out-of-pocket expenses incurred in connection with the performance of Executive's duties hereunder, in accordance with the Company's expense reimbursement policies and procedures in effect from time to time.
 - (c) **Paid Time Off.** Executive will accrue twenty-eight (28) days of paid time off ("**PTO**") each full year, accrued in bi-weekly increments (on the Company's regular payroll schedule), subject to Executive's continuing service. Unused PTO will carry over from year-to-year; provided, however, that Executive shall not be entitled to "carry over" more than twenty-eight (28) days of accrued unused PTO from year-to-year (the "**PTO Carryover Cap**"). Upon termination of employment for any reason, Executive shall be paid out (at Executive's last rate of pay) for Executive's then accrued unused PTO amount, up to a maximum of Executive's PTO Carryover Cap, less applicable payroll deductions and withholdings. Except as provided herein, Executive's PTO rights shall be governed by the Company's PTO policy and applicable law, as in effect from time to time; provided, however, that in the event of a conflict between this Agreement and the Company's governing PTO policy, this Agreement will control.

8. **CONFIDENTIAL INFORMATION, RIGHTS AND DUTIES.**

(a) **Proprietary Information.** Executive acknowledges and agrees to abide by all duties and obligations under his Proprietary Information, Inventions, Non-Competition and Non-Solicitation Agreement with the Company (the "**Proprietary Information Agreement**"), attached hereto as **Exhibit A**.

(b) **Exclusive Property.** Executive agrees that all Company-related business procured by the Executive, and all Company-related business opportunities and plans made known to Executive while employed by the Company, are and shall remain the permanent and exclusive property of the Company.

9. **TERMINATION OF EMPLOYMENT.**

(a) **At-Will Status.** The Company and Executive understand and agree that this employment relationship is at-will. Accordingly, there are no promises or representations concerning the duration of Executive's employment relationship, and it may be terminated by either Executive or the Company at any time, with or without Cause or Good Reason (as defined herein), and with or without advance notice. Executive's at-will status cannot be altered except in an express written agreement signed by Executive and the Company with the specific approval of the Company's Board.

(b) **Termination Due to Death or Disability.** Subject to applicable state or federal law, Executive's employment with the Company will automatically terminate upon Executive's death or a physical or mental disability or condition which renders Executive unable to perform the essential functions of Executive's position (with or without accommodation) for more than six (6) months in any twelve (12) month period, or for more than four (4) consecutive months. This provision shall be interpreted and construed in accordance with the federal Americans with Disabilities Act of 1990 and all other applicable laws.

(c) **Resignation by Executive.** Executive may resign from the Company with or without Good Reason. The Company requests that Executive provide at least three (3) weeks advance written notice of a termination without Good Reason to allow for an orderly transition. The Company may accelerate the date Executive's resignation is to become effective, in its sole discretion. In the event the Company accelerates the resignation effective date, the Executive will be paid Base Salary severance through the originally tendered resignation date, provided that in no such event will Executive be entitled to receive more than three (3) months of Base Salary severance beyond the accelerated resignation date.

(d) **Definition of Cause.** For purposes of this Agreement, "**Cause**" for the Company to terminate Executive shall mean: (i) Executive's incompetence or failure or refusal to perform satisfactorily any duties reasonably required of Executive by the Company (other than by reason of Disability), which failure continues for fifteen (15) days after Executive receives specific written notice to cure; (ii) Executive's conviction or plea of guilty or *nolo contendere* to any felony or to any other crime involving dishonesty or moral turpitude; (iii) any act or omission which constitutes a material breach of this Agreement, the Proprietary Information Agreement, the Company's policies, or Executive's fiduciary duty to the Company; (iv) any act or omission in connection with Executive's employment with the Company, which involves material personal dishonesty by Executive or demonstrates a willful or continuing disregard for the best interests of the Company; or (v) Executive's engaging in dishonorable or disruptive behavior, practices or acts which cause, or could be reasonably expected to cause, material harm or bring disrepute to the Company.

(e) **Definition of Good Reason.** For purposes of this Agreement, "**Good Reason**" means the occurrence of any of the following without Executive's prior written consent: (i) a reduction in Executive's Base Salary or benefits that materially diminishes the aggregate value of Executive's compensation and benefits, unless a reduction is made in connection with an across-the-board reduction of all executives' base salaries and/or employee benefits by a percentage less than 20% and at least equal to the percentage by which Executive's Base Salary or employee benefits are reduced; (ii) in the event of such an across-theboard reduction and a subsequent across-the-board restoration of all or any portion of the reduced Base Salary or benefits, then

a failure to restore Executive's Base Salary or benefits in at least a proportional manner; (iii) a material reduction of Executive's Bonus Target level; (iv) a material reduction in Executive's duties, authority or responsibilities taken as a whole; or (v) a relocation of Executive's principal place of employment that would result in an increase in Executive's one-way commute by more than 30 miles. Notwithstanding the foregoing, "**Good Reason**" for Executive to resign shall not exist unless: (x) Executive provides the Company with specific written notice of the existence of the condition giving rise to Good Reason within ninety (90) days after its initial occurrence; (y) the Company fails to remedy such condition within thirty (30) days after its receipt of such written notice; and (z) Executive resigns within sixty (60) days after the cure period has lapsed.

(f) **Final Pay upon Termination for Any Reason.** Except as otherwise provided by this Agreement and/or required by law, upon termination of Executive's employment for any reason, the Company's obligation to make payments hereunder shall cease, except that the Company shall pay all amounts due and payable for Executive's services through Executive's last day of employment (the "**Separation Date**"), including all accrued unpaid Base Salary and Bonus compensation earned through the Separation Date, any benefits accrued prior to the Separation Date, all accrued but unused vacation as of the Separation Date, and any reimbursable business expenses incurred but not reimbursed as of the Separation Date.

(g) **Severance Benefits upon a Covered Termination (No Change in Control).**

(i) **Severance Benefits.** If Executive's employment is terminated by the Company without Cause, or due to Executive's death or Disability, or as a result of Executive's resignation for Good Reason (each a "**Covered Termination**"), Executive (or Executive's estate, as applicable) shall be eligible to receive the following severance benefits: (1) payment of an amount equal to twelve (12) months of Executive's Base Salary in effect immediately prior to the Separation Date, less applicable payroll tax withholdings and deductions (the "**Severance**"); and (2) twelve (12) months of accelerated vesting of Executive's Equity Awards (so that Executive becomes vested in the portion of the Equity Awards that would have become vested if Executive remained employed for 365 days after the Separation Date). (For avoidance of doubt, to the extent that any performance criteria under any Equity Award has not been satisfied as of the Separation Date, such Equity Awards shall terminate as of the Separation Date, and shall not be subject to the foregoing accelerated vesting benefit.) Except for the foregoing accelerated vesting benefit, all existing terms and conditions applicable to the Equity Awards shall remain in full force and effect. In addition, provided Executive timely elects to continue Executive's group health insurance coverage after the Separation Date pursuant to the federal COBRA law or, if applicable, state insurance laws (collectively, "**COBRA**"), and the terms of the governing health insurance policies, the Company will reimburse the monthly COBRA health insurance premiums (the "**COBRA Payments**") Executive pays to continue Executive's health insurance coverage (including dependent coverage) for twelve (12) months after the Separation Date or until such earlier date as Executive either becomes eligible for group health insurance coverage through a new employer or ceases to be eligible for COBRA coverage (the "**COBRA Payment Period**"). Executive must submit to the Company appropriate documentation of the foregoing health insurance payments, within sixty (60) days of making such payments, in order to be reimbursed. Notwithstanding the foregoing, if the Company determines, in its sole discretion, that it cannot pay the COBRA Payments without a substantial risk of violating applicable law (including, without limitation, Section 2716 of the Public Health Service Act), at the end of each remaining month of the COBRA Payment Period, the Company shall pay Executive directly a taxable monthly amount which, after taxes, equals the COBRA Payment amount the Company would have otherwise paid to Executive (assuming a 35% tax rate). Executive agrees to promptly notify the Company in writing if Executive becomes eligible for group health insurance coverage through a new employer before the end of the specified reimbursement period. For sake of reference, all severance benefits provided in entire subsection 9(g)(i) shall be referred to collectively as the "**Severance Benefits.**"

(ii) **Preconditions.** As a precondition to receiving any Severance Benefits, Executive must (1) remain in compliance with all continuing obligations Executive owes to the Company, including those set forth under Executive's Proprietary Information Agreement, and (2) within twenty-one (21) days after the Separation Date, Executive (or Executive's estate, as applicable) must sign and return to the Company, a separation agreement and release of claims in substantially the form attached hereto as **Exhibit B** (the "**Release**") and allow the Release to become fully-effective and non-revocable by its terms. The Severance will be paid in the form of continuing salary

installment payments, paid on the Company's ordinary payroll schedule starting immediately after the Separation Date; *provided, however*, that any payments that would be paid prior to the date the Release becomes fully effective and non-revocable (the "**Effective Date**"), shall be delayed and paid in full on the first payroll date after the Effective Date. (For avoidance of doubt, no Severance Benefits will be paid under any circumstances if the foregoing preconditions are not satisfied, or if Executive's employment ends because of a resignation without Good Reason or a termination for Cause.)

10. **CHANGE IN CONTROL BENEFITS.**

(a) **Change in Control Termination.** If Executive's employment with the Company is terminated by the Company without Cause (but not due to Executive's death or Disability) or Executive resigns with thirty (30) day notice and such termination or resignation occurs (A) within one (1) month before, or within thirteen (13) months after a Change in Control (defined below) or (B) on or before the thirteen month anniversary of the "Closing" as defined in the Agreement and Plan of Merger and Reorganization between NewLink Genetics Corporation, Cyclone Merger Sub, Inc. and Lumos Pharma, Inc. (the "Lumos Transaction") (each a "**CIC Termination**"), Executive shall be eligible to receive the following enhanced severance package (in lieu of the Severance Benefits described above): (i) payment of twelve (12) months of Executive's Base Salary as in effect immediately prior to the Separation Date, less applicable withholdings and deductions; (ii) payment of a bonus in an amount equal to the Bonus Target as described in Section 5 above, less applicable withholdings and deductions (the payments under clauses (i) and (ii) referred to as the "**CIC Cash Severance**"); (iii) accelerated vesting of Executive's Equity Awards so that Executive becomes one hundred percent (100%) vested in all such Equity Awards; and (iv) a twentyfour (24) month extension of the exercise period applicable to the Equity Awards so that Executive has 730 days after the Separation Date to exercise any vested Equity Awards (including, for avoidance of doubt, any portion of such awards that became vested as a result of the foregoing accelerated vesting benefit). As set forth above, this extended exercise period benefit may convert any stock options that were incentive stock options into non-qualified stock options, and Executive is advised to consult with an independent tax advisor for additional guidance. Except for the foregoing accelerated vesting benefit, all existing terms and conditions applicable to the Equity Awards shall remain in full force and effect. In addition, provided Executive timely elects to continue Executive's group health insurance coverage after the Separation Date pursuant to COBRA, and the terms of the governing health insurance policies, the Company will reimburse all monthly COBRA health insurance premiums the Executive pays to continue Executive's health insurance coverage (including dependent coverage) for twelve (12) months after the Separation Date or until such earlier date as Executive either becomes eligible for group health insurance coverage through a new employer or Executive ceases to be eligible for COBRA coverage. These CIC severance benefits shall be paid subject to the same preconditions and on the same terms and conditions applicable to the Severance Benefits; provided, however, that the CIC Cash Severance shall be paid in a lump sum within ten (10) business days of the Effective Date of the Release required under Section 9(g)(ii) (Preconditions).

(b) **Definition of Change in Control.** For purposes of this Agreement, "**Change in Control**" has the definition set forth in the Equity Plan. For the avoidance of doubt, the Lumos Transaction shall be deemed a Change in Control for purposes of this Agreement.

11. **CODE SECTION 409A COMPLIANCE.** Notwithstanding anything set forth in this Agreement to the contrary, any payments and benefits provided pursuant to this Agreement which constitute "deferred compensation" within the meaning of the Treasury Regulations issued pursuant to Section 409A shall not commence until Executive has incurred a "separation from service" (as such term is defined in the Treasury Regulation Section 1.409A-1(h) ("**Separation From Service**")), unless the Company reasonably determines that such amounts may be provided to Executive without causing Executive to incur the additional 20% tax under Section 409A.

For the avoidance of doubt, it is intended that the payments and benefits set forth in this Agreement satisfy, to the greatest extent possible, the exemptions from the application of Section 409A provided under Treasury Regulation Sections 1.409A-1(b)(4), 1.409A-1(b)(5) and 1.409A-1(b)(9) and this Agreement will be construed to the greatest extent possible as consistent with those provisions. To the extent not so exempt, this Agreement

(and any definitions hereunder) will be construed in a manner that complies with Section 409A and incorporates by reference all required definitions and payment terms. For purposes of Section 409A (including, without limitation, for purposes of Treasury Regulation Section 1.409A-2(b)(2)(iii)), Executive's right to receive any installment payments under this Agreement (whether severance payments, reimbursements or otherwise) shall be treated as a right to receive a series of separate payments and, accordingly, each installment payment hereunder shall at all times be considered a separate and distinct payment. Notwithstanding any provision to the contrary in this Agreement, if the Company (or, if applicable, the successor entity thereto) determines that any payments upon Executive's Separation From Service set forth herein and/or under any other agreement with the Company constitute "deferred compensation" under Section 409A and Executive is, on Executive's Separation From Service, a "specified employee" of the Company or any successor entity thereto, as such term is defined in Section 409A(a)(2)(B)(i) of the Code, then, solely, to the extent necessary to avoid the incurrence of the adverse personal tax consequences under Section 409A, the timing of the payments upon Executive's Separation From Service shall be delayed until the earlier to occur of: (a) the date that is six months and one day after Executive's Separation From Service or (b) the date of Executive's death (such applicable date, the "**Specified Employee Initial Payment Date**"). On the Specified Employee Initial Payment Date, the Company (or the successor entity thereto, as applicable) shall (A) pay to Executive a lump sum amount equal to the sum of the payments upon Executive's Separation From Service that Executive would otherwise have received through the Specified Employee Initial Payment Date if the commencement of the payment of the severance benefits had not been so delayed pursuant to this section and (B) commence paying the balance of the severance benefits in accordance with the applicable payment schedules set forth in this Agreement.

None of the severance benefits under this Agreement will commence or otherwise be delivered prior to the effective date of the Release. If the period of time Executive has to execute the Release "crosses over" two (2) calendar years, the Release will be deemed to have been executed on the twenty-first (21st) day after the Separation Date. Except to the minimum extent that payments must be delayed because Executive is a "specified employee" (as described above) or until the effectiveness of the Release, all amounts will be paid as soon as practicable in accordance with the Company's normal payroll practices and no interest will be due on any amounts so deferred.

12. **BETTER AFTER-TAX PROVISION.** If any payment or benefit that Executive will or may receive from the Company or otherwise (a "**280G Payment**") would (i) constitute a "parachute payment" within the meaning of Section 280G of the Code, and (ii) but for this sentence, be subject to the excise tax imposed by Section 4999 of the Code (the "**Excise Tax**"), then any such 280G Payment will be equal to the Reduced Amount. The "**Reduced Amount**" will be either (x) the largest portion of the 280G Payment that would result in no portion of the 280G Payment (after reduction) being subject to the Excise Tax or (y) the largest portion, up to and including the total, of the 280G Payment, whichever amount (*i.e.*, the amount determined by clause (x) or by clause (y)), after taking into account all applicable federal, state and local employment taxes, income taxes, and the Excise Tax (all computed at the highest applicable marginal rate), results in Executive's receipt, on an after-tax basis, of the greater economic benefit notwithstanding that all or some portion of the 280G Payment may be subject to the Excise Tax. If a reduction in a 280G Payment is required pursuant to the preceding sentence and the Reduced Amount is determined pursuant to clause (x) of the preceding sentence, the reduction will occur in the manner (the "**Reduction Method**") that results in the greatest economic benefit for Executive. If more than one method of reduction will result in the same economic benefit, the items so reduced will be reduced pro rata (the "**Pro Rata Reduction Method**").

Notwithstanding the foregoing, if the Reduction Method or the Pro Rata Reduction Method would result in any portion of the 280G Payment being subject to taxes pursuant to Section 409A of the Code that would not otherwise be subject to taxes pursuant to Section 409A of the Code, then the Reduction Method and/or the Pro Rata Reduction Method, as the case may be, will be modified so as to avoid the imposition of taxes pursuant to Section 409A of the Code as follows: (A) as a first priority, the modification will preserve, to the greatest extent possible, the greatest economic benefit for Executive as determined on an after-tax basis; (B) as a second priority, 280G Payments that are contingent on future events (*e.g.*, being terminated without Cause), will be reduced (or eliminated) before 280G Payments that are not contingent on future events; and (C) as a third priority, 280G Payments that are "deferred compensation" within the meaning of Section 409A of the Code

will be reduced (or eliminated) before 280G Payments that are not “deferred compensation” within the meaning of Section 409A of the Code.

If Section 280G of the Code is not applicable by law to Executive, the Company will determine whether any similar law in Executive’s jurisdiction applies and should be taken into account.

The independent professional firm engaged by the Company for general tax audit purposes as of the day prior to the effective date of the Change in Control will make all determinations required to be made under this Section. If the firm so engaged by the Company is serving as accountant or auditor for the individual, entity or group effecting the Change in Control, the Company will appoint a nationally recognized independent professional firm to make the determinations required hereunder. The Company will bear all expenses with respect to the determinations by such firm required to be made hereunder. The Company will use commercially reasonable efforts to cause the firm engaged to make the determinations hereunder to provide its calculations, together with detailed supporting documentation, to the Company and Executive within thirty (30) calendar days after the date on which Executive’s right to a 280G Payment becomes reasonably likely to occur (if requested at that time by the Company or Executive) or such other time as requested by the Company or Executive.

If Executive receives a 280G Payment for which the Reduced Amount was determined pursuant to clause (x) of the first paragraph of this Section and the Internal Revenue Service determines thereafter that some portion of the 280G Payment is subject to the Excise Tax, Executive will promptly return to the Company a sufficient amount of the 280G Payment (after reduction pursuant to clause (x) of the first paragraph of this Section) so that no portion of the remaining 280G Payment is subject to the Excise Tax. For the avoidance of doubt, if the Reduced Amount was determined pursuant to clause (y) of the first paragraph of this Section, Executive will have no obligation to return any portion of the 280G Payment pursuant to the preceding sentence.

13. MISCELLANEOUS.

(a) **Taxes.** Executive shall be responsible for the payment of any taxes due on any and all compensation, stock option, or benefit provided by the Company pursuant to this Agreement which are not withheld by the Company. Executive agrees to indemnify and hold harmless the Company from any and all claims or penalties asserted against the Company arising from Executive’s failure to pay taxes due on any compensation, stock option, or benefit provided by the Company pursuant to this Agreement. Executive expressly acknowledges that the Company has not made any representation about the tax consequences of any consideration provided by the Company to Executive pursuant to this Agreement.

(b) **Modification/Waiver.** This Agreement may not be amended, modified, superseded, canceled, renewed or expanded, or any terms or covenants hereof waived, except by a writing executed by each of the Parties or, in the case of a waiver, by the Party waiving compliance. Failure of any Party at any time to require performance of any provision hereof shall in no manner affect his, her or its right at a later time to enforce such provision. No waiver by a Party of a breach of this Agreement shall be deemed to be or construed as a waiver of any other breach of any term or condition contained in the Agreement.

(c) **Successors and Assigns.** This Agreement may be assigned by the Company to an affiliated entity or to any successor or assignee of the Company with or without Executive’s consent. This Agreement shall not be assignable by Executive.

(d) **Notices.** All notices to be given hereunder shall be in writing and shall be deemed to have been duly given on: the date personally or hand delivered; one (1) day after being sent by internationally recognized overnight delivery courier; and three (3) days after being sent by certified mail, return receipt requested. Notices mailed to Executive shall be sent to Executive’s last home address as reflected in the Company’s personnel records. Executive promptly shall notify Company of any change in Executive’s address. Notices to be issued to the Company shall be directed to the Company’s CEO, and shall be mailed to the Company’s headquarters.

(e) **Dispute Resolution.** To aid in the rapid and economical resolution of any disputes that may arise in the course of Executive's employment relationship, the Parties agree that any and all disputes, claims, or demands arising from or relating to the terms of this Agreement (including but not limited to the Proprietary Information Agreement incorporated by reference herein), Executive's employment relationship with the Company, or the termination of that relationship (including statutory claims), shall be resolved, to the fullest extent permitted by law, by final, binding and confidential arbitration in Philadelphia, Pennsylvania (or another mutually acceptable location) conducted before a single neutral arbitrator by JAMS, Inc. ("JAMS") or its successor, under the then applicable JAMS Arbitration Rules and Procedures for Employment Disputes (available at <http://www.jamsadr.com/rules-employmentarbitration/>) and subject to JAMS' Policy on Employment Arbitration Minimum Standards of Procedural Fairness. **The Parties acknowledge that by agreeing to this arbitration procedure, they waive the right to resolve any such dispute, claim or demand through a trial by jury or judge or by administrative proceeding.** Executive will have the right to be represented by legal counsel at any arbitration proceeding, at Executive's expense. The arbitrator shall: (a) have authority to compel adequate discovery for the resolution of the dispute and to award such relief as would otherwise be available under applicable law in a court proceeding; (b) issue a written statement signed by the arbitrator regarding the disposition of each claim and the relief, if any, awarded as to each claim, the reasons for the award, and the arbitrator's essential findings and conclusions on which the award is based; and (c) have authority to, in the arbitrator's discretion, award recovery of attorneys' fees and costs to the prevailing party. The Company shall pay all JAMS' arbitration fees. Nothing in this Agreement is intended to prevent either Party from obtaining injunctive relief in a court of applicable jurisdiction to prevent irreparable harm pending the conclusion of any arbitration; or from enforcing any arbitration award in a court of applicable jurisdiction.

(f) **Entire Agreement.** This Agreement, together with the Exhibits, sets forth the complete and exclusive agreement and understanding of the Parties with regard to the subject matter hereof, and supersedes any and all prior or contemporaneous agreements, promises, representations, or communications, written or oral, pertaining to the subject matter hereof (including, without limitation, the Executive's December 30, 2015 Employment Agreement with the Company). If any provision of this Agreement is determined to be invalid or unenforceable, in whole or in part, this determination will not affect any other provision of this Agreement, and the invalid or unenforceable provision shall be modified to render it valid and enforceable consistent with the intent of the parties insofar as possible under applicable law. For purposes of construing this Agreement, any ambiguities shall not be construed against any party as the drafter. This Agreement may be executed in counterparts, which shall be deemed to be part of one original, and facsimile signatures, signatures transmitted by .PDF, as well as electronic signatures, shall be equivalent to original signatures. The validity, interpretation, construction and performance of this Agreement shall be governed by the laws of the State of Iowa, without regard to conflict of laws principles.

IN WITNESS WHEREOF, the Parties have each duly executed this Agreement as of the date written above to indicate their understanding and acceptance of all of the above-stated terms and conditions.

NEWLINK GENETICS CORPORATION

By: /s/Brad Powers

Its: General Counsel

EXECUTIVE

/s/Gene Kennedy

EXHIBIT A

A-1

EMPLOYEE PROPRIETARY INFORMATION AND INVENTIONS AGREEMENT

This Employee Proprietary Information, Inventions, Non-competition, and Non-solicitation Agreement

(this "Agreement") is made in consideration for my employment or continued employment by NewLink Genetics Corporation or any of its subsidiaries (the "Company"), and the compensation now and hereafter paid to me. I hereby agree as follows:

1. **NONDISCLOSURE.**

1.1 Recognition of Company's Rights; Nondisclosure. At all times during my employment and thereafter, I will hold in strictest confidence and will not disclose, use, lecture upon or publish any of the Company's Proprietary Information (defined below), except as such disclosure, use or publication may be required in connection with my work for the Company, or unless an officer of the Company expressly authorizes such in writing. I will obtain Company's written approval before publishing or submitting for publication any material (written, verbal, or otherwise) that relates to my work at Company and/or incorporates any Proprietary Information. I hereby assign to the Company any rights I may have or acquire in such Proprietary Information and recognize that all Proprietary Information shall be the sole property of the Company and its assigns.

1.2 Proprietary Information. The term "**Proprietary Information**" shall mean any and all confidential and/or proprietary knowledge, data or information of the Company. By way of illustration but not limitation, "Proprietary Information" includes (a) tangible and intangible information relating to antibodies and other biological materials, cell lines, samples of assay components, media and/or cell lines and procedures and formulations for producing any such assay components, media and/or cell lines, formulations, products, processes, know-how, designs, formulas, methods, developmental or experimental work, clinical data, improvements, discoveries, plans for research, new products, marketing and selling, business plans, budgets and unpublished financial statements, licenses, prices and costs, suppliers and customers, and information regarding the skills and compensation of other employees of the Company; (b) trade secrets, inventions, mask works, ideas, processes, formulas, source and object codes, data, programs, other works of authorship, know-how, improvements, discoveries, developments, designs and techniques (hereinafter collectively referred to as "Inventions"); (c) information regarding plans for research, development, new products, marketing and selling, business plans, budgets and unpublished financial statements, licenses, prices and costs, suppliers and customers; and (d) information regarding the skills and compensation of other employees of the Company. Notwithstanding the foregoing, it is understood that, at all such times, I am free to use information which is generally known in the trade or industry, which is not gained as result of a breach of this Agreement, and my own, skill, knowledge, know-how and experience to whatever extent and in whichever way I wish.

1.3 Third Party Information. I understand, in addition, that the Company has received and in the future will receive from third parties confidential or proprietary information ("Third Party Information") subject to a duty on the Company's part to maintain the confidentiality of such information and to use it only for certain limited purposes. During the term of my employment and thereafter, I will hold Third Party Information in the strictest confidence and will not disclose to anyone (other than Company personnel who need to know such information in connection with their work for the Company) or use, except in connection with my work for the Company, Third Party Information unless expressly authorized by an officer of the Company in writing.

1.4 No Improper Use of Information of Prior Employers and Others. During my employment by the Company I will not improperly use or disclose any confidential information or trade secrets, if any, of any third party, including but not limited to any former employer or any other person or entity to whom I have an obligation of confidentiality, and I will not bring onto the premises of the Company any unpublished documents or any property belonging to any third party, including but not limited to any former employer or any other person or entity to whom I have an obligation of confidentiality unless consented to in writing by that third party. I will use in the performance of my duties only information which is generally known and used by persons with training and experience comparable to my own, which is common knowledge in the industry or otherwise legally in the public domain, or which is otherwise provided, obtained, or developed by or for the Company.

2. **ASSIGNMENT OF INVENTIONS.**

2.1 Proprietary Rights. The term “**Proprietary Rights**” shall mean all trade secret, patent, copyright, mask work and other intellectual property rights throughout the world.

2.2 Prior Inventions. Inventions, if any, patented or unpatented, which I made prior to the commencement of my employment with the Company are excluded from the scope of this Agreement. To preclude any possible uncertainty, I have set forth on *Exhibit A* (Previous Inventions) attached hereto a complete list of all Inventions that I have, alone or jointly with others, conceived, developed or reduced to practice or caused to be conceived, developed or reduced to practice prior to the commencement of my employment with the Company, that I consider to be my property or the property of third parties and that I wish to have excluded from the scope of this Agreement (collectively referred to as “**Prior Inventions**”). If disclosure of any such Prior Invention would cause me to violate any prior confidentiality agreement, I understand that I am not to list such Prior Inventions in Exhibit A but am only to disclose a cursory name for each such invention, a listing of the party (ies) to whom it belongs and the fact that full disclosure as to such inventions has not been made for that reason. A space is provided on Exhibit A for such purpose. If no such disclosure is attached, I represent that there are no Prior Inventions. If, in the course of my employment with the Company, I incorporate a Prior Invention into a Company product, process or machine, the Company is hereby granted and shall have a nonexclusive, royalty-free, irrevocable, perpetual, worldwide license (with rights to sublicense through multiple tiers of sublicensees) to make, have made, modify, use and sell such Prior Invention. Notwithstanding the foregoing, I agree that I will not incorporate, or permit to be incorporated, Prior Inventions in any Company Inventions without the Company’s prior written consent.

2.3 Assignment of Inventions. Subject to Sections 2.4, and 2.6, I hereby assign and agree to assign in the future (when any such Inventions or Proprietary Rights are first reduced to practice or first fixed in a tangible medium, as applicable) to the Company all my right, title and interest in and to any and all Inventions (and all Proprietary Rights with respect thereto) whether or not patentable or registrable under copyright or similar statutes, made or conceived or reduced to practice or learned by me, either alone or jointly with others, during the period of my employment with the Company. Inventions assigned to the Company, or to a third party as directed by the Company pursuant to this Section 2, are hereinafter referred to as “Company Inventions.”

2.4 Nonassignable Inventions. I recognize that, in the event of a specifically applicable state law, regulation, rule, or public policy (“Specific Inventions Law”), this Agreement will not be deemed to require assignment of any invention which qualifies fully for protection under a Specific Inventions Law by virtue of the fact that any such invention was, for example, developed entirely on my own time without using the Company’s equipment, supplies, facilities, or trade secrets and neither related to the Company’s actual or demonstrably anticipated business, research or development, nor resulted from work performed by me for the Company. In the absence of a Specific Inventions Law, the preceding sentence will not apply.

2.5 Obligation to Keep Company Informed. During the period of my employment with the Company, I will promptly disclose to the Company fully and in writing all Inventions authored, conceived or reduced to practice by me, either alone or jointly with others; and all patent applications filed by me or on my behalf. At the time of each such disclosure, I will advise the Company in writing of any Inventions that I believe fully qualify for protection under the provisions of a Specific Inventions Law; and I will at that time provide to the Company in writing all evidence necessary to substantiate that belief. The Company will keep in confidence and will not use for any purpose or disclose to third parties without my consent any confidential information disclosed in writing to the Company pursuant to this Agreement relating to Inventions that qualify fully for protection under a Specific Inventions Law. I will preserve the confidentiality of any Invention that does not fully qualify for protection under a Specific Inventions Law.

2.6 Government or Third Party. I also agree to assign all my right, title and interest in and to any particular Company Invention to a third party, including without limitation the United States, as directed by the Company.

2.7 Works for Hire. I acknowledge that all original works of authorship which are made by me (solely or jointly with others) within the scope of my employment at the Company and which are protectable by copyright are “works made for hire,” pursuant to United States Copyright Act (17 U.S.C., Section 101).

2.8 Enforcement of Proprietary Rights.

(i) **Obligation to Assist.** I will assist the Company in every proper way to obtain, and from time to time enforce, United States and foreign Proprietary Rights relating to Company Inventions in any and all countries. To that end I will execute, verify and deliver such documents and perform such other acts (including appearances as a witness) as the Company may reasonably request for use in applying for, obtaining, perfecting, evidencing, sustaining and enforcing such Proprietary Rights and the assignment thereof. In addition, I will execute, verify and deliver assignments of such Proprietary Rights to the Company or its designee. My obligation to assist the Company with respect to Proprietary Rights relating to such Company Inventions in any and all countries shall continue beyond the termination of my employment, but the Company shall compensate me at a reasonable rate after my termination for time actually spent by me at the Company's request on such assistance.

(ii) **Appointment of Attorney in Fact.** In the event the Company is unable for any reason, after reasonable effort, to secure my signature on any document needed in connection with the actions specified in the preceding paragraph, I hereby irrevocably designate and appoint the Company and its duly authorized officers and agents as my agent and attorney in fact, which appointment is coupled with an interest, to act for and in my behalf to execute, verify and file any such documents and to do all other lawfully permitted acts to further the purposes of the preceding paragraph with the same legal force and effect as if executed by me. I hereby waive and quitclaim to the Company any and all claims, of any nature whatsoever, which I now or may hereafter have for infringement of any Proprietary Rights assigned hereunder to the Company.

3. **NO CONFLICTS, NON-SOLICITATION, AND NON-INTERFERENCE.** I acknowledge that during my employment I will have access to and knowledge of Proprietary Information. To protect the Company's Proprietary Information, I agree that during the period of my employment by the Company I will not, without the Company's express written consent, engage in any other employment or business activity directly related to the business in which the Company is now involved or becomes involved, nor will I engage in any other activities which conflict with my obligations to the Company or the interests of the Company. For the period of my employment by the Company and continuing until one year after my last day of employment with the Company, I will not: (a) directly or indirectly induce any employee of the Company to terminate or reduce his or her relationship with the Company; (b) solicit the business of any Client or Customer of the Company (other than on behalf of the Company) for any competitive purpose; or (c) induce any supplier, vendor, consultant or independent contractor of the Company to terminate or reduce his, her or its relationship with the Company. I agree that for purposes of this Agreement, a "**Client or Customer**" is any person or entity with whom or which, at any time during the two year period prior to my last day of employment with the Company, (i) I had direct dealings; (ii) an individual whom I supervised had direct dealings; or (iii) about whom or which I obtained confidential information. If any restriction set forth in this Section is found by any court of competent jurisdiction to be unenforceable because it extends for too long a period of time or over too great a range of activities or in too broad a geographic area, it shall be interpreted to extend only over the maximum period of time, range of activities or geographic area as to which it may be enforceable.

4. **COVENANT NOT TO COMPETE.** I acknowledge that during my employment I will have access to and knowledge of Proprietary Information. To protect the Company's Proprietary Information, I agree that during my employment with the Company, whether full-time or part-time, and for a period of one year after my last day of employment with the Company, I will not directly or indirectly engage in (whether as an employee, consultant, proprietor, partner, director or otherwise), or have any ownership interest in, or participate in the financing, operation, management or control of, any person, entity, corporation or business that engages in a "Restricted Business" in a "Restricted Territory" (as defined below). It is agreed that ownership of (i) no more than one percent (1%) of the outstanding voting stock of a publicly traded corporation, or (ii) any stock I presently own shall not constitute a violation of this provision.

4.1 Reasonable. I agree and acknowledge that the time limitation on the restrictions in this paragraph, combined with the geographic scope, is reasonable. I also acknowledge and agree that this paragraph is reasonably necessary for the protection of the Company's Proprietary Information as defined in paragraph 1.2 herein, that through my employment I shall receive adequate consideration for any loss of opportunity associated with the provisions herein, and that these provisions provide a reasonable way of protecting the Company's business value, some of which will

be imparted to me in the ordinary course of my employment with the Company. If any restriction set forth in this paragraph 4 is found by any court of competent jurisdiction to be unenforceable because it extends for too long a period of time or over too great a range of activities or in too broad a geographic area, it shall be interpreted to extend only over the maximum period of time, range of activities or geographic area as to which it may be enforceable.

4.2 As used herein, the terms:

(i) **“Restricted Business”** shall mean a business that is engaged in or is preparing to engage in any of the areas that the Company is actively pursuing, including but not limited to research, development and/or commercialization of (1) one or more products for the treatment of cancer or infectious disease based upon the Company’s HyperAcute technology platform; (2) one or more products for the treatment of cancer based upon IDO, TDO or PTEN inhibitors; (3) vaccines against the Ebola virus; or (4) any other area of research, development, or commercialization drug or biologic candidate potentially likely which is intended to address the same enzymatic target (such as, for example, IDO) as any drug or biologic candidate that (i) is the subject area of research, development, or commercialization in which the Company or any subsidiary is engaged pursuant to a program which is being materially funded by the Company, a strategic partner of the Company, and/or a grant to the Company and (ii) as to which I participated in or was familiar with the details of such the research, development or commercialization during their time of my employment with Company or regarding which I possess Confidential Information. For purposes of the preceding sentence, the determination of the scope of the Company’s business activities shall be made as of the date of termination of my employment.

(ii) **“Restricted Territory”** shall mean any state, county, or locality in the United States in which the Company conducts business and any other country, city, state, jurisdiction, or territory in which the Company does business or plans to do business.

5. **RECORDS.** I agree to keep and maintain adequate and current records (in the form of notes, sketches, drawings and any other form that may be required by the Company) of all Proprietary Information developed by me and all Company Inventions made by me during the period of my employment at the Company, which records shall be available to and remain the sole property of the Company at all times.

6. **NO CONFLICTING OBLIGATION.** I represent that my performance of all the terms of this Agreement and as an employee of the Company does not and will not breach any agreement to keep in confidence information acquired by me in confidence or in trust prior to my employment by the Company, nor any other lawful obligation I have to any third party. I have not entered into, and I agree I will not enter into, any agreement either written or oral in conflict herewith.

7. **RETURN OF COMPANY MATERIALS.** When I leave the employ of the Company, or earlier if requested by the Company, I will deliver to the Company any and all drawings, notes, memoranda, specifications, devices, formulas, documents, materials, and tangible or intangible property of the Company together with all copies thereof, and any other material containing or embodying any Company Inventions, Third Party Information or Proprietary Information of the Company without retaining any reproductions or embodiments thereof in whole or in part and in any medium. By way of example, such items include but are not limited to: Company files, records, plans, forecasts, reports, studies, analyses, proposals, agreements, financial information, information regarding potential business development partners, research and development information, sales and marketing information, operational and personnel information, code, software, databases, computer-recorded information, and tangible property and equipment (including, but not limited to, computers, data storage devices, facsimile machines, mobile telephones, servers, credit cards, entry cards, identification badges and keys). In addition, if I have used any personal computer, server, or e-mail system to receive, store, review, prepare or transmit any Company information, including but not limited to, Confidential Information, I agree to provide Company with a computer-useable copy of all such Confidential Information and then permanently delete and expunge such Confidential Information from those systems; and I agree to provide Company access to my system as reasonably requested to verify that the necessary copying and/or deletion is completed. I further agree that any property situated on the Company’s premises and owned by the Company,

including disks and other storage media, filing cabinets or other work areas, is subject to inspection by Company personnel at any time with or without notice.

8. **LEGAL AND EQUITABLE REMEDIES.** Because my services are personal and unique and because I may have access to and become acquainted with the Proprietary Information of the Company, the Company shall have the right to enforce this Agreement and any of its provisions by injunction, specific performance or other equitable relief, without bond and without prejudice to any other rights and remedies that the Company may have for a breach of this Agreement.

9. **NOTICES.** Any notices required or permitted hereunder shall be given to the appropriate party at the address specified below or at such other address as the party shall specify in writing. Such notice shall be deemed given upon personal delivery or express delivery service (e.g., FedEx) to the appropriate address; upon delivery via facsimile; or if sent by certified or registered mail, three days after the date of mailing.

10. **NOTIFICATION OF NEW EMPLOYER.** In the event that I leave the employ of the Company, I hereby consent to the notification of my new employer of my rights and obligations under this Agreement.

11. **GENERAL PROVISIONS.**

11.1 Governing Law; Consent to Personal Jurisdiction and Exclusive Forum. This Agreement will be governed by and construed according to the laws of the State of Iowa as such laws are applied to agreements entered into and to be performed entirely within Iowa between Iowa residents. I hereby expressly understand and consent that my employment is a transaction of business in the State of Iowa and constitutes the minimum contacts necessary to make me subject to the personal jurisdiction of the federal courts located in the State of Iowa, and the state courts located in the County of Story, Iowa, for any lawsuit filed against me by Company arising from or related to this Agreement. I agree and acknowledge that any controversy arising out of or relating to this Agreement or the breach thereof, or any claim or action to enforce this Agreement or portion thereof, or any controversy or claim requiring interpretation of this Agreement must be brought in a forum located within the State of Iowa. No such action may be brought in any forum outside the State of Iowa. Any action brought in contravention of this paragraph by one party is subject to dismissal at any time and at any stage of the proceedings by the other, and no action taken by the other in defending, counter claiming or appealing shall be construed as a waiver of this right to immediate dismissal. A party bringing an action in contravention of this paragraph shall be liable to the other party for the costs, expenses and attorney's fees incurred in successfully dismissing the action or successfully transferring the action to the federal courts located in the State of Iowa, or the state courts located in the County of Story, Iowa.

11.2 Severability. In case any one or more of the provisions contained in this Agreement shall, for any reason, be held to be invalid, illegal or unenforceable in any respect, such invalidity, illegality or unenforceability shall not affect the other provisions of this Agreement; this Agreement shall be construed as if such invalid, illegal or unenforceable provision had never been contained herein; and such provision shall be deemed modified and enforceable, insofar as possible consistent with its original intent. By way of example, if, moreover, any one or more of the provisions contained in this Agreement shall for any reason be held to be excessively broad as to duration, geographical scope, activity or subject, it shall be construed by limiting and reducing it, so as to be enforceable to the extent compatible with the applicable law as it shall then appear.

11.3 Successors and Assigns. This Agreement will be binding upon my heirs, executors, administrators and other legal representatives and will be for the benefit of the Company, its successors, and its assigns. My obligations under this Agreement are not assignable to any party.

11.4 Survival. The provisions of this Agreement shall survive the termination of my employment and the assignment of this Agreement by the Company to any successor in interest or other assignee.

11.5 Employment. I agree and understand that my employment is at-will which means I or the Company each have the right to terminate my employment, with or without advanced notice and with or without cause. I further agree

and understand that nothing in this Agreement shall confer any right with respect to continuation of employment by the Company, nor shall it interfere in any way with my right or the Company's right to terminate my employment at any time, with or without cause.

11.6 Waiver. To be valid, any waiver by me or the Company of any breach of this Agreement or right hereunder shall be specifically stated in writing, and shall not be a waiver of any preceding or succeeding breach unless so specifically stated. No waiver of any right under this Agreement and applicable law shall be construed as a waiver of any other right. Neither party shall be required to give notice to enforce strict adherence to all terms of this Agreement.

11.7 Entire Agreement. The obligations pursuant to this Agreement shall apply to any time during which I was previously, or am in the future, employed or engaged as a consultant by the Company, if no other agreement governs the subject matter thereof. This Agreement is the final, complete and exclusive agreement of the parties with respect to the subject matter hereof and supersedes and merges all prior communications and representations with respect to such subject matter. No modification of or amendment to this Agreement will be effective unless in writing and signed by the party to be charged. Any subsequent changes in my duties, salary or compensation will not affect the validity or scope of this Agreement.

EMPLOYEE PROPRIETARY INFORMATION AND INVENTIONS AGREEMENT

ACKNOWLEDGEMENT FORM

I acknowledge that I have been given a copy of the Employee Proprietary Information and Inventions Agreement, that I have read it, and that I understand its terms and procedures. Furthermore, I agree to abide by it and understand that if NewLink determines my conduct warrants it, I may be subject to discipline for breaches hereof, up to and including the immediate termination of my employment.

Gene Kennedy
Employee's Name (Please Print)

/s/Gene Kennedy
Employee's Signature

9/27/2019
Date

EXHIBIT B**RELEASE [To be signed on or within twenty-one (21) days after the Separation Date]**

My employment with NewLink Genetics Corporation (the “**Company**”) ended in all capacities on _____ (the “**Separation Date**”). I hereby confirm that I have been paid all compensation owed to me by the Company for all hours worked; I have received all the leave and leave benefits and protections for which I was eligible, pursuant to the Company’s policies, applicable law, or otherwise; and I have not suffered any on-the-job injury or illness for which I have not already filed a workers’ compensation claim.

If I choose to enter into this Release and allow it to become effective by its terms, the Company will provide me with certain severance benefits pursuant to the terms of the Employment Agreement between me and the Company dated _____, 2019 (the “**Agreement**”). I understand that I am not entitled to such severance benefits unless I return this fully-executed Release to the Company within twenty-one (21) days after the Separation Date, and allow this Release to become fully effective and non-revocable by its terms. (Capitalized terms used but not defined in this Release shall have the meaning ascribed to them in the Agreement.)

In exchange for the severance benefits to which I would not otherwise be entitled, I hereby generally and completely release the Company and its directors, officers, employees, shareholders, partners, agents, attorneys, predecessors, successors, parent and subsidiary entities, insurers, affiliates, and assigns (collectively, the “**Released Parties**”) from any and all claims, liabilities and obligations, both known and unknown, arising from or in any way related to events, acts, conduct, or omissions occurring prior to or at the time that I sign this Release, including but not limited to claims arising from or in any way related to my employment with the Company or the termination of that employment (collectively, the “**Released Claims**”). By way of example, the Released claims include, but are not limited to: (1) all claims related to my compensation or benefits from the Company, including salary, bonuses, commissions, vacation pay, expense reimbursements, severance pay, fringe benefits, stock, stock options, or any other ownership interests in the Company; (2) all claims for breach of contract, wrongful termination, and breach of the implied covenant of good faith and fair dealing; (3) all tort claims, including claims for fraud, defamation, emotional distress, and discharge in violation of public policy; and (4) all federal, state, and local statutory claims, including claims for discrimination, harassment, retaliation, attorneys’ fees, or other claims arising under the federal Civil Rights Act of 1964 (as amended), the federal Americans with Disabilities Act of 1990, the federal Age Discrimination in Employment Act of 1967 (as amended) (“**ADEA**”), and Iowa state law.

Notwithstanding the foregoing, the following are not included in the Released Claims (the “**Excluded Claims**”): (a) any claims for breach of the Agreement arising after the date on which I sign this Release; (2) claims for reimbursement of properly incurred business expenses prior to and through the Separation Date which are submitted to the Company for reimbursement within thirty (30) days after the Separation Date; (3) all rights I have in respect of the Equity Awards; (4) all claims for or rights to indemnification pursuant to the articles of incorporation and bylaws of the Company, any indemnification agreement to which I am a party, or under applicable law; and (5) all claims which cannot be waived as a matter of law. I understand that nothing in this Release prevents me from filing, cooperating with, or participating in any proceeding before the Equal Employment Opportunity Commission, the Department of Labor, or any other government agency, except that I acknowledge and agree that I am hereby waiving my right to any monetary benefits in connection with any such claim, charge or proceeding. I hereby represent and warrant that, other than the Excluded Claims, I am not aware of any claims that I have or might have against any of the parties released above that are not included in the Released Claims.

[IF EXECUTIVE IS 40 YEARS OF AGE OR OLDER] I acknowledge that I am knowingly and voluntarily waiving and releasing any rights I may have under the ADEA, and that the consideration given for this Release is in addition to anything of value to which I was already entitled. I further acknowledge that I have been advised, as required by the ADEA, that: (a) my waiver and release does not apply to any rights or claims that may arise after the date I sign this Release; (b) I have been advised that I have the right to consult with an attorney prior to executing this Release (although I may choose voluntarily not to do so); (c) I have been given twenty-one (21) days to consider this Release (although I may choose voluntarily to sign it earlier); (d) I have seven (7) days following my execution of this Release to revoke my acceptance of it (with such revocation to be delivered in writing to the Company within the 7-day revocation period); and (e) this Release will not be effective until the date upon which the revocation period has expired, which will be the eighth day after I sign it, provided I do not earlier revoke it ("**Effective Date**").

I further agree: (a) not to disparage the Company or any of the other Released Parties, in any manner likely to be harmful to its or their business, business reputation or personal reputation (although I may respond accurately and fully to any question, inquiry or request for information as required by legal process); (b) not to voluntarily (except in response to legal compulsion) assist any third party in bringing or pursuing any proposed or pending litigation, arbitration, administrative claim or other formal proceedings against the Company, its affiliates, officers, directors, employees or agents; and (c) to reasonably cooperate with the Company by voluntarily (without legal compulsion) providing accurate and complete information, in connection with the Company's actual or contemplated defense, prosecution or investigation of any claims or demands by or against third parties, or other matters, arising from events, acts, or omissions that occurred during my employment with the Company. I hereby certify that I have returned, without retaining any reproductions (in whole or in part), all information, materials and other property of the Company, including but not limited to any such information, materials or property contained on any personally-owned electronic or other storage device (such as computer, cellular phone, PDA, tablet or the like).

This Release, together with the Agreement (including all Exhibits and documents incorporated therein by reference), constitutes the complete, final and exclusive embodiment of the entire agreement between me and the Company with regard to this subject matter. It is entered into without reliance on any promise or representation, written or oral, other than those expressly contained in the Release or the Agreement, and it entirely supersedes any other such promises, warranties or representations, whether oral or written.

Reviewed, Understood and Agreed:

By: _____ Date: _____

EMPLOYMENT AGREEMENT

THIS EMPLOYMENT AGREEMENT (the “**Agreement**”) is made as of this 30th day of September 2019, by and between NewLink Genetics Corporation (the “**Company**”), and Brad Powers (“**Executive**”) (collectively, the “**Parties**”, each a “**Party**”).

WHEREAS, the Company wishes to employ and/or continue to employ Executive and to assure itself of Executive’s services on the terms set forth herein;

WHEREAS, Executive wishes to be employed by the Company on the terms set forth herein; and

WHEREAS, the Parties intend for this Agreement to set forth all of the terms and conditions of Executive’s employment with the Company, and to supersede and replace all prior agreements, arrangements, representations or understandings between the Parties regarding Executive’s employment with the Company.

AGREEMENT

NOW, THEREFORE, in consideration of the mutual promises and covenants contained herein, the Parties agree as follows:

1. **EMPLOYMENT.** The Company will employ Executive and Executive shall serve the Company in the capacity of General Counsel and Chief Compliance Officer (“**GC & CCO**”).
2. **DUTIES.** Executive shall render exclusive, full-time services to the Company. Executive shall report to the Company’s Chief Executive Officer (“**CEO**”) or, if the CEO position is unfilled, to another officer designated by the Board of Directors (the “**Board**”) or to the Board itself, as determined by the Board in its sole discretion. (For purposes of this Agreement, the term “**CEO**” is used generically to refer to the CEO or such other person(s) to whom Executive is assigned to report.) Executive shall perform services under this Agreement primarily at the Ames, Iowa, offices of the Company, and from time to time at such other locations as may be necessary or as otherwise reasonably requested by the Company. Subject to the terms of this Agreement, Executive’s responsibilities, working conditions and duties may be changed, expanded or eliminated at the sole discretion of the Company’s CEO. Executive shall devote Executive’s best efforts and full business time, skill and attention to performance of Executive’s duties on behalf of the Company; *provided, however*, that Executive may engage in civic and not-for-profit activities (*e.g.* charitable and industry association activities) as long as such activities do not materially interfere with Executive’s obligations hereunder. During Executive’s employment with the Company, Executive agrees not to engage in any business or for-profit activities outside the Company, including serving on any advisory boards or boards of directors of for-profit entities, except with the prior written approval of the CEO, which approval may be rescinded at any time in the CEO’s sole discretion, provided that in the event of such rescission Executive shall be permitted reasonable time for orderly withdrawal from any board with respect to which such consent has been rescinded. By signing this Agreement, Executive represents that, to the best of Executive’s knowledge, Executive is not subject to any other contract or duty that would interfere in any way with Executive’s employment with the Company or performance of employment duties hereunder.
3. **POLICIES AND PROCEDURES.** Executive shall be subject to and will comply with the policies and procedures of the Company, as they may be modified, expanded or eliminated from time to time at the Company’s sole discretion, except to the extent any such policy or procedure specifically conflicts with the express terms of this Agreement (in which case, this Agreement shall control).
4. **BASE SALARY.** For services rendered hereunder, Executive shall receive a base salary at the rate of \$345,000 per year (“**Base Salary**”), paid periodically in accordance with ordinary Company payroll practices, subject to applicable payroll withholdings and deductions. Executive’s Base Salary shall also be subject to annual reviews and periodic adjustment; provided that Executive’s Base Salary may not be decreased without

Executive's express written consent except in connection with an across-the-board reduction proportionally affecting all senior executives of the Company.

5. **BONUS.** Executive will be eligible to receive an annual performance bonus ("**Bonus**"), with a target level at twenty-five percent (25%) of Executive's Base Salary (the "**Bonus Target**"), with the annual amount of such Bonus to be determined in the sole discretion of the Company's Board of Directors (the "**Board**") or by its Compensation Committee (under authority delegated by the Board), based upon a review of both Executive's individual performance and the Company's performance (both of which may include, but are not limited to, achievement of certain milestones or performance objectives, if any, established by the Board or the Compensation Committee (the "**Bonus Plan**"). The Board or the Compensation Committee, in their sole discretion, shall determine the extent to which Executive has achieved any performance targets or other terms and conditions applicable to the Bonus; the amount of the Bonus (if any); and whether and to what extent a Bonus may be paid with respect to any year during which Executive's employment terminates, subject to the terms and conditions of this Agreement. Bonuses are not earned until they are approved in writing by the Board or Compensation Committee. Any Bonuses earned shall be paid subject to applicable employment taxes, withholding and deductions. Except as otherwise expressly provided in this Agreement or in the Bonus Plan, Executive must remain continuously employed with the Company through the date a Bonus is approved in order to be eligible to receive such Bonus.

6. **STOCK OPTIONS.** Executive currently holds certain stock options and/or Restricted Stock Units (collectively the "**Equity Awards**"), subject to the vesting schedule and all other terms, conditions and limitations applicable to such stock, stock options and/or Restricted Stock Units as set forth in the Company's 2009 Equity Incentive Plan as it may be amended from time to time (the "**Equity Plan**") and in Stock Award Agreements (as defined in the Equity Plan) approved by the Board and entered into by Executive. Executive may receive additional equity grants from time to time, in the sole discretion of the Board or a designated committee thereof.

7. **OTHER BENEFITS.** While employed by the Company pursuant to this Agreement, Executive shall be entitled to the following benefits:

(a) **Executive Benefits.** The Executive shall be entitled to all benefits to which other executive officers of the Company are entitled, on the same terms and conditions in effect from time to time, including, without limitation, participation in pension and profit sharing plans, the Company's 401(k) plan, group insurance policies and plans (including medical, health, vision, and disability insurance policies and plans, and the like) which may be maintained by the Company for the benefit of its executives. The Company reserves the right to alter, discontinue and/or amend its benefit plans and programs from time to time in its sole discretion.

(b) **Expense Reimbursement.** The Executive shall receive, upon presentation of proper receipts and vouchers, reimbursement for direct and reasonable out-of-pocket expenses incurred in connection with the performance of Executive's duties hereunder, in accordance with the Company's expense reimbursement policies and procedures in effect from time to time.

(c) **Paid Time Off.** Executive will accrue twenty-eight (28) days of paid time off ("**PTO**") each full year, accrued in bi-weekly increments (on the Company's regular payroll schedule), subject to Executive's continuing service. Unused PTO will carry over from year-to-year; provided, however, that Executive shall not be entitled to "carry over" more than twenty-eight (28) days of accrued unused PTO from year-to-year (the "**PTO Carryover Cap**"). Upon termination of employment for any reason, Executive shall be paid out (at Executive's last rate of pay) for Executive's then accrued unused PTO amount, up to a maximum of Executive's PTO Carryover Cap, less applicable payroll deductions and withholdings. Except as provided herein, Executive's PTO rights shall be governed by the Company's PTO policy and applicable law, as in effect from time to time; provided, however, that in the event of a conflict between this Agreement and the Company's governing PTO policy, this Agreement will control.

8. **CONFIDENTIAL INFORMATION, RIGHTS AND DUTIES.**

(a) **Proprietary Information.** Executive acknowledges and agrees to abide by all duties and obligations under his Proprietary Information, Inventions, Non-Competition and Non-Solicitation Agreement with the Company

(the “**Proprietary Information Agreement**”), attached hereto as **Exhibit A**.

(b) **Exclusive Property.** Executive agrees that all Company-related business procured by the Executive, and all Company-related business opportunities and plans made known to Executive while employed by the Company, are and shall remain the permanent and exclusive property of the Company.

9. **TERMINATION OF EMPLOYMENT.**

(a) **At-Will Status.** The Company and Executive understand and agree that this employment relationship is at-will. Accordingly, there are no promises or representations concerning the duration of Executive’s employment relationship, and it may be terminated by either Executive or the Company at any time, with or without Cause or Good Reason (as defined herein), and with or without advance notice. Executive’s at-will status cannot be altered except in an express written agreement signed by Executive and the Company with the specific approval of the Company’s Board.

(b) **Termination Due to Death or Disability.** Subject to applicable state or federal law, Executive’s employment with the Company will automatically terminate upon Executive’s death or a physical or mental disability or condition which renders Executive unable to perform the essential functions of Executive’s position (with or without accommodation) for more than six (6) months in any twelve (12) month period, or for more than four (4) consecutive months. This provision shall be interpreted and construed in accordance with the federal Americans with Disabilities Act of 1990 and all other applicable laws.

(c) **Resignation by Executive.** Executive may resign from the Company with or without Good Reason. The Company requests that Executive provide at least three (3) weeks advance written notice of a termination without Good Reason to allow for an orderly transition. The Company may accelerate the date Executive’s resignation is to become effective, in its sole discretion. In the event the Company accelerates the resignation effective date, the Executive will be paid Base Salary severance through the originally tendered resignation date, provided that in no such event will Executive be entitled to receive more than three (3) months of Base Salary severance beyond the accelerated resignation date.

(d) **Definition of Cause.** For purposes of this Agreement, “**Cause**” for the Company to terminate Executive shall mean: (i) Executive’s incompetence or failure or refusal to perform satisfactorily any duties reasonably required of Executive by the Company (other than by reason of Disability), which failure continues for fifteen (15) days after Executive receives specific written notice to cure; (ii) Executive’s conviction or plea of guilty or *nolo contendere* to any felony or to any other crime involving dishonesty or moral turpitude; (iii) any act or omission which constitutes a material breach of this Agreement, the Proprietary Information Agreement, the Company’s policies, or Executive’s fiduciary duty to the Company; (iv) any act or omission in connection with Executive’s employment with the Company, which involves material personal dishonesty by Executive or demonstrates a willful or continuing disregard for the best interests of the Company; or (v) Executive’s engaging in dishonorable or disruptive behavior, practices or acts which cause, or could be reasonably expected to cause, material harm or bring disrepute to the Company.

(e) **Definition of Good Reason.** For purposes of this Agreement, “**Good Reason**” means the occurrence of any of the following without Executive’s prior written consent: (i) a reduction in Executive’s Base Salary or benefits that materially diminishes the aggregate value of Executive’s compensation and benefits, unless a reduction is made in connection with an across-the-board reduction of all executives’ base salaries and/or employee benefits by a percentage less than 20% and at least equal to the percentage by which Executive’s Base Salary or employee benefits are reduced; (ii) in the event of such an across-the-board reduction and a subsequent across-the-board restoration of all or any portion of the reduced Base Salary or benefits, then a failure to restore Executive’s Base Salary or benefits in at least a proportional manner; (iii) a material reduction of Executive’s Bonus Target level; (iv) a material reduction in Executive’s duties, authority or responsibilities taken as a whole; or (v) a relocation of Executive’s principal place of employment that would result in an increase in Executive’s one-way commute by more than 30 miles. Notwithstanding the foregoing, “**Good Reason**” for Executive to resign shall not exist unless: (x) Executive provides the Company with specific written notice of the existence of the condition giving rise to Good Reason within ninety (90) days after its initial occurrence; (y) the Company fails to remedy such condition

within thirty (30) days after its receipt of such written notice; and (z) Executive resigns within sixty (60) days after the cure period has lapsed. (For avoidance of doubt, the requirement that Executive report to another officer or to the Board while the CEO position is vacant shall not constitute Good Reason for resignation.)

(f) **Final Pay upon Termination for Any Reason.** Except as otherwise provided by this Agreement and/or required by law, upon termination of Executive's employment for any reason, the Company's obligation to make payments hereunder shall cease, except that the Company shall pay all amounts due and payable for Executive's services through Executive's last day of employment (the "**Separation Date**"), including all accrued unpaid Base Salary and Bonus compensation earned through the Separation Date, any benefits accrued prior to the Separation Date, all accrued but unused vacation as of the Separation Date, and any reimbursable business expenses incurred but not reimbursed as of the Separation Date.

(g) **Severance Benefits upon a Covered Termination (No Change in Control).**

(i) **Severance Benefits.** If Executive's employment is terminated by the Company without Cause, or due to Executive's death or Disability, or as a result of Executive's resignation for Good Reason (each a "**Covered Termination**"), Executive shall be eligible to receive the following severance benefits: (1) payment of an amount equal to twelve (12) months of Executive's Base Salary in effect immediately prior to the Separation Date, less applicable payroll tax withholdings and deductions (the "**Severance**"); and (2) twelve (12) months of accelerated vesting of Executive's Equity Awards (so that Executive becomes vested in the portion of the Equity Awards that would have become vested if Executive remained employed for 365 days after the Separation Date). (For avoidance of doubt, to the extent that any performance criteria under any Equity Award has not been satisfied as of the Separation Date, such Equity Awards shall terminate as of the Separation Date and shall not be subject to the foregoing accelerated vesting benefit.) Except for the foregoing accelerated vesting benefit, all existing terms and conditions applicable to the Equity Awards shall remain in full force and effect. In addition, provided Executive timely elects to continue Executive's group health insurance coverage after the Separation Date pursuant to the federal COBRA law or, if applicable, state insurance laws (collectively, "**COBRA**"), and the terms of the governing health insurance policies, the Company will reimburse the monthly COBRA health insurance premiums (the "**COBRA Payments**") Executive pays to continue Executive's health insurance coverage (including dependent coverage) for twelve (12) months after the Separation Date or until such earlier date as Executive either becomes eligible for group health insurance coverage through a new employer or ceases to be eligible for COBRA coverage (the "**COBRA Payment Period**"). Executive must submit to the Company appropriate documentation of the foregoing health insurance payments, within sixty (60) days of making such payments, in order to be reimbursed. Notwithstanding the foregoing, if the Company determines, in its sole discretion, that it cannot pay the COBRA Payments without a substantial risk of violating applicable law (including, without limitation, Section 2716 of the Public Health Service Act), at the end of each remaining month of the COBRA Payment Period, the Company shall pay Executive directly a taxable monthly amount which, after taxes, equals the COBRA Payment amount the Company would have otherwise paid to Executive (assuming a 35% tax rate). Executive agrees to promptly notify the Company in writing if Executive becomes eligible for group health insurance coverage through a new employer before the end of the specified reimbursement period. For sake of reference, all severance benefits provided in entire subsection 9(g)(i) shall be referred to collectively as the "**Severance Benefits**."

(ii) **Preconditions.** As a precondition to receiving any Severance Benefits, Executive must (1) remain in compliance with all continuing obligations Executive owes to the Company, including those set forth under Executive's Proprietary Information Agreement, and (2) within twenty-one (21) days after the Separation Date, Executive must sign and return to the Company, a separation agreement and release of claims in substantially the form attached hereto as **Exhibit B** (the "**Release**") and allow the Release to become fully-effective and non-revocable by its terms. The Severance will be paid in the form of continuing salary installment payments, paid on the Company's ordinary payroll schedule starting immediately after the Separation Date; *provided, however*, that any payments that would be paid prior to the date the Release becomes fully effective and non-revocable (the "**Effective Date**"), shall be delayed and paid in full on the first payroll date after the Effective Date. (For avoidance of doubt, no Severance Benefits will be paid under any circumstances if the foregoing preconditions are not satisfied, or if Executive's employment ends because of a resignation without Good Reason or a termination for Cause.)

10. CHANGE IN CONTROL BENEFITS.

(a) **Change in Control Termination.** If Executive's employment with the Company is terminated by the Company without Cause (but not due to Executive's death or Disability) or Executive resigns with thirty (30) day notice and such termination or resignation occurs (A) within one (1) month before, or within thirteen (13) months after a Change in Control (defined below) or (B) on or before the thirteen month anniversary of the "Closing" as defined in the Agreement and Plan of Merger and Reorganization between NewLink Genetics Corporation, Cyclone Merger Sub, Inc. and Lumos Pharma, Inc. (the "Lumos Transaction") (each a "**CIC Termination**"), Executive shall be eligible to receive the following enhanced severance package (in lieu of the Severance Benefits described above): (i) payment of twelve (12) months of Executive's Base Salary as in effect immediately prior to the Separation Date, less applicable withholdings and deductions; (ii) payment of a bonus in an amount equal to the Bonus Target as described in Section 5 above, less applicable withholdings and deductions (the payments under clauses (i) and (ii) referred to as the "**CIC Cash Severance**"); (iii) accelerated vesting of Executive's Equity Awards so that Executive becomes one hundred percent (100%) vested in all such Equity Awards; and (iv) a twenty- four (24) month extension of the exercise period applicable to the Equity Awards so that Executive has 730 days after the Separation Date to exercise any vested Equity Awards (including, for avoidance of doubt, any portion of such awards that became vested as a result of the foregoing accelerated vesting benefit). As set forth above, this extended exercise period benefit may convert any stock options that were incentive stock options into non-qualified stock options, and Executive is advised to consult with an independent tax advisor for additional guidance. Except for the foregoing accelerated vesting benefit, all existing terms and conditions applicable to the Equity Awards shall remain in full force and effect. In addition, provided Executive timely elects to continue Executive's group health insurance coverage after the Separation Date pursuant to COBRA, and the terms of the governing health insurance policies, the Company will reimburse all monthly COBRA health insurance premiums the Executive pays to continue Executive's health insurance coverage (including dependent coverage) for twelve (12) months after the Separation Date or until such earlier date as Executive either becomes eligible for group health insurance coverage through a new employer or Executive ceases to be eligible for COBRA coverage. These CIC severance benefits shall be paid subject to the same preconditions and on the same terms and conditions applicable to the Severance Benefits; provided, however, that the CIC Cash Severance shall be paid in a lump sum within ten (10) business days of the Effective Date of the Release required under Section 9(g)(ii) (Preconditions).

(b) **Definition of Change in Control.** For purposes of this Agreement, "**Change in Control**" has the definition set forth in the Equity Plan. For the avoidance of doubt, the Lumos Transaction shall be deemed a Change in Control for purposes of this Agreement.

11. **CODE SECTION 409A COMPLIANCE.** Notwithstanding anything set forth in this Agreement to the contrary, any payments and benefits provided pursuant to this Agreement which constitute "deferred compensation" within the meaning of the Treasury Regulations issued pursuant to Section 409A shall not commence until Executive has incurred a "separation from service" (as such term is defined in the Treasury Regulation Section 1.409A-1(h) ("**Separation From Service**"), unless the Company reasonably determines that such amounts may be provided to Executive without causing Executive to incur the additional 20% tax under Section 409A.

For the avoidance of doubt, it is intended that the payments and benefits set forth in this Agreement satisfy, to the greatest extent possible, the exemptions from the application of Section 409A provided under Treasury Regulation Sections 1.409A-1(b)(4), 1.409A-1(b)(5) and 1.409A-1(b)(9) and this Agreement will be construed to the greatest extent possible as consistent with those provisions. To the extent not so exempt this Agreement (and any definitions hereunder) will be construed in a manner that complies with Section 409A and incorporates by reference all required definitions and payment terms. For purposes of Section 409A (including, without limitation, for purposes of Treasury Regulation Section 1.409A-2(b)(2)(iii)), Executive's right to receive any installment payments under this Agreement (whether severance payments, reimbursements or otherwise) shall be treated as a right to receive a series of separate payments and, accordingly, each installment payment hereunder shall at all times be considered a separate and distinct payment. Notwithstanding any provision to the contrary in this Agreement, if the Company (or, if applicable, the successor entity thereto) determines that any payments upon Executive's Separation From Service set forth herein and/or under any other agreement with the Company constitute "deferred compensation" under Section 409A and

Executive is, on Executive's Separation From Service, a "specified employee" of the Company or any successor entity thereto, as such term is defined in Section 409A(a)(2)(B)(i) of the Code, then, solely, to the extent necessary to avoid the incurrence of the adverse personal tax consequences under Section 409A, the timing of the payments upon Executive's Separation From Service shall be delayed until the earlier to occur of: (a) the date that is six months and one day after Executive's Separation From Service or (b) the date of Executive's death (such applicable date, the "**Specified Employee Initial Payment Date**"). On the Specified Employee Initial Payment Date, the Company (or the successor entity thereto, as applicable) shall (A) pay to Executive a lump sum amount equal to the sum of the payments upon Executive's Separation From Service that Executive would otherwise have received through the Specified Employee Initial Payment Date if the commencement of the payment of the severance benefits had not been so delayed pursuant to this section and (B) commence paying the balance of the severance benefits in accordance with the applicable payment schedules set forth in this Agreement.

None of the severance benefits under this Agreement will commence or otherwise be delivered prior to the effective date of the Release. If the period of time Executive has to execute the Release "crosses over" two (2) calendar years, the Release will be deemed to have been executed on the twenty-first (21st) day after the Separation Date. Except to the minimum extent that payments must be delayed because Executive is a "specified employee" (as described above) or until the effectiveness of the Release, all amounts will be paid as soon as practicable in accordance with the Company's normal payroll practices and no interest will be due on any amounts so deferred.

12. **BETTER AFTER-TAX PROVISION.** If any payment or benefit that Executive will or may receive from the Company or otherwise (a "**280G Payment**") would (i) constitute a "parachute payment" within the meaning of Section 280G of the Code, and (ii) but for this sentence, be subject to the excise tax imposed by Section 4999 of the Code (the "**Excise Tax**"), then any such 280G Payment will be equal to the Reduced Amount. The "**Reduced Amount**" will be either (x) the largest portion of the 280G Payment that would result in no portion of the 280G Payment (after reduction) being subject to the Excise Tax or (y) the largest portion, up to and including the total, of the 280G Payment, whichever amount (*i.e.*, the amount determined by clause (x) or by clause (y)), after taking into account all applicable federal, state and local employment taxes, income taxes, and the Excise Tax (all computed at the highest applicable marginal rate), results in Executive's receipt, on an after-tax basis, of the greater economic benefit notwithstanding that all or some portion of the 280G Payment may be subject to the Excise Tax. If a reduction in a 280G Payment is required pursuant to the preceding sentence and the Reduced Amount is determined pursuant to clause (x) of the preceding sentence, the reduction will occur in the manner (the "**Reduction Method**") that results in the greatest economic benefit for Executive. If more than one method of reduction will result in the same economic benefit, the items so reduced will be reduced pro rata (the "**Pro Rata Reduction Method**").

Notwithstanding the foregoing, if the Reduction Method or the Pro Rata Reduction Method would result in any portion of the 280G Payment being subject to taxes pursuant to Section 409A of the Code that would not otherwise be subject to taxes pursuant to Section 409A of the Code, then the Reduction Method and/or the Pro Rata Reduction Method, as the case may be, will be modified so as to avoid the imposition of taxes pursuant to Section 409A of the Code as follows: (A) as a first priority, the modification will preserve, to the greatest extent possible, the greatest economic benefit for Executive as determined on an after-tax basis; as a second priority, 280G Payments that are contingent on future events (*e.g.*, being terminated without Cause), will be reduced (or eliminated) before 280G Payments that are not contingent on future events; and as a third priority, 280G Payments that are "deferred compensation" within the meaning of Section 409A of the Code will be reduced (or eliminated) before 280G Payments that are not "deferred compensation" within the meaning of Section 409A of the Code.

If Section 280G of the Code is not applicable by law to Executive, the Company will determine whether any similar law in Executive's jurisdiction applies and should be taken into account.

The independent professional firm engaged by the Company for general tax audit purposes as of the day prior to the effective date of the Change in Control will make all determinations required to be made under this Section. If the firm so engaged by the Company is serving as accountant or auditor for the individual, entity or group effecting the Change in Control, the Company will appoint a nationally recognized independent professional firm to make the determinations required hereunder. The Company will bear all expenses with respect to the determinations by such firm required to be made hereunder. The Company will use commercially reasonable efforts to cause the firm

engaged to make the determinations hereunder to provide its calculations, together with detailed supporting documentation, to the Company and Executive within thirty (30) calendar days after the date on which Executive's right to a 280G Payment becomes reasonably likely to occur (if requested at that time by the Company or Executive) or such other time as requested by the Company or Executive.

If Executive receives a 280G Payment for which the Reduced Amount was determined pursuant to clause (x) of the first paragraph of this Section and the Internal Revenue Service determines thereafter that some portion of the 280G Payment is subject to the Excise Tax, Executive will promptly return to the Company a sufficient amount of the 280G Payment (after reduction pursuant to clause (x) of the first paragraph of this Section) so that no portion of the remaining 280G Payment is subject to the Excise Tax. For the avoidance of doubt, if the Reduced Amount was determined pursuant to clause (y) of the first paragraph of this Section, Executive will have no obligation to return any portion of the 280G Payment pursuant to the preceding sentence.

13. **MISCELLANEOUS.**

(a) **Taxes.** Executive shall be responsible for the payment of any taxes due on any and all compensation, stock option, or benefit provided by the Company pursuant to this Agreement which are not withheld by the Company. Executive agrees to indemnify and hold harmless the Company from any and all claims or penalties asserted against the Company arising from Executive's failure to pay taxes due on any compensation, stock option, or benefit provided by the Company pursuant to this Agreement. Executive expressly acknowledges that the Company has not made any representation about the tax consequences of any consideration provided by the Company to Executive pursuant to this Agreement.

(b) **Modification/Waiver.** This Agreement may not be amended, modified, superseded, canceled, renewed or expanded, or any terms or covenants hereof waived, except by a writing executed by each of the Parties or, in the case of a waiver, by the Party waiving compliance. Failure of any Party at any time to require performance of any provision hereof shall in no manner affect his, her or its right at a later time to enforce such provision. No waiver by a Party of a breach of this Agreement shall be deemed to be or construed as a waiver of any other breach of any term or condition contained in the Agreement.

(c) **Successors and Assigns.** This Agreement may be assigned by the Company to an affiliated entity or to any successor or assignee of the Company with or without Executive's consent. This Agreement shall not be assignable by Executive.

(d) **Notices.** All notices to be given hereunder shall be in writing and shall be deemed to have been duly given on: the date personally or hand delivered; one (1) day after being sent by internationally-recognized overnight delivery courier; and three (3) days after being sent by certified mail, return receipt requested. Notices mailed to Executive shall be sent to Executive's last home address as reflected in the Company's personnel records. Executive promptly shall notify Company of any change in Executive's address. Notices to be issued to the Company shall be directed to the Company's **CEO** and shall be mailed to the Company's headquarters.

(e) **Dispute Resolution.** To aid in the rapid and economical resolution of any disputes that may arise in the course of Executive's employment relationship, the Parties agree that any and all disputes, claims, or demands arising from or relating to the terms of this Agreement (including but not limited to the Proprietary Information Agreement incorporated by reference herein), Executive's employment relationship with the Company, or the termination of that relationship (including statutory claims), shall be resolved, to the fullest extent permitted by law, by final, binding and confidential arbitration in Des Moines, Iowa conducted before a single neutral arbitrator by JAMS, Inc. ("**JAMS**") or its successor, under the then applicable JAMS Arbitration Rules and Procedures for Employment Disputes (available at <http://www.jamsadr.com/rules-employment-arbitration/>) and subject to JAMS' Policy on Employment Arbitration Minimum Standards of Procedural Fairness. **The Parties acknowledge that by agreeing to this arbitration procedure, they waive the right to resolve any such dispute, claim or demand through a trial by jury or judge or by administrative proceeding.** Executive will have the right to be represented by legal counsel at any arbitration proceeding, at Executive's expense. The arbitrator shall: (a) have authority to compel adequate discovery for the resolution of the dispute and to award such relief as would otherwise be available

under applicable law in a court proceeding; (b) issue a written statement signed by the arbitrator regarding the disposition of each claim and the relief, if any, awarded as to each claim, the reasons for the award, and the arbitrator's essential findings and conclusions on which the award is based; and (c) have authority to, in the arbitrator's discretion, award recovery of attorneys' fees and costs to the prevailing party. The Company shall pay all JAMS' arbitration fees. Nothing in this Agreement is intended to prevent either Party from obtaining injunctive relief in a court of applicable jurisdiction to prevent irreparable harm pending the conclusion of any arbitration; or from enforcing any arbitration award in a court of applicable jurisdiction.

(f) **Entire Agreement.** This Agreement, together with the Exhibits, sets forth the complete and exclusive agreement and understanding of the Parties with regard to the subject matter hereof, and supersedes any and all prior or contemporaneous agreements, promises, representations, or communications, written or oral, pertaining to the subject matter hereof (including, without limitation, the Executive's July 26, 2018 Employment Agreement with the Company). If any provision of this Agreement is determined to be invalid or unenforceable, in whole or in part, this determination will not affect any other provision of this Agreement, and the invalid or unenforceable provision shall be modified to render it valid and enforceable consistent with the intent of the parties insofar as possible under applicable law. For purposes of construing this Agreement, any ambiguities shall not be construed against any party as the drafter. This Agreement may be executed in counterparts, which shall be deemed to be part of one original, and facsimile signatures, signatures transmitted by .PDF, as well as electronic signatures, shall be equivalent to original signatures. The validity, interpretation, construction and performance of this Agreement shall be governed by the laws of the State of Iowa, without regard to conflict of laws principles.

IN WITNESS WHEREOF, the Parties have each duly executed this Agreement as of the date written above to indicate their understanding and acceptance of all of the above-stated terms and conditions.

NEWLINK GENETICS CORPORATION

By: /s/Carl Langren

Its: CFO

EXECUTIVE /s/Brad Powers

EXHIBIT A

EMPLOYEE PROPRIETARY INFORMATION AGREEMENT

EMPLOYEE PROPRIETARY INFORMATION AND INVENTIONS AGREEMENT

This Employee Proprietary Information, Inventions, Non-competition, and Non-solicitation Agreement (this "Agreement") is made in consideration for my employment or continued employment by NewLink Genetics Corporation or any of its subsidiaries (the "Company"), and the compensation now and hereafter paid to me. I hereby agree as follows:

1. NONDISCLOSURE.

1.1 Recognition of Company's Rights; Nondisclosure. At all times during my employment and thereafter, I will hold in strictest confidence and will not disclose, use, lecture upon or publish any of the Company's Proprietary Information (defined below), except as such disclosure, use or publication may be required in connection with my work for the Company, or unless an officer of the Company expressly authorizes such in writing. I will obtain Company's written approval before publishing or submitting for publication any material (written, verbal, or otherwise) that relates to my work at Company and/or incorporates any Proprietary Information. I hereby assign to the Company any rights I may have or acquire in such Proprietary Information and recognize that all Proprietary Information shall be the sole property of the Company and its assigns.

1.2 Proprietary Information. The term "**Proprietary Information**" shall mean any and all confidential and/or proprietary knowledge, data or information of the Company. By way of illustration but not limitation, "Proprietary Information" includes (a) tangible and intangible information relating to antibodies and other biological materials, cell lines, samples of assay components, media and/or cell lines and procedures and formulations for producing any such assay components, media and/or cell lines, formulations, products, processes, know-how, designs, formulas, methods, developmental or experimental work, clinical data, improvements, discoveries, plans for research, new products, marketing and selling, business plans, budgets and unpublished financial statements, licenses, prices and costs, suppliers and customers, and information regarding the skills and compensation of other employees of the Company; (b) trade secrets, inventions, mask works, ideas, processes, formulas, source and object codes, data, programs, other works of authorship, know-how, improvements, discoveries, developments, designs and techniques (hereinafter collectively referred to as "Inventions"); (c) information regarding plans for research, development, new products, marketing and selling, business plans, budgets and unpublished financial statements, licenses, prices and costs, suppliers and customers; and (d) information regarding the skills and compensation of other employees of the Company. Notwithstanding the foregoing, it is understood that, at all such times, I am free to use information which is generally known in the trade or industry, which is not gained as result of a breach of this Agreement, and my own, skill, knowledge, know-how and experience to whatever extent and in whichever way I wish.

1.3 Third Party Information. I understand, in addition, that the Company has received and in the future will receive from third parties confidential or proprietary information ("Third Party Information") subject to a duty on the Company's part to maintain the confidentiality of such information and to use it only for certain limited purposes. During the term of my employment and thereafter, I will hold Third Party Information in the strictest confidence and will not disclose to anyone (other than Company personnel who need to know such information in connection with their work for the Company) or use, except in connection with my work for the Company, Third Party Information unless expressly authorized by an officer of the Company in writing.

1.4 No Improper Use of Information of Prior Employers and Others. During my employment by the Company I will not improperly use or disclose any confidential information or trade secrets, if any, of any third party, including but not limited to any former employer or any other person or entity to whom I have an obligation of confidentiality, and I will not bring onto the premises of the Company any unpublished documents or any property belonging to any third party, including but not limited to any former employer or any other person or entity to whom I have an obligation of confidentiality unless consented to in writing by that third party. I will use in the performance of my duties only information which is generally known and used by persons with training and experience comparable to

my own, which is common knowledge in the industry or otherwise legally in the public domain, or which is otherwise provided, obtained, or developed by or for the Company.

2. ASSIGNMENT OF INVENTIONS.

2.1 Proprietary Rights. The term “**Proprietary Rights**” shall mean all trade secret, patent, copyright, mask work and other intellectual property rights throughout the world.

2.2 Prior Inventions. Inventions, if any, patented or unpatented, which I made prior to the commencement of my employment with the Company are excluded from the scope of this Agreement. To preclude any possible uncertainty, I have set forth on *Exhibit A* (Previous Inventions) attached hereto a complete list of all Inventions that I have, alone or jointly with others, conceived, developed or reduced to practice or caused to be conceived, developed or reduced to practice prior to the commencement of my employment with the Company, that I consider to be my property or the property of third parties and that I wish to have excluded from the scope of this Agreement (collectively referred to as “**Prior Inventions**”). If disclosure of any such Prior Invention would cause me to violate any prior confidentiality agreement, I understand that I am not to list such Prior Inventions in Exhibit A but am only to disclose a cursory name for each such invention, a listing of the party (ies) to whom it belongs and the fact that full disclosure as to such inventions has not been made for that reason. A space is provided on Exhibit A for such purpose. If no such disclosure is attached, I represent that there are no Prior Inventions. If, in the course of my employment with the Company, I incorporate a Prior Invention into a Company product, process or machine, the Company is hereby granted and shall have a nonexclusive, royalty-free, irrevocable, perpetual, worldwide license (with rights to sublicense through multiple tiers of sublicensees) to make, have made, modify, use and sell such Prior Invention. Notwithstanding the foregoing, I agree that I will not incorporate, or permit to be incorporated, Prior Inventions in any Company Inventions without the Company’s prior written consent.

2.3 Assignment of Inventions. Subject to Sections 2.4, and 2.6, I hereby assign and agree to assign in the future (when any such Inventions or Proprietary Rights are first reduced to practice or first fixed in a tangible medium, as applicable) to the Company all my right, title and interest in and to any and all Inventions (and all Proprietary Rights with respect thereto) whether or not patentable or registrable under copyright or similar statutes, made or conceived or reduced to practice or learned by me, either alone or jointly with others, during the period of my employment with the Company. Inventions assigned to the Company, or to a third party as directed by the Company pursuant to this Section 2, are hereinafter referred to as “Company Inventions.”

2.4 Nonassignable Inventions. I recognize that, in the event of a specifically applicable state law, regulation, rule, or public policy (“Specific Inventions Law”), this Agreement will not be deemed to require assignment of any invention which qualifies fully for protection under a Specific Inventions Law by virtue of the fact that any such invention was, for example, developed entirely on my own time without using the Company’s equipment, supplies, facilities, or trade secrets and neither related to the Company’s actual or demonstrably anticipated business, research or development, nor resulted from work performed by me for the Company. In the absence of a Specific Inventions Law, the preceding sentence will not apply.

2.5 Obligation to Keep Company Informed. During the period of my employment with the Company, I will promptly disclose to the Company fully and in writing all Inventions authored, conceived or reduced to practice by me, either alone or jointly with others; and all patent applications filed by me or on my behalf. At the time of each such disclosure, I will advise the Company in writing of any Inventions that I believe fully qualify for protection under the provisions of a Specific Inventions Law; and I will at that time provide to the Company in writing all evidence necessary to substantiate that belief. The Company will keep in confidence and will not use for any purpose or disclose to third parties without my consent any confidential information disclosed in writing to the Company pursuant to this Agreement relating to Inventions that qualify fully for protection under a Specific Inventions Law. I will preserve the confidentiality of any Invention that does not fully qualify for protection under a Specific Inventions Law.

2.6 Government or Third Party. I also agree to assign all my right, title and interest in and to any particular Company Invention to a third party, including without limitation the United States, as directed by the Company.

2.7 Works for Hire. I acknowledge that all original works of authorship which are made by me (solely or jointly with others) within the scope of my employment at the Company and which are protectable by copyright are “works made for hire,” pursuant to United States Copyright Act (17 U.S.C., Section 101).

2.8 Enforcement of Proprietary Rights.

(i) **Obligation to Assist.** I will assist the Company in every proper way to obtain, and from time to time enforce, United States and foreign Proprietary Rights relating to Company Inventions in any and all countries. To that end I will execute, verify and deliver such documents and perform such other acts (including appearances as a witness) as the Company may reasonably request for use in applying for, obtaining, perfecting, evidencing, sustaining and enforcing such Proprietary Rights and the assignment thereof. In addition, I will execute, verify and deliver assignments of such Proprietary Rights to the Company or its designee. My obligation to assist the Company with respect to Proprietary Rights relating to such Company Inventions in any and all countries shall continue beyond the termination of my employment, but the Company shall compensate me at a reasonable rate after my termination for time actually spent by me at the Company’s request on such assistance.

(ii) **Appointment of Attorney in Fact.** In the event the Company is unable for any reason, after reasonable effort, to secure my signature on any document needed in connection with the actions specified in the preceding paragraph, I hereby irrevocably designate and appoint the Company and its duly authorized officers and agents as my agent and attorney in fact, which appointment is coupled with an interest, to act for and in my behalf to execute, verify and file any such documents and to do all other lawfully permitted acts to further the purposes of the preceding paragraph with the same legal force and effect as if executed by me. I hereby waive and quitclaim to the Company any and all claims, of any nature whatsoever, which I now or may hereafter have for infringement of any Proprietary Rights assigned hereunder to the Company.

3. NO CONFLICTS, NON-SOLICITATION, AND NON-INTERFERENCE. I acknowledge that during my employment I will have access to and knowledge of Proprietary Information. To protect the Company’s Proprietary Information, I agree that during the period of my employment by the Company I will not, without the Company’s express written consent, engage in any other employment or business activity directly related to the business in which the Company is now involved or becomes involved, nor will I engage in any other activities which conflict with my obligations to the Company or the interests of the Company. For the period of my employment by the Company and continuing until one year after my last day of employment with the Company, I will not: (a) directly or indirectly induce any employee of the Company to terminate or reduce his or her relationship with the Company; (b) solicit the business of any Client or Customer of the Company (other than on behalf of the Company) for any competitive purpose; or (c) induce any supplier, vendor, consultant or independent contractor of the Company to terminate or reduce his, her or its relationship with the Company. I agree that for purposes of this Agreement, a “**Client or Customer**” is any person or entity with whom or which, at any time during the two year period prior to my last day of employment with the Company, (i) I had direct dealings; (ii) an individual whom I supervised had direct dealings; or (iii) about whom or which I obtained confidential information. If any restriction set forth in this Section is found by any court of competent jurisdiction to be unenforceable because it extends for too long a period of time or over too great a range of activities or in too broad a geographic area, it shall be interpreted to extend only over the maximum period of time, range of activities or geographic area as to which it may be enforceable.

4. COVENANT NOT TO COMPETE. I acknowledge that during my employment I will have access to and knowledge of Proprietary Information. To protect the Company’s Proprietary Information, I agree that during my employment with the Company, whether full-time or part-time, and for a period of one year after my last day of employment with the Company, I will not directly or indirectly engage in (whether as an employee, consultant, proprietor, partner, director or otherwise), or have any ownership interest in, or participate in the financing, operation, management or control of, any person, entity, corporation or business that engages in a “Restricted Business” in a “Restricted Territory” (as defined below). It is agreed that ownership of (i) no more than one percent (1%) of the outstanding voting stock of a publicly traded corporation, or (ii) any stock I presently own shall not constitute a violation of this provision.

4.1 Reasonable. I agree and acknowledge that the time limitation on the restrictions in this paragraph, combined with the geographic scope, is reasonable. I also acknowledge and agree that this paragraph is reasonably necessary for the protection of the Company's Proprietary Information as defined in paragraph

1.2 herein, that through my employment I shall receive adequate consideration for any loss of opportunity associated with the provisions herein, and that these provisions provide a reasonable way of protecting the Company's business value, some of which will be imparted to me in the ordinary course of my employment with the Company. If any restriction set forth in this paragraph 4 is found by any court of competent jurisdiction to be unenforceable because it extends for too long a period of time or over too great a range of activities or in too broad a geographic area, it shall be interpreted to extend only over the maximum period of time, range of activities or geographic area as to which it may be enforceable.

4.2 As used herein, the terms:

(i) **"Restricted Business"** shall mean a business that is engaged in or is preparing to engage in any of the areas that the Company is actively pursuing, including but not limited to research, development and/or commercialization of (1) one or more products for the treatment of cancer or infectious disease based upon the Company's HyperAcute technology platform; (2) one or more products for the treatment of cancer based upon IDO, TDO or PTEN inhibitors; (3) vaccines against the Ebola virus; or (4) any other area of research, development, or commercialization drug or biologic candidate potentially likely which is intended to address the same enzymatic target (such as, for example, IDO) as any drug or biologic candidate that (i) is the subject area of research, development, or commercialization in which the Company or any subsidiary is engaged pursuant to a program which is being materially funded by the Company, a strategic partner of the Company, and/or a grant to the Company and (ii) as to which I participated in or was familiar with the details of such the research, development or commercialization during their time of my employment with Company or regarding which I possess Confidential Information. For purposes of the preceding sentence, the determination of the scope of the Company's business activities shall be made as of the date of termination of my employment.

(ii) **"Restricted Territory"** shall mean any state, county, or locality in the United States in which the Company conducts business and any other country, city, state, jurisdiction, or territory in which the Company does business or plans to do business.

5. RECORDS. I agree to keep and maintain adequate and current records (in the form of notes, sketches, drawings and any other form that may be required by the Company) of all Proprietary Information developed by me and all Company Inventions made by me during the period of my employment at the Company, which records shall be available to and remain the sole property of the Company at all times.

6. NO CONFLICTING OBLIGATION. I represent that my performance of all the terms of this Agreement and as an employee of the Company does not and will not breach any agreement to keep in confidence information acquired by me in confidence or in trust prior to my employment by the Company, nor any other lawful obligation I have to any third party. I have not entered into, and I agree I will not enter into, any agreement either written or oral in conflict herewith.

7. RETURN OF COMPANY MATERIALS. When I leave the employ of the Company, or earlier if requested by the Company, I will deliver to the Company any and all drawings, notes, memoranda, specifications, devices, formulas, documents, materials, and tangible or intangible property of the Company together with all copies thereof, and any other material containing or embodying any Company Inventions, Third Party Information or Proprietary Information of the Company without retaining any reproductions or embodiments thereof in whole or in part and in any medium. By way of example, such items include but are not limited to: Company files, records, plans, forecasts, reports, studies, analyses, proposals, agreements, financial information, information regarding potential business development partners, research and development information, sales and marketing information, operational and personnel information, code, software, databases, computer-recorded information, and tangible property and equipment (including, but not limited to, computers, data storage devices, facsimile machines, mobile telephones, servers, credit cards, entry cards, identification badges and keys). In addition, if I have used any personal computer, server, or e-mail system to receive, store, review, prepare or transmit any Company information, including but not

limited to, Confidential Information, I agree to provide Company with a computer-useable copy of all such Confidential Information and then permanently delete and expunge such Confidential Information from those systems; and I agree to provide Company access to my system as reasonably requested to verify that the necessary copying and/or deletion is completed. I further agree that any property situated on the Company's premises and owned by the Company, including disks and other storage media, filing cabinets or other work areas, is subject to inspection by Company personnel at any time with or without notice.

8. **LEGAL AND EQUITABLE REMEDIES.** Because my services are personal and unique and because I may have access to and become acquainted with the Proprietary Information of the Company, the Company shall have the right to enforce this Agreement and any of its provisions by injunction, specific performance or other equitable relief, without bond and without prejudice to any other rights and remedies that the Company may have for a breach of this Agreement.

9. **NOTICES.** Any notices required or permitted hereunder shall be given to the appropriate party at the address specified below or at such other address as the party shall specify in writing. Such notice shall be deemed given upon personal delivery or express delivery service (e.g., FedEx) to the appropriate address; upon delivery via facsimile; or if sent by certified or registered mail, three days after the date of mailing.

10. **NOTIFICATION OF NEW EMPLOYER.** In the event that I leave the employ of the Company, I hereby consent to the notification of my new employer of my rights and obligations under this Agreement.

11. **GENERAL PROVISIONS.**

11.1 Governing Law; Consent to Personal Jurisdiction and Exclusive Forum. This Agreement will be governed by and construed according to the laws of the State of Iowa as such laws are applied to agreements entered into and to be performed entirely within Iowa between Iowa residents. I hereby expressly understand and consent that my employment is a transaction of business in the State of Iowa and constitutes the minimum contacts necessary to make me subject to the personal jurisdiction of the federal courts located in the State of Iowa, and the state courts located in the County of Story, Iowa, for any lawsuit filed against me by Company arising from or related to this Agreement. I agree and acknowledge that any controversy arising out of or relating to this Agreement or the breach thereof, or any claim or action to enforce this Agreement or portion thereof, or any controversy or claim requiring interpretation of this Agreement must be brought in a forum located within the State of Iowa. No such action may be brought in any forum outside the State of Iowa. Any action brought in contravention of this paragraph by one party is subject to dismissal at any time and at any stage of the proceedings by the other, and no action taken by the other in defending, counter claiming or appealing shall be construed as a waiver of this right to immediate dismissal. A party bringing an action in contravention of this paragraph shall be liable to the other party for the costs, expenses and attorney's fees incurred in successfully dismissing the action or successfully transferring the action to the federal courts located in the State of Iowa, or the state courts located in the County of Story, Iowa.

11.2 Severability. In case any one or more of the provisions contained in this Agreement shall, for any reason, be held to be invalid, illegal or unenforceable in any respect, such invalidity, illegality or unenforceability shall not affect the other provisions of this Agreement; this Agreement shall be construed as if such invalid, illegal or unenforceable provision had never been contained herein; and such provision shall be deemed modified and enforceable, insofar as possible consistent with its original intent. By way of example, if, moreover, any one or more of the provisions contained in this Agreement shall for any reason be held to be excessively broad as to duration, geographical scope, activity or subject, it shall be construed by limiting and reducing it, so as to be enforceable to the extent compatible with the applicable law as it shall then appear.

11.3 Successors and Assigns. This Agreement will be binding upon my heirs, executors, administrators and other legal representatives and will be for the benefit of the Company, its successors, and its assigns. My obligations under this Agreement are not assignable to any party.

11.4 Survival. The provisions of this Agreement shall survive the termination of my employment and the assignment of this Agreement by the Company to any successor in interest or other assignee.

11.5 Employment. I agree and understand that my employment is at-will which means I or the Company each have the right to terminate my employment, with or without advanced notice and with or without cause. I further agree and understand that nothing in this Agreement shall confer any right with respect to continuation of employment by the Company, nor shall it interfere in any way with my right or the Company's right to terminate my employment at any time, with or without cause.

11.6 Waiver. To be valid, any waiver by me or the Company of any breach of this Agreement or right hereunder shall be specifically stated in writing, and shall not be a waiver of any preceding or succeeding breach unless so specifically stated. No waiver of any right under this Agreement and applicable law shall be construed as a waiver of any other right. Neither party shall be required to give notice to enforce strict adherence to all terms of this Agreement.

11.7 Entire Agreement. The obligations pursuant to this Agreement shall apply to any time during which I was previously, or am in the future, employed or engaged as a consultant by the Company, if no other agreement governs the subject matter thereof. This Agreement is the final, complete and exclusive agreement of the parties with respect to the subject matter hereof and supersedes and merges all prior communications and representations with respect to such subject matter. No modification of or amendment to this Agreement will be effective unless in writing and signed by the party to be charged. Any subsequent changes in my duties, salary or compensation will not affect the validity or scope of this Agreement.

EMPLOYEE PROPRIETARY INFORMATION AND INVENTIONS AGREEMENT ACKNOWLEDGEMENT FORM

I acknowledge that I have been given a copy of the Employee Proprietary Information and Inventions Agreement, that I have read it, and that I understand its terms and procedures. Furthermore, I agree to abide by it and understand that if NewLink determines my conduct warrants it, I may be subject to discipline for breaches hereof, up to and including the immediate termination of my employment.

Brad Powers

Employee's Name (Please Print)

/s/Brad Powers

Employee's Signature

9/23/2019

Date

EXHIBIT B

RELEASE

[To be signed on or within twenty-one (21) days after the Separation Date]

My employment with NewLink Genetics Corporation (the “**Company**”) ended in all capacities on (the “**Separation Date**”). I hereby confirm that I have been paid all compensation owed to me by the Company for all hours worked; I have received all the leave and leave benefits and protections for which I was eligible, pursuant to the Company’s policies, applicable law, or otherwise; and I have not suffered any on-the-job injury or illness for which I have not already filed a workers’ compensation claim.

If I choose to enter into this Release and allow it to become effective by its terms, the Company will provide me with certain severance benefits pursuant to the terms of the Employment Agreement between me and the Company dated , 2019 (the “**Agreement**”). I understand that I am not entitled to such severance benefits unless I return this fully-executed Release to the Company within twenty-one (21) days after the Separation Date, and allow this Release to become fully effective and non-revocable by its terms. (Capitalized terms used but not defined in this Release shall have the meaning ascribed to them in the Agreement.)

In exchange for the severance benefits to which I would not otherwise be entitled, I hereby generally and completely release the Company and its directors, officers, employees, shareholders, partners, agents, attorneys, predecessors, successors, parent and subsidiary entities, insurers, affiliates, and assigns (collectively, the “**Released Parties**”) from any and all claims, liabilities and obligations, both known and unknown, arising from or in any way related to events, acts, conduct, or omissions occurring prior to or at the time that I sign this Release, including but not limited to claims arising from or in any way related to my employment with the Company or the termination of that employment (collectively, the “**Released Claims**”). By way of example, the Released claims include, but are not limited to: (1) all claims related to my compensation or benefits from the Company, including salary, bonuses, commissions, vacation pay, expense reimbursements, severance pay, fringe benefits, stock, stock options, or any other ownership interests in the Company; (2) all claims for breach of contract, wrongful termination, and breach of the implied covenant of good faith and fair dealing; (3) all tort claims, including claims for fraud, defamation, emotional distress, and discharge in violation of public policy; and (4) all federal, state, and local statutory claims, including claims for discrimination, harassment, retaliation, attorneys’ fees, or other claims arising under the federal Civil Rights Act of 1964 (as amended), the federal Americans with Disabilities Act of 1990, the federal Age Discrimination in Employment Act of 1967 (as amended) (“**ADEA**”), and Iowa state law.

Notwithstanding the foregoing, the following are not included in the Released Claims (the “**Excluded Claims**”): (a) any claims for breach of the Agreement arising after the date on which I sign this Release; (2) claims for reimbursement of properly incurred business expenses prior to and through the Separation Date which are submitted to the Company for reimbursement within thirty (30) days after the Separation Date; (3) all rights I have in respect of the Equity Awards; (4) all claims for or rights to indemnification pursuant to the articles of incorporation and bylaws of the Company, any indemnification agreement to which I am a party, or under applicable law; and (5) all claims which cannot be waived as a matter of law. I understand that nothing in this Release prevents me from filing, cooperating with, or participating in any proceeding before the Equal Employment Opportunity Commission, the Department of Labor, or any other government agency, except that I acknowledge and agree that I am hereby waiving my right to any monetary benefits in connection with any such claim, charge or proceeding. I hereby represent and warrant that, other than the Excluded Claims, I am not aware of any claims that I have or might have against any of the parties released above that are not included in the Released Claims.

[IF EXECUTIVE IS 40 YEARS OF AGE OR OLDER] I acknowledge that I am knowingly and voluntarily waiving and releasing any rights I may have under the ADEA, and that the consideration given for this Release is in addition to anything of value to which I was already entitled. I further acknowledge that I have been advised, as required by the ADEA, that: (a) my waiver and release does not apply to any rights or claims that may arise after the date I sign this Release; (b) I have been advised that I have the right to consult with an attorney prior to executing this Release (although I may choose voluntarily not to do so); (c) I have been given twenty-one (21) days to consider this Release (although I may choose voluntarily to sign it earlier); (d) I have seven (7) days following my execution of this Release to revoke my acceptance of it (with such revocation to be delivered in writing to the Company within the 7-day revocation period); and (e) this Release will not be effective until the date upon which the revocation period has expired, which will be the eighth day after I sign it, provided I do not earlier revoke it ("**Effective Date**").

I further agree: (a) not to disparage the Company or any of the other Released Parties, in any manner likely to be harmful to its or their business, business reputation or personal reputation (although I may respond accurately and fully to any question, inquiry or request for information as required by legal process); (b) not to voluntarily (except in response to legal compulsion) assist any third party in bringing or pursuing any proposed or pending litigation, arbitration, administrative claim or other formal proceedings against the Company, its affiliates, officers, directors, employees or agents; and (c) to reasonably cooperate with the Company by voluntarily (without legal compulsion) providing accurate and complete information, in connection with the Company's actual or contemplated defense, prosecution or investigation of any claims or demands by or against third parties, or other matters, arising from events, acts, or omissions that occurred during my employment with the Company. I hereby certify that I have returned, without retaining any reproductions (in whole or in part), all information, materials and other property of the Company, including but not limited to any such information, materials or property contained on any personally-owned electronic or other storage device (such as computer, cellular phone, PDA, tablet or the like).

This Release, together with the Agreement (including all Exhibits and documents incorporated therein by reference), constitutes the complete, final and exclusive embodiment of the entire agreement between me and the Company with regard to this subject matter. It is entered into without reliance on any promise or representation, written or oral, other than those expressly contained in the Release or the Agreement, and it entirely supersedes any other such promises, warranties or representations, whether oral or written.

Reviewed, Understood and Agreed:

By:

Date:

EMPLOYMENT AGREEMENT

THIS EMPLOYMENT AGREEMENT (the “**Agreement**”) is made as of this 30th day of September 2019, by and between NewLink Genetics Corporation (the “**Company**”), and Lori Lawley (“**Executive**”) (collectively, the “**Parties**”, each a “**Party**”).

WHEREAS, the Company wishes to employ and/or continue to employ Executive and to assure itself of Executive’s services on the terms set forth herein;

WHEREAS, Executive wishes to be employed by the Company on the terms set forth herein; and

WHEREAS, the Parties intend for this Agreement to set forth all of the terms and conditions of Executive’s employment with the Company, and to supersede and replace all prior agreements, arrangements, representations or understandings between the Parties regarding Executive’s employment with the Company.

AGREEMENT

NOW, THEREFORE, in consideration of the mutual promises and covenants contained herein, the Parties agree as follows:

1. **EMPLOYMENT.** The Company will employ Executive and Executive shall serve the Company in the capacity of Vice President - Finance and Controller (“**VP Finance**”).
2. **DUTIES.** Executive shall render exclusive, full-time services to the Company. Executive shall report to the Company’s Chief Financial Officer (“**CFO**”) in Executive’s role. Executive shall perform services under this Agreement primarily at the Company’s office in Austin, Texas, and from time to time at such other locations as may be necessary or as otherwise reasonably requested by the Company. Subject to the terms of this Agreement, Executive’s responsibilities, working conditions and duties may be changed, expanded or eliminated at the sole discretion of the Company’s CFO or Chief Executive Officer (“**CEO**”). Executive shall devote Executive’s best efforts and full business time, skill and attention to performance of Executive’s duties on behalf of the Company; *provided, however*, that Executive may engage in civic and not-for-profit activities (*e.g.* charitable and industry association activities) as long as such activities do not materially interfere with Executive’s obligations hereunder. During Executive’s employment with the Company, Executive agrees not to engage in any business or for-profit activities outside the Company, including serving on any advisory boards or boards of directors of for-profit entities, except with the prior written approval of the CFO or CEO, which approval may be rescinded at any time in the CFO or CEO’s sole discretion, provided that in the event of such rescission Executive shall be permitted reasonable time for orderly withdrawal from any board with respect to which such consent has been rescinded. By signing this Agreement, Executive represents that, to the best of Executive’s knowledge, Executive is not subject to any other contract or duty that would interfere in any way with Executive’s employment with the Company or performance of employment duties hereunder.
3. **POLICIES AND PROCEDURES.** Executive shall be subject to and will comply with the policies and procedures of the Company, as they may be modified, expanded or eliminated from time to time at the Company’s sole discretion, except to the extent any such policy or procedure specifically conflicts with the express terms of this Agreement (in which case, this Agreement shall control).
4. **BASE SALARY.** For services rendered hereunder, Executive shall receive a base salary at the rate of \$272,000 per year (“**Base Salary**”), paid periodically in accordance with ordinary Company payroll practices, subject to applicable payroll withholdings and deductions. Executive’s Base Salary shall also be subject to annual reviews and periodic adjustment; provided that Executive’s Base Salary may not be

decreased without Executive's express written consent except in connection with an across-the-board reduction proportionally affecting all senior executives of the Company.

5. **BONUS.** Executive will be eligible to receive an annual performance bonus ("**Bonus**"), with a target level at twenty-five percent (25%) of Executive's Base Salary (the "**Bonus Target**"), with the annual amount of such Bonus to be determined in the sole discretion of the Company's Board of Directors (the "**Board**") or by its Compensation Committee (under authority delegated by the Board), based upon a review of both Executive's individual performance and the Company's performance (both of which may include, but are not limited to, achievement of certain milestones or performance objectives, if any, established by the Board or the Compensation Committee (the "**Bonus Plan**"). The Board or the Compensation Committee, in their sole discretion, shall determine the extent to which Executive has achieved any performance targets or other terms and conditions applicable to the Bonus; the amount of the Bonus (if any); and whether and to what extent a Bonus may be paid with respect to any year during which Executive's employment terminates, subject to the terms and conditions of this Agreement. Bonuses are not earned until they are approved in writing by the Board or Compensation Committee. Any Bonuses earned shall be paid subject to applicable employment taxes, withholding and deductions. Except as otherwise expressly provided in this Agreement or in the Bonus Plan, Executive must remain continuously employed with the Company through the date a Bonus is approved in order to be eligible to receive such Bonus.

6. **STOCK OPTIONS.** Executive currently holds certain stock options and/or Restricted Stock Units (collectively the "**Equity Awards**"), subject to the vesting schedule and all other terms, conditions and limitations applicable to such stock, stock options and/or Restricted Stock Units as set forth in the Company's 2009 Equity Incentive Plan as it may be amended from time to time (the "**Equity Plan**") and in Stock Award Agreements (as defined in the Equity Plan) approved by the Board and entered into by Executive. Executive may receive additional equity grants from time to time, in the sole discretion of the Board or a designated committee thereof.

7. **OTHER BENEFITS.** While employed by the Company pursuant to this Agreement, Executive shall be entitled to the following benefits:

(a) **Executive Benefits.** The Executive shall be entitled to all benefits to which other executive officers of the Company are entitled, on the same terms and conditions in effect from time to time, including, without limitation, participation in pension and profit sharing plans, the Company's 401(k) plan, group insurance policies and plans (including medical, health, vision, and disability insurance policies and plans, and the like) which may be maintained by the Company for the benefit of its executives. The Company reserves the right to alter, discontinue and/or amend its benefit plans and programs from time to time in its sole discretion.

(b) **Expense Reimbursement.** The Executive shall receive, upon presentation of proper receipts and vouchers, reimbursement for direct and reasonable out-of-pocket expenses incurred in connection with the performance of Executive's duties hereunder, in accordance with the Company's expense reimbursement policies and procedures in effect from time to time.

(c) **Paid Time Off.** Executive will accrue twenty-eight (28) days of paid time off ("**PTO**") each full year, accrued in bi-weekly increments (on the Company's regular payroll schedule), subject to Executive's continuing service. Unused PTO will carry over from year-to-year; provided, however, that Executive shall not be entitled to "carry over" more than twenty-eight (28) days of accrued unused PTO from year-to-year (the "**PTO Carryover Cap**"). Upon termination of employment for any reason, Executive shall be paid out (at Executive's last rate of pay) for Executive's then accrued unused PTO amount, up to a maximum of Executive's PTO Carryover Cap, less applicable payroll deductions and withholdings. Except as provided herein, Executive's PTO rights shall be governed by the Company's PTO policy and applicable law, as in effect from time to time; provided, however, that in the event of a conflict between this Agreement and the Company's governing PTO policy, this Agreement will control.

8. CONFIDENTIAL INFORMATION, RIGHTS AND DUTIES.

(a) **Proprietary Information.** Executive acknowledges and agrees to abide by all duties and obligations under his Proprietary Information, Inventions, Non-Competition and Non-Solicitation Agreement with the Company (the "**Proprietary Information Agreement**"), attached hereto as **Exhibit A**.

(b) **Exclusive Property.** Executive agrees that all Company-related business procured by the Executive, and all Company-related business opportunities and plans made known to Executive while employed by the Company, are and shall remain the permanent and exclusive property of the Company.

9. TERMINATION OF EMPLOYMENT.

(a) **At-Will Status.** The Company and Executive understand and agree that this employment relationship is at-will. Accordingly, there are no promises or representations concerning the duration of Executive's employment relationship, and it may be terminated by either Executive or the Company at any time, with or without Cause or Good Reason (as defined herein), and with or without advance notice. Executive's at-will status cannot be altered except in an express written agreement signed by Executive and the Company with the specific approval of the Company's Board.

(b) **Termination Due to Death or Disability.** Subject to applicable state or federal law, Executive's employment with the Company will automatically terminate upon Executive's death or a physical or mental disability or condition which renders Executive unable to perform the essential functions of Executive's position (with or without accommodation) for more than six (6) months in any twelve (12) month period, or for more than four (4) consecutive months. This provision shall be interpreted and construed in accordance with the federal Americans with Disabilities Act of 1990 and all other applicable laws.

(c) **Resignation by Executive.** Executive may resign from the Company with or without Good Reason. The Company requests that Executive provide at least three (3) weeks advance written notice of a termination without Good Reason to allow for an orderly transition. The Company may accelerate the date Executive's resignation is to become effective, in its sole discretion. In the event the Company accelerates the resignation effective date, the Executive will be paid Base Salary severance through the originally tendered resignation date, provided that in no such event will Executive be entitled to receive more than three (3) months of Base Salary severance beyond the accelerated resignation date.

(d) **Definition of Cause.** For purposes of this Agreement, "**Cause**" for the Company to terminate Executive shall mean: (i) Executive's incompetence or failure or refusal to perform satisfactorily any duties reasonably required of Executive by the Company (other than by reason of Disability), which failure continues for fifteen (15) days after Executive receives specific written notice to cure; (ii) Executive's conviction or plea of guilty or *nolo contendere* to any felony or to any other crime involving dishonesty or moral turpitude; (iii) any act or omission which constitutes a material breach of this Agreement, the Proprietary Information Agreement, the Company's policies, or Executive's fiduciary duty to the Company; (iv) any act or omission in connection with Executive's employment with the Company, which involves material personal dishonesty by Executive or demonstrates a willful or continuing disregard for the best interests of the Company; or (v) Executive's engaging in dishonorable or disruptive behavior, practices or acts which cause, or could be reasonably expected to cause, material harm or bring disrepute to the Company.

(e) **Definition of Good Reason.** For purposes of this Agreement, "**Good Reason**" means the occurrence of any of the following without Executive's prior written consent: (i) a reduction in Executive's Base Salary or benefits that materially diminishes the aggregate value of Executive's compensation and benefits, unless a reduction is made in connection with an across-the-board reduction of all executives' base salaries and/or employee benefits by a percentage less than 20% and at least equal to the percentage by which Executive's Base Salary or employee benefits are reduced; (ii) in the event of such an across-the-board reduction and a subsequent across-the-board restoration of all or any portion of the reduced Base Salary or benefits, then a

failure to restore Executive's Base Salary or benefits in at least a proportional manner; (iii) a material reduction of Executive's Bonus Target level; (iv) a material reduction in Executive's duties, authority or responsibilities taken as a whole; or (v) a relocation of Executive's principal place of employment that would result in an increase in Executive's one-way commute by more than 30 miles. Notwithstanding the foregoing, "Good Reason" for Executive to resign shall not exist unless: (x) Executive provides the Company with specific written notice of the existence of the condition giving rise to Good Reason within ninety (90) days after its initial occurrence; (y) the Company fails to remedy such condition within thirty (30) days after its receipt of such written notice; and (z) Executive resigns within sixty (60) days after the cure period has lapsed.

(f) Final Pay upon Termination for Any Reason. Except as otherwise provided by this Agreement and/or required by law, upon termination of Executive's employment for any reason, the Company's obligation to make payments hereunder shall cease, except that the Company shall pay all amounts due and payable for Executive's services through Executive's last day of employment (the "Separation Date"), including all accrued unpaid Base Salary and Bonus compensation earned through the Separation Date, any benefits accrued prior to the Separation Date, all accrued but unused vacation as of the Separation Date, and any reimbursable business expenses incurred but not reimbursed as of the Separation Date.

(g) Severance Benefits upon a Covered Termination (No Change in Control).

(i) **Severance Benefits.** If Executive's employment is terminated by the Company without Cause, or due to Executive's death or Disability, or as a result of Executive's resignation for Good Reason (each a "Covered Termination"), Executive (or Executive's estate, as applicable) shall be eligible to receive the following severance benefits: (1) payment of an amount equal to twelve (12) months of Executive's Base Salary in effect immediately prior to the Separation Date, less applicable payroll tax withholdings and deductions (the "Severance"); and (2) twelve (12) months of accelerated vesting of Executive's Equity Awards (so that Executive becomes vested in the portion of the Equity Awards that would have become vested if Executive remained employed for 365 days after the Separation Date). (For avoidance of doubt, to the extent that any performance criteria under any Equity Award has not been satisfied as of the Separation Date, such Equity Awards shall terminate as of the Separation Date and shall not be subject to the foregoing accelerated vesting benefit.) Except for the foregoing accelerated vesting benefit, all existing terms and conditions applicable to the Equity Awards shall remain in full force and effect. In addition, provided Executive timely elects to continue Executive's group health insurance coverage after the Separation Date pursuant to the federal COBRA law or, if applicable, state insurance laws (collectively, "COBRA"), and the terms of the governing health insurance policies, the Company will reimburse the monthly COBRA health insurance premiums (the "COBRA Payments") Executive pays to continue Executive's health insurance coverage (including dependent coverage) for twelve (12) months after the Separation Date or until such earlier date as Executive either becomes eligible for group health insurance coverage through a new employer or ceases to be eligible for COBRA coverage (the "COBRA Payment Period"). Executive must submit to the Company appropriate documentation of the foregoing health insurance payments, within sixty (60) days of making such payments, in order to be reimbursed. Notwithstanding the foregoing, if the Company determines, in its sole discretion, that it cannot pay the COBRA Payments without a substantial risk of violating applicable law (including, without limitation, Section 2716 of the Public Health Service Act), at the end of each remaining month of the COBRA Payment Period, the Company shall pay Executive directly a taxable monthly amount which, after taxes, equals the COBRA Payment amount the Company would have otherwise paid to Executive (assuming a 35% tax rate). Executive agrees to promptly notify the Company in writing if Executive becomes eligible for group health insurance coverage through a new employer before the end of the specified reimbursement period. For sake of reference, all severance benefits provided in entire subsection 9(g)(i) shall be referred to collectively as the "Severance Benefits."

(ii) **Preconditions.** As a precondition to receiving any Severance Benefits, Executive must (1) remain in compliance with all continuing obligations Executive owes to the Company, including those set forth under Executive's Proprietary Information Agreement, and (2) within twenty-one (21) days after the Separation Date, Executive (or Executive's estate, as applicable) must sign and return to the Company, a separation agreement and release of claims in substantially the form attached hereto as **Exhibit B** (the "Release") and allow the Release to become fully-effective and non-revocable by its terms. The Severance will be paid in the form of continuing salary

installment payments, paid on the Company's ordinary payroll schedule starting immediately after the Separation Date; *provided, however*, that any payments that would be paid prior to the date the Release becomes fully effective and non-revocable (the "**Effective Date**"), shall be delayed and paid in full on the first payroll date after the Effective Date. (For avoidance of doubt, no Severance Benefits will be paid under any circumstances if the foregoing preconditions are not satisfied, or if Executive's employment ends because of a resignation without Good Reason or a termination for Cause.)

10. CHANGE IN CONTROL BENEFITS.

(a) **Change in Control Termination.** If Executive's employment with the Company is terminated by the Company without Cause (but not due to Executive's death or Disability) or Executive resigns with thirty (30) day notice and such termination or resignation occurs (A) within one (1) month before, or within thirteen (13) months after a Change in Control (defined below) or (B) on or before the thirteen month anniversary of the "Closing" as defined in the Agreement and Plan of Merger and Reorganization between NewLink Genetics Corporation, Cyclone Merger Sub, Inc. and Lumos Pharma, Inc. (the "Lumos Transaction") (each a "**CIC Termination**"), Executive shall be eligible to receive the following enhanced severance package (in lieu of the Severance Benefits described above): (i) payment of twelve (12) months of Executive's Base Salary as in effect immediately prior to the Separation Date, less applicable withholdings and deductions; (ii) payment of a bonus in an amount equal to the Bonus Target as described in Section 5 above, less applicable withholdings and deductions (the payments under clauses (i) and (ii) referred to as the "**CIC Cash Severance**"); (iii) accelerated vesting of Executive's Equity Awards so that Executive becomes one hundred percent (100%) vested in all such Equity Awards; and (iv) a twenty-four (24) month extension of the exercise period applicable to the Equity Awards so that Executive has 730 days after the Separation Date to exercise any vested Equity Awards (including, for avoidance of doubt, any portion of such awards that became vested as a result of the foregoing accelerated vesting benefit). As set forth above, this extended exercise period benefit may convert any stock options that were incentive stock options into non-qualified stock options, and Executive is advised to consult with an independent tax advisor for additional guidance. Except for the foregoing accelerated vesting benefit, all existing terms and conditions applicable to the Equity Awards shall remain in full force and effect. In addition, provided Executive timely elects to continue Executive's group health insurance coverage after the Separation Date pursuant to COBRA, and the terms of the governing health insurance policies, the Company will reimburse all monthly COBRA health insurance premiums the Executive pays to continue Executive's health insurance coverage (including dependent coverage) for twelve (12) months after the Separation Date or until such earlier date as Executive either becomes eligible for group health insurance coverage through a new employer or Executive ceases to be eligible for COBRA coverage. These CIC severance benefits shall be paid subject to the same preconditions and on the same terms and conditions applicable to the Severance Benefits; provided, however, that the CIC Cash Severance shall be paid in a lump sum within ten (10) business days of the Effective Date of the Release required under Section 9(g)(ii) (Preconditions).

(b) **Definition of Change in Control.** For purposes of this Agreement, "**Change in Control**" has the definition set forth in the Equity Plan. For the avoidance of doubt, the Lumos Transaction shall be deemed a Change in Control for purposes of this Agreement.

11. **CODE SECTION 409A COMPLIANCE.** Notwithstanding anything set forth in this Agreement to the contrary, any payments and benefits provided pursuant to this Agreement which constitute "deferred compensation" within the meaning of the Treasury Regulations issued pursuant to Section 409A shall not commence until Executive has incurred a "separation from service" (as such term is defined in the Treasury Regulation Section 1.409A-1(h) ("**Separation From Service**"), unless the Company reasonably determines that such amounts may be provided to Executive without causing Executive to incur the additional 20% tax under Section 409A.

For the avoidance of doubt, it is intended that the payments and benefits set forth in this Agreement satisfy, to the greatest extent possible, the exemptions from the application of Section 409A provided under Treasury Regulation Sections 1.409A-1(b)(4), 1.409A-1(b)(5) and 1.409A-1(b)(9) and this Agreement will be construed to the greatest extent possible as consistent with those provisions. To the extent not so exempt, this Agreement (and any definitions

hereunder) will be construed in a manner that complies with Section 409A and incorporates by reference all required definitions and payment terms. For purposes of Section 409A (including, without limitation, for purposes of Treasury Regulation Section 1.409A-2(b)(2)(iii)), Executive's right to receive any installment payments under this Agreement (whether severance payments, reimbursements or otherwise) shall be treated as a right to receive a series of separate payments and, accordingly, each installment payment hereunder shall at all times be considered a separate and distinct payment. Notwithstanding any provision to the contrary in this Agreement, if the Company (or, if applicable, the successor entity thereto) determines that any payments upon Executive's Separation From Service set forth herein and/or under any other agreement with the Company constitute "deferred compensation" under Section 409A and Executive is, on Executive's Separation From Service, a "specified employee" of the Company or any successor entity thereto, as such term is defined in Section 409A(a)(2)(B)(i) of the Code, then, solely, to the extent necessary to avoid the incurrence of the adverse personal tax consequences under Section 409A, the timing of the payments upon Executive's Separation From Service shall be delayed until the earlier to occur of: (a) the date that is six months and one day after Executive's Separation From Service or (b) the date of Executive's death (such applicable date, the "Specified Employee Initial Payment Date"). On the Specified Employee Initial Payment Date, the Company (or the successor entity thereto, as applicable) shall (A) pay to Executive a lump sum amount equal to the sum of the payments upon Executive's Separation From Service that Executive would otherwise have received through the Specified Employee Initial Payment Date if the commencement of the payment of the severance benefits had not been so delayed pursuant to this section and (B) commence paying the balance of the severance benefits in accordance with the applicable payment schedules set forth in this Agreement.

None of the severance benefits under this Agreement will commence or otherwise be delivered prior to the effective date of the Release. If the period of time Executive has to execute the Release "crosses over" two (2) calendar years, the Release will be deemed to have been executed on the twenty-first (21st) day after the Separation Date. Except to the minimum extent that payments must be delayed because Executive is a "specified employee" (as described above) or until the effectiveness of the Release, all amounts will be paid as soon as practicable in accordance with the Company's normal payroll practices and no interest will be due on any amounts so deferred.

12. BETTER AFTER-TAX PROVISION. If any payment or benefit that Executive will or may receive from the Company or otherwise (a "280G Payment") would (i) constitute a "parachute payment" within the meaning of Section 280G of the Code, and (ii) but for this sentence, be subject to the excise tax imposed by Section 4999 of the Code (the "Excise Tax"), then any such 280G Payment will be equal to the Reduced Amount. The "Reduced Amount" will be either (x) the largest portion of the 280G Payment that would result in no portion of the 280G Payment (after reduction) being subject to the Excise Tax or (y) the largest portion, up to and including the total, of the 280G Payment, whichever amount (*i.e.*, the amount determined by clause (x) or by clause (y)), after taking into account all applicable federal, state and local employment taxes, income taxes, and the Excise Tax (all computed at the highest applicable marginal rate), results in Executive's receipt, on an after-tax basis, of the greater economic benefit notwithstanding that all or some portion of the 280G Payment may be subject to the Excise Tax. If a reduction in a 280G Payment is required pursuant to the preceding sentence and the Reduced Amount is determined pursuant to clause (x) of the preceding sentence, the reduction will occur in the manner (the "Reduction Method") that results in the greatest economic benefit for Executive. If more than one method of reduction will result in the same economic benefit, the items so reduced will be reduced pro rata (the "Pro Rata Reduction Method").

Notwithstanding the foregoing, if the Reduction Method or the Pro Rata Reduction Method would result in any portion of the 280G Payment being subject to taxes pursuant to Section 409A of the Code that would not otherwise be subject to taxes pursuant to Section 409A of the Code, then the Reduction Method and/or the Pro Rata Reduction Method, as the case may be, will be modified so as to avoid the imposition of taxes pursuant to Section 409A of the Code as follows: (A) as a first priority, the modification will preserve, to the greatest extent possible, the greatest economic benefit for Executive as determined on an after-tax basis; (B) as a second priority, 280G Payments that are contingent on future events (*e.g.*, being terminated without Cause), will be reduced (or eliminated) before 280G Payments that are not contingent on future events; and (C) as a third priority, 280G Payments that are "deferred compensation" within the meaning of Section 409A of the Code will be reduced (or eliminated) before 280G Payments that are not "deferred compensation" within the meaning of Section 409A of the Code.

If Section 280G of the Code is not applicable by law to Executive, the Company will determine whether any similar law in Executive's jurisdiction applies and should be taken into account.

The independent professional firm engaged by the Company for general tax audit purposes as of the day prior to the effective date of the Change in Control will make all determinations required to be made under this Section. If the firm so engaged by the Company is serving as accountant or auditor for the individual, entity or group effecting the Change in Control, the Company will appoint a nationally recognized independent professional firm to make the determinations required hereunder. The Company will bear all expenses with respect to the determinations by such firm required to be made hereunder. The Company will use commercially reasonable efforts to cause the firm engaged to make the determinations hereunder to provide its calculations, together with detailed supporting documentation, to the Company and Executive within thirty (30) calendar days after the date on which Executive's right to a 280G Payment becomes reasonably likely to occur (if requested at that time by the Company or Executive) or such other time as requested by the Company or Executive.

If Executive receives a 280G Payment for which the Reduced Amount was determined pursuant to clause (x) of the first paragraph of this Section and the Internal Revenue Service determines thereafter that some portion of the 280G Payment is subject to the Excise Tax, Executive will promptly return to the Company a sufficient amount of the 280G Payment (after reduction pursuant to clause (x) of the first paragraph of this Section) so that no portion of the remaining 280G Payment is subject to the Excise Tax. For the avoidance of doubt, if the Reduced Amount was determined pursuant to clause (y) of the first paragraph of this Section, Executive will have no obligation to return any portion of the 280G Payment pursuant to the preceding sentence.

13. MISCELLANEOUS.

(a) **Taxes.** Executive shall be responsible for the payment of any taxes due on any and all compensation, stock option, or benefit provided by the Company pursuant to this Agreement which are not withheld by the Company. Executive agrees to indemnify and hold harmless the Company from any and all claims or penalties asserted against the Company arising from Executive's failure to pay taxes due on any compensation, stock option, or benefit provided by the Company pursuant to this Agreement. Executive expressly acknowledges that the Company has not made any representation about the tax consequences of any consideration provided by the Company to Executive pursuant to this Agreement.

(b) **Modification/Waiver.** This Agreement may not be amended, modified, superseded, canceled, renewed or expanded, or any terms or covenants hereof waived, except by a writing executed by each of the Parties or, in the case of a waiver, by the Party waiving compliance. Failure of any Party at any time to require performance of any provision hereof shall in no manner affect his, her or its right at a later time to enforce such provision. No waiver by a Party of a breach of this Agreement shall be deemed to be or construed as a waiver of any other breach of any term or condition contained in the Agreement.

(c) **Successors and Assigns.** This Agreement may be assigned by the Company to an affiliated entity or to any successor or assignee of the Company with or without Executive's consent. This Agreement shall not be assignable by Executive.

(d) **Notices.** All notices to be given hereunder shall be in writing and shall be deemed to have been duly given on: the date personally or hand delivered; one (1) day after being sent by internationally recognized overnight delivery courier; and three (3) days after being sent by certified mail, return receipt requested. Notices mailed to Executive shall be sent to Executive's last home address as reflected in the Company's personnel records. Executive promptly shall notify Company of any change in Executive's address. Notices to be issued to the Company shall be directed to the Company's CEO and shall be mailed to the Company's headquarters.

(e) **Dispute Resolution.** To aid in the rapid and economical resolution of any disputes that may arise in the course of Executive's employment relationship, the Parties agree that any and all disputes, claims, or demands arising from or relating to the terms of this Agreement (including but not limited to the Proprietary Information Agreement incorporated by reference herein), Executive's employment relationship with the Company, or the termination of that relationship (including statutory claims), shall be resolved, to the fullest extent permitted by law, by final, binding and confidential arbitration in Austin, Texas conducted before a single neutral arbitrator by JAMS, Inc. ("JAMS") or its successor, under the then applicable JAMS Arbitration Rules and Procedures for Employment

Disputes (available at <http://www.jamsadr.com/rules-employment-arbitration/>) and subject to JAMS' Policy on Employment Arbitration Minimum Standards of Procedural Fairness. **The Parties acknowledge that by agreeing to this arbitration procedure, they waive the right to resolve any such dispute, claim or demand through a trial by jury or judge or by administrative proceeding.** Executive will have the right to be represented by legal counsel at any arbitration proceeding, at Executive's expense. The arbitrator shall: (a) have authority to compel adequate discovery for the resolution of the dispute and to award such relief as would otherwise be available under applicable law in a court proceeding; (b) issue a written statement signed by the arbitrator regarding the disposition of each claim and the relief, if any, awarded as to each claim, the reasons for the award, and the arbitrator's essential findings and conclusions on which the award is based; and (c) have authority to, in the arbitrator's discretion, award recovery of attorneys' fees and costs to the prevailing party. The Company shall pay all JAMS' arbitration fees. Nothing in this Agreement is intended to prevent either Party from obtaining injunctive relief in a court of applicable jurisdiction to prevent irreparable harm pending the conclusion of any arbitration; or from enforcing any arbitration award in a court of applicable jurisdiction.

(f) **Entire Agreement.** This Agreement, together with the Exhibits, sets forth the complete and exclusive agreement and understanding of the Parties with regard to the subject matter hereof, and supersedes any and all prior or contemporaneous agreements, promises, representations, or communications, written or oral, pertaining to the subject matter hereof (including, without limitation, the Executive's July 26, 2018 Employment Agreement with the Company). If any provision of this Agreement is determined to be invalid or unenforceable, in whole or in part, this determination will not affect any other provision of this Agreement, and the invalid or unenforceable provision shall be modified to render it valid and enforceable consistent with the intent of the parties insofar as possible under applicable law. For purposes of construing this Agreement, any ambiguities shall not be construed against any party as the drafter. This Agreement may be executed in counterparts, which shall be deemed to be part of one original, and facsimile signatures, signatures transmitted by .PDF, as well as electronic signatures, shall be equivalent to original signatures. The validity, interpretation, construction and performance of this Agreement shall be governed by the laws of the State of Iowa, without regard to conflict of laws principles.

IN WITNESS WHEREOF, the Parties have each duly executed this Agreement as of the date written above to indicate their understanding and acceptance of all of the above-stated terms and conditions.

NEWLINK GENETICS CORPORATION

By: /s/Brad Powers
Its: General Counsel

EXECUTIVE

 /s/Lori Lawley

EXHIBIT A

EMPLOYEE PROPRIETARY INFORMATION AGREEMENT

EMPLOYEE PROPRIETARY INFORMATION AND INVENTIONS AGREEMENT

This Employee Proprietary Information, Inventions, Non-competition, and Non-solicitation Agreement

(this "Agreement") is made in consideration for my employment or continued employment by NewLink Genetics Corporation or any of its subsidiaries (the "Company"), and the compensation now and hereafter paid to me. I hereby agree as follows:

1. **NONDISCLOSURE.**

1.1 Recognition of Company's Rights; Nondisclosure. At all times during my employment and thereafter, I will hold in strictest confidence and will not disclose, use, lecture upon or publish any of the Company's Proprietary Information (defined below), except as such disclosure, use or publication may be required in connection with my work for the Company, or unless an officer of the Company expressly authorizes such in writing. I will obtain Company's written approval before publishing or submitting for publication any material (written, verbal, or otherwise) that relates to my work at Company and/or incorporates any Proprietary Information. I hereby assign to the Company any rights I may have or acquire in such Proprietary Information and recognize that all Proprietary Information shall be the sole property of the Company and its assigns.

1.2 Proprietary Information. The term "**Proprietary Information**" shall mean any and all confidential and/or proprietary knowledge, data or information of the Company. By way of illustration but not limitation, "Proprietary Information" includes (a) tangible and intangible information relating to antibodies and other biological materials, cell lines, samples of assay components, media and/or cell lines and procedures and formulations for producing any such assay components, media and/or cell lines, formulations, products, processes, know-how, designs, formulas, methods, developmental or experimental work, clinical data, improvements, discoveries, plans for research, new products, marketing and selling, business plans, budgets and unpublished financial statements, licenses, prices and costs, suppliers and customers, and information regarding the skills and compensation of other employees of the Company; (b) trade secrets, inventions, mask works, ideas, processes, formulas, source and object codes, data, programs, other works of authorship, know-how, improvements, discoveries, developments, designs and techniques (hereinafter collectively referred to as "Inventions"); (c) information regarding plans for research, development, new products, marketing and selling, business plans, budgets and unpublished financial statements, licenses, prices and costs, suppliers and customers; and (d) information regarding the skills and compensation of other employees of the Company. Notwithstanding the foregoing, it is understood that, at all such times, I am free to use information which is generally known in the trade or industry, which is not gained as result of a breach of this Agreement, and my own, skill, knowledge, know-how and experience to whatever extent and in whichever way I wish.

1.3 Third Party Information. I understand, in addition, that the Company has received and in the future will receive from third parties confidential or proprietary information ("Third Party Information") subject to a duty on the Company's part to maintain the confidentiality of such information and to use it only for certain limited purposes. During the term of my employment and thereafter, I will hold Third Party Information in the strictest confidence and will not disclose to anyone (other than Company personnel who need to know such information in connection with their work for the Company) or use, except in connection with my work for the Company, Third Party Information unless expressly authorized by an officer of the Company in writing.

1.4 No Improper Use of Information of Prior Employers and Others. During my employment by the Company I will not improperly use or disclose any confidential information or trade secrets, if any, of any third party, including but not limited to any former employer or any other person or entity to whom I have an obligation of confidentiality, and I will not bring onto the premises of the Company any unpublished documents or any property belonging to any third party, including but not limited to any former employer or any other person or entity to whom I have an obligation of confidentiality unless consented to in writing by that third party. I will use in the performance of my duties only information which is generally known and used by persons with training and experience comparable to my own, which is common knowledge in the industry or otherwise legally in the public domain, or which is otherwise provided, obtained, or developed by or for the Company.

2. ASSIGNMENT OF INVENTIONS.

2.1 Proprietary Rights. The term “**Proprietary Rights**” shall mean all trade secret, patent, copyright, mask work and other intellectual property rights throughout the world.

2.2 Prior Inventions. Inventions, if any, patented or unpatented, which I made prior to the commencement of my employment with the Company are excluded from the scope of this Agreement. To preclude any possible uncertainty, I have set forth on *Exhibit A* (Previous Inventions) attached hereto a complete list of all Inventions that I have, alone or jointly with others, conceived, developed or reduced to practice or caused to be conceived, developed or reduced to practice prior to the commencement of my employment with the Company, that I consider to be my property or the property of third parties and that I wish to have excluded from the scope of this Agreement (collectively referred to as “**Prior Inventions**”). If disclosure of any such Prior Invention would cause me to violate any prior confidentiality agreement, I understand that I am not to list such Prior Inventions in Exhibit A but am only to disclose a cursory name for each such invention, a listing of the party (ies) to whom it belongs and the fact that full disclosure as to such inventions has not been made for that reason. A space is provided on Exhibit A for such purpose. If no such disclosure is attached, I represent that there are no Prior Inventions. If, in the course of my employment with the Company, I incorporate a Prior Invention into a Company product, process or machine, the Company is hereby granted and shall have a nonexclusive, royalty-free, irrevocable, perpetual, worldwide license (with rights to sublicense through multiple tiers of sublicensees) to make, have made, modify, use and sell such Prior Invention. Notwithstanding the foregoing, I agree that I will not incorporate, or permit to be incorporated, Prior Inventions in any Company Inventions without the Company’s prior written consent.

2.3 Assignment of Inventions. Subject to Sections 2.4, and 2.6, I hereby assign and agree to assign in the future (when any such Inventions or Proprietary Rights are first reduced to practice or first fixed in a tangible medium, as applicable) to the Company all my right, title and interest in and to any and all Inventions (and all Proprietary Rights with respect thereto) whether or not patentable or registrable under copyright or similar statutes, made or conceived or reduced to practice or learned by me, either alone or jointly with others, during the period of my employment with the Company. Inventions assigned to the Company, or to a third party as directed by the Company pursuant to this Section 2, are hereinafter referred to as “Company Inventions.”

2.4 Nonassignable Inventions. I recognize that, in the event of a specifically applicable state law, regulation, rule, or public policy (“Specific Inventions Law”), this Agreement will not be deemed to require assignment of any invention which qualifies fully for protection under a Specific Inventions Law by virtue of the fact that any such invention was, for example, developed entirely on my own time without using the Company’s equipment, supplies, facilities, or trade secrets and neither related to the Company’s actual or demonstrably anticipated business, research or development, nor resulted from work performed by me for the Company. In the absence of a Specific Inventions Law, the preceding sentence will not apply.

2.5 Obligation to Keep Company Informed. During the period of my employment with the Company, I will promptly disclose to the Company fully and in writing all Inventions authored, conceived or reduced to practice by me, either alone or jointly with others; and all patent applications filed by me or on my behalf. At the time of each such disclosure, I will advise the Company in writing of any Inventions that I believe fully qualify for protection under the provisions of a Specific Inventions Law; and I will at that time provide to the Company in writing all evidence necessary to substantiate that belief. The Company will keep in confidence and will not use for any purpose or disclose to third parties without my consent any confidential information disclosed in writing to the Company pursuant to this Agreement relating to Inventions that qualify fully for protection under a Specific Inventions Law. I will preserve the confidentiality of any Invention that does not fully qualify for protection under a Specific Inventions Law.

2.6 Government or Third Party. I also agree to assign all my right, title and interest in and to any particular Company Invention to a third party, including without limitation the United States, as directed by the Company.

2.7 Works for Hire. I acknowledge that all original works of authorship which are made by me (solely or jointly with others) within the scope of my employment at the Company and which are protectable by copyright are "works made for hire," pursuant to United States Copyright Act (17 U.S.C., Section 101).

2.8 Enforcement of Proprietary Rights.

(i) **Obligation to Assist.** I will assist the Company in every proper way to obtain, and from time to time enforce, United States and foreign Proprietary Rights relating to Company Inventions in any and all countries. To that end I will execute, verify and deliver such documents and perform such other acts (including appearances as a witness) as the Company may reasonably request for use in applying for, obtaining, perfecting, evidencing, sustaining and enforcing such Proprietary Rights and the assignment thereof. In addition, I will execute, verify and deliver assignments of such Proprietary Rights to the Company or its designee. My obligation to assist the Company with respect to Proprietary Rights relating to such Company Inventions in any and all countries shall continue beyond the termination of my employment, but the Company shall compensate me at a reasonable rate after my termination for time actually spent by me at the Company's request on such assistance.

(ii) **Appointment of Attorney in Fact.** In the event the Company is unable for any reason, after reasonable effort, to secure my signature on any document needed in connection with the actions specified in the preceding paragraph, I hereby irrevocably designate and appoint the Company and its duly authorized officers and agents as my agent and attorney in fact, which appointment is coupled with an interest, to act for and in my behalf to execute, verify and file any such documents and to do all other lawfully permitted acts to further the purposes of the preceding paragraph with the same legal force and effect as if executed by me. I hereby waive and quitclaim to the Company any and all claims, of any nature whatsoever, which I now or may hereafter have for infringement of any Proprietary Rights assigned hereunder to the Company.

3. **NO CONFLICTS, NON-SOLICITATION, AND NON-INTERFERENCE.** I acknowledge that during my employment I will have access to and knowledge of Proprietary Information. To protect the Company's Proprietary Information, I agree that during the period of my employment by the Company I will not, without the Company's express written consent, engage in any other employment or business activity directly related to the business in which the Company is now involved or becomes involved, nor will I engage in any other activities which conflict with my obligations to the Company or the interests of the Company. For the period of my employment by the Company and continuing until one year after my last day of employment with the Company, I will not: (a) directly or indirectly induce any employee of the Company to terminate or reduce his or her relationship with the Company; (b) solicit the business of any Client or Customer of the Company (other than on behalf of the Company) for any competitive purpose; or (c) induce any supplier, vendor, consultant or independent contractor of the Company to terminate or reduce his, her or its relationship with the Company. I agree that for purposes of this Agreement, a "Client or Customer" is any person or entity with whom or which, at any time during the two year period prior to my last day of employment with the Company, (i) I had direct dealings; (ii) an individual whom I supervised had direct dealings; or (iii) about whom or which I obtained confidential information. If any restriction set forth in this Section is found by any court of competent jurisdiction to be unenforceable because it extends for too long a period of time or over too great a range of activities or in too broad a geographic area, it shall be interpreted to extend only over the maximum period of time, range of activities or geographic area as to which it may be enforceable.

4. **COVENANT NOT TO COMPETE.** I acknowledge that during my employment I will have access to and knowledge of Proprietary Information. To protect the Company's Proprietary Information, I agree that during my employment with the Company, whether full-time or part-time, and for a period of one year after my last day of employment with the Company, I will not directly or indirectly engage in (whether as an employee, consultant, proprietor, partner, director or otherwise), or have any ownership interest in, or participate in the financing, operation, management or control of, any person, entity, corporation or business that engages in a "Restricted Business" in a "Restricted Territory" (as defined below). It is agreed that ownership of (i) no more

than one percent (1%) of the outstanding voting stock of a publicly traded corporation, or (ii) any stock I presently own shall not constitute a violation of this provision.

4.1 Reasonable. I agree and acknowledge that the time limitation on the restrictions in this paragraph, combined with the geographic scope, is reasonable. I also acknowledge and agree that this paragraph is reasonably necessary for the protection of the Company's Proprietary Information as defined in paragraph 1.2 herein, that through my employment I shall receive adequate consideration for any loss of opportunity associated with the provisions herein, and that these provisions provide a reasonable way of protecting the Company's business value, some of which will be imparted to me in the ordinary course of my employment with the Company. If any restriction set forth in this paragraph 4 is found by any court of competent jurisdiction to be unenforceable because it extends for too long a period of time or over too great a range of activities or in too broad a geographic area, it shall be interpreted to extend only over the maximum period of time, range of activities or geographic area as to which it may be enforceable.

4.2 As used herein, the terms:

(i) **"Restricted Business"** shall mean a business that is engaged in or is preparing to

engage in any of the areas that the Company is actively pursuing, including but not limited to research, development and/or commercialization of (1) one or more products for the treatment of cancer or infectious disease based upon the Company's HyperAcute technology platform; (2) one or more products for the treatment of cancer based upon IDO, TDO or PTEN inhibitors; (3) vaccines against the Ebola virus; or (4) any other area of research, development, or commercialization drug or biologic candidate potentially likely which is intended to address the same enzymatic target (such as, for example, IDO) as any drug or biologic candidate that (i) is the subject area of research, development, or commercialization in which the Company or any subsidiary is engaged pursuant to a program which is being materially funded by the Company, a strategic partner of the Company, and/or a grant to the Company and (ii) as to which I participated in or was familiar with the details of such the research, development or commercialization during their time of my employment with Company or regarding which I possess Confidential Information. For purposes of the preceding sentence, the determination of the scope of the Company's business activities shall be made as of the date of termination of my employment.

(ii) **"Restricted Territory"** shall mean any state, county, or locality in the United States in which the Company conducts business and any other country, city, state, jurisdiction, or territory in which the Company does business or plans to do business.

5. RECORDS. I agree to keep and maintain adequate and current records (in the form of notes, sketches, drawings and any other form that may be required by the Company) of all Proprietary Information developed by me and all Company Inventions made by me during the period of my employment at the Company, which records shall be available to and remain the sole property of the Company at all times.

6. NO CONFLICTING OBLIGATION. I represent that my performance of all the terms of this Agreement and as an employee of the Company does not and will not breach any agreement to keep in confidence information acquired by me in confidence or in trust prior to my employment by the Company, nor any other lawful obligation I have to any third party. I have not entered into, and I agree I will not enter into, any agreement either written or oral in conflict herewith.

7. RETURN OF COMPANY MATERIALS. When I leave the employ of the Company, or earlier if requested by the Company, I will deliver to the Company any and all drawings, notes, memoranda, specifications, devices, formulas, documents, materials, and tangible or intangible property of the Company together with all copies thereof, and any other material containing or embodying any Company Inventions, Third Party Information or Proprietary Information of the Company without retaining any reproductions or embodiments thereof in whole or in part and in any medium. By way of example, such items include but are not limited to: Company files, records, plans, forecasts, reports, studies, analyses, proposals, agreements, financial information, information regarding potential business development partners, research and development information, sales and marketing information, operational and personnel information, code, software, databases, computer-recorded information, and tangible property and equipment (including, but not limited

to, computers, data storage devices, facsimile machines, mobile telephones, servers, credit cards, entry cards, identification badges and keys). In addition, if I have used any personal computer, server, or e-mail system to receive, store, review, prepare or transmit any Company information, including but not limited to, Confidential Information, I agree to provide Company with a computer-useable copy of all such Confidential Information and then permanently delete and expunge such Confidential Information from those systems; and I agree to provide Company access to my system as reasonably requested to verify that the necessary copying and/or deletion is completed. I further agree that any property situated on the Company's premises and owned by the Company, including disks and other storage media, filing cabinets or other work areas, is subject to inspection by Company personnel at any time with or without notice.

8. **LEGAL AND EQUITABLE REMEDIES.** Because my services are personal and unique and because I may have access to and become acquainted with the Proprietary Information of the Company, the Company shall have the right to enforce this Agreement and any of its provisions by injunction, specific performance or other equitable relief, without bond and without prejudice to any other rights and remedies that the Company may have for a breach of this Agreement.

9. **NOTICES.** Any notices required or permitted hereunder shall be given to the appropriate party at the address specified below or at such other address as the party shall specify in writing. Such notice shall be deemed given upon personal delivery or express delivery service (e.g., FedEx) to the appropriate address; upon delivery via facsimile; or if sent by certified or registered mail, three days after the date of mailing.

10. **NOTIFICATION OF NEW EMPLOYER.** In the event that I leave the employ of the Company, I hereby consent to the notification of my new employer of my rights and obligations under this Agreement.

11. **GENERAL PROVISIONS.**

11.1 Governing Law; Consent to Personal Jurisdiction and Exclusive Forum. This Agreement will be governed by and construed according to the laws of the State of Iowa as such laws are applied to agreements entered into and to be performed entirely within Iowa between Iowa residents. I hereby expressly understand and consent that my employment is a transaction of business in the State of Iowa and constitutes the minimum contacts necessary to make me subject to the personal jurisdiction of the federal courts located in the State of Iowa, and the state courts located in the County of Story, Iowa, for any lawsuit filed against me by Company arising from or related to this Agreement. I agree and acknowledge that any controversy arising out of or relating to this Agreement or the breach thereof, or any claim or action to enforce this Agreement or portion thereof, or any controversy or claim requiring interpretation of this Agreement must be brought in a forum located within the State of Iowa. No such action may be brought in any forum outside the State of Iowa. Any action brought in contravention of this paragraph by one party is subject to dismissal at any time and at any stage of the proceedings by the other, and no action taken by the other in defending, counter claiming or appealing shall be construed as a waiver of this right to immediate dismissal. A party bringing an action in contravention of this paragraph shall be liable to the other party for the costs, expenses and attorney's fees incurred in successfully dismissing the action or successfully transferring the action to the federal courts located in the State of Iowa, or the state courts located in the County of Story, Iowa.

11.2 Severability. In case any one or more of the provisions contained in this Agreement shall, for any reason, be held to be invalid, illegal or unenforceable in any respect, such invalidity, illegality or unenforceability shall not affect the other provisions of this Agreement; this Agreement shall be construed as if such invalid, illegal or unenforceable provision had never been contained herein; and such provision shall be deemed modified and enforceable, insofar as possible consistent with its original intent. By way of example, if, moreover, any one or more of the provisions contained in this Agreement shall for any reason be held to be excessively broad as to duration, geographical scope, activity or subject, it shall be construed by limiting and reducing it, so as to be enforceable to the extent compatible with the applicable law as it shall then appear.

11.3 Successors and Assigns. This Agreement will be binding upon my heirs, executors, administrators and other legal representatives and will be for the benefit of the Company, its successors, and its assigns. My obligations under this Agreement are not assignable to any party.

11.4 Survival. The provisions of this Agreement shall survive the termination of my employment and the assignment of this Agreement by the Company to any successor in interest or other assignee.

11.5 Employment. I agree and understand that my employment is at-will which means I or the Company each have the right to terminate my employment, with or without advanced notice and with or without cause. I further agree and understand that nothing in this Agreement shall confer any right with respect to continuation of employment by the Company, nor shall it interfere in any way with my right or the Company's right to terminate my employment at any time, with or without cause.

11.6 Waiver. To be valid, any waiver by me or the Company of any breach of this Agreement or right hereunder shall be specifically stated in writing, and shall not be a waiver of any preceding or succeeding breach unless so specifically stated. No waiver of any right under this Agreement and applicable law shall be construed as a waiver of any other right. Neither party shall be required to give notice to enforce strict adherence to all terms of this Agreement.

11.7 Entire Agreement. The obligations pursuant to this Agreement shall apply to any time during which I was previously, or am in the future, employed or engaged as a consultant by the Company, if no other agreement governs the subject matter thereof. This Agreement is the final, complete and exclusive agreement of the parties with respect to the subject matter hereof and supersedes and merges all prior communications and representations with respect to such subject matter. No modification of or amendment to this Agreement will be effective unless in writing and signed by the party to be charged. Any subsequent changes in my duties, salary or compensation will not affect the validity or scope of this Agreement.

EMPLOYEE PROPRIETARY INFORMATION AND INVENTIONS AGREEMENT

ACKNOWLEDGEMENT FORM

I acknowledge that I have been given a copy of the Employee Proprietary Information and Inventions Agreement, that I have read it, and that I understand its terms and procedures. Furthermore, I agree to abide by it and understand that if NewLink determines my conduct warrants it, I may be subject to discipline for breaches hereof, up to and including the immediate termination of my employment.

Lori Lawley
Employee's Name (Please Print)

/s/Lori Lawley
Employee's Signature

9/24/2019
Date

EXHIBIT B**RELEASE [To be signed on or within twenty-one (21) days after the Separation Date]**

My employment with NewLink Genetics Corporation (the “**Company**”) ended in all capacities on _____ (the “**Separation Date**”). I hereby confirm that I have been paid all compensation owed to me by the Company for all hours worked; I have received all the leave and leave benefits and protections for which I was eligible, pursuant to the Company’s policies, applicable law, or otherwise; and I have not suffered any on-the-job injury or illness for which I have not already filed a workers’ compensation claim.

If I choose to enter into this Release and allow it to become effective by its terms, the Company will provide me with certain severance benefits pursuant to the terms of the Employment Agreement between me and the Company dated _____, 2019 (the “**Agreement**”). I understand that I am not entitled to such severance benefits unless I return this fully-executed Release to the Company within twenty-one (21) days after the Separation Date and allow this Release to become fully effective and non-revocable by its terms. (Capitalized terms used but not defined in this Release shall have the meaning ascribed to them in the Agreement.)

In exchange for the severance benefits to which I would not otherwise be entitled, I hereby generally and completely release the Company and its directors, officers, employees, shareholders, partners, agents, attorneys, predecessors, successors, parent and subsidiary entities, insurers, affiliates, and assigns (collectively, the “**Released Parties**”) from any and all claims, liabilities and obligations, both known and unknown, arising from or in any way related to events, acts, conduct, or omissions occurring prior to or at the time that I sign this Release, including but not limited to claims arising from or in any way related to my employment with the Company or the termination of that employment (collectively, the “**Released Claims**”). By way of example, the Released claims include, but are not limited to: (1) all claims related to my compensation or benefits from the Company, including salary, bonuses, commissions, vacation pay, expense reimbursements, severance pay, fringe benefits, stock, stock options, or any other ownership interests in the Company; (2) all claims for breach of contract, wrongful termination, and breach of the implied covenant of good faith and fair dealing; (3) all tort claims, including claims for fraud, defamation, emotional distress, and discharge in violation of public policy; and (4) all federal, state, and local statutory claims, including claims for discrimination, harassment, retaliation, attorneys’ fees, or other claims arising under the federal Civil Rights Act of 1964 (as amended), the federal Americans with Disabilities Act of 1990, the federal Age Discrimination in Employment Act of 1967 (as amended) (“**ADEA**”), and Iowa state law.

Notwithstanding the foregoing, the following are not included in the Released Claims (the “**Excluded Claims**”): (a) any claims for breach of the Agreement arising after the date on which I sign this Release; (2) claims for reimbursement of properly incurred business expenses prior to and through the Separation Date which are submitted to the Company for reimbursement within thirty (30) days after the Separation Date; (3) all rights I have in respect of the Equity Awards; (4) all claims for or rights to indemnification pursuant to the articles of incorporation and bylaws of the Company, any indemnification agreement to which I am a party, or under applicable law; and (5) all claims which cannot be waived as a matter of law. I understand that nothing in this Release prevents me from filing, cooperating with, or participating in any proceeding before the Equal Employment Opportunity Commission, the Department of Labor, or any other government agency, except that I acknowledge and agree that I am hereby waiving my right to any monetary benefits in connection with any such claim, charge or proceeding. I hereby represent and warrant that, other than the Excluded Claims, I am not aware of any claims that I have or might have against any of the parties released above that are not included in the Released Claims.

[IF EXECUTIVE IS 40 YEARS OF AGE OR OLDER] I acknowledge that I am knowingly and voluntarily waiving and releasing any rights I may have under the ADEA, and that the consideration given for this Release is in addition to anything of value to which I was already entitled. I further acknowledge that I have been advised, as required by the ADEA, that: (a) my waiver and release does not apply to any rights or claims that may arise after the date I sign this Release; (b) I have been advised that I have the right to consult with an attorney prior to executing this Release (although I may choose voluntarily not to do so); (c) I have been given twenty-one (21) days to consider this Release (although I may choose voluntarily to sign it earlier); (d) I have seven (7) days following my execution of this Release to revoke my acceptance of it (with such revocation to be delivered in writing to the Company within the 7-day revocation period); and (e) this Release will not be effective until the date upon which the revocation period has expired, which will be the eighth day after I sign it, provided I do not earlier revoke it ("**Effective Date**").

I further agree: (a) not to disparage the Company or any of the other Released Parties, in any manner likely to be harmful to its or their business, business reputation or personal reputation (although I may respond accurately and fully to any question, inquiry or request for information as required by legal process); (b) not to voluntarily (except in response to legal compulsion) assist any third party in bringing or pursuing any proposed or pending litigation, arbitration, administrative claim or other formal proceedings against the Company, its affiliates, officers, directors, employees or agents; and (c) to reasonably cooperate with the Company by voluntarily (without legal compulsion) providing accurate and complete information, in connection with the Company's actual or contemplated defense, prosecution or investigation of any claims or demands by or against third parties, or other matters, arising from events, acts, or omissions that occurred during my employment with the Company. I hereby certify that I have returned, without retaining any reproductions (in whole or in part), all information, materials and other property of the Company, including but not limited to any such information, materials or property contained on any personally-owned electronic or other storage device (such as computer, cellular phone, PDA, tablet or the like).

This Release, together with the Agreement (including all Exhibits and documents incorporated therein by reference), constitutes the complete, final and exclusive embodiment of the entire agreement between me and the Company with regard to this subject matter. It is entered into without reliance on any promise or representation, written or oral, other than those expressly contained in the Release or the Agreement, and it entirely supersedes any other such promises, warranties or representations, whether oral or written.

Reviewed, Understood and Agreed:

By: _____ Date: _____



FOR IMMEDIATE RELEASE

NewLink Genetics and Lumos Pharma Enter into Merger Agreement to Form Biopharmaceutical Company Focused on Developing Therapies to Treat Rare Diseases

-- Combined company to assume the name, Lumos Pharma, Inc. and is expected to be led by Richard J. Hawkins, current CEO of Lumos Pharma --

-- Lumos asset, LUM-201, represents first oral therapeutic candidate for pediatric growth hormone deficiency (PGHD) with planned Phase 2b expected to begin in mid-2020 --

-- Lumos Pharma stockholders, including Deerfield Management, a fund managed by Blackstone Life Sciences, Roche Venture Fund, New Enterprise Associates, Santé Ventures, and UCB have approved the transaction --

-- Companies to host investor call tomorrow, October 1st, at 8:30 a.m. EDT --

AUSTIN, TX and AMES, IA, September 30, 2019 -- NewLink Genetics Corporation (NASDAQ:NLNK) and Lumos Pharma, Inc., a private clinical stage biopharmaceutical company focused on development and commercialization of therapeutics for rare diseases, today announced that the companies have entered into a definitive merger agreement. Under the terms of the agreement, NewLink will issue Lumos Pharma stockholders NewLink common stock in exchange for their shares in Lumos such that Lumos Pharma stockholders will own approximately 50% of NewLink. Immediately following the closing of the merger, Lumos Pharma will become a wholly-owned subsidiary of NewLink, and NewLink will be renamed "Lumos Pharma, Inc." and will trade on Nasdaq under the symbol "LUMO." The combined company is expected to have offices in Austin, TX and Ames, IA. The Boards of Directors of both companies have approved the transaction. Major stockholders of Lumos Pharma have also approved the transaction, and the largest stockholder of NewLink has signed a support agreement in favor of the merger transaction. The transaction is anticipated to close in the first quarter of 2020.

The proposed merger would create a biopharmaceutical company focused initially on the development of Lumos Pharma's lead candidate, LUM-201 (ibutamoren), a potential oral therapy for pediatric growth hormone deficiency (PGHD) and other rare endocrine disorders. The merger would combine the Lumos management team's deep experience in rare diseases and endocrinology with NewLink's expertise in drug development and its solid financial position. This merger is expected to provide the financial support necessary to expedite the clinical development of LUM-201 for PGHD, for which the next step is the anticipated initiation of a Phase 2b clinical trial in mid-2020. The planned Phase 2b clinical trial will evaluate LUM-201 for children with PGHD compared to the current standard of care: daily injections of recombinant human growth hormone (rhGH).

"We believe this combined entity offers us a new, strategic position in the market and has the potential to create significant value to patients and our stockholders alike," said Eugene Kennedy, MD, Chief Medical Officer of NewLink. "Rick Hawkins and the other members of the Lumos senior management team bring longstanding experience in rare disease drug development and corporate management, which align ideally with our new strategic focus," he added.

“Our board and entire team are pleased to announce this exciting merger with NewLink,” said Rick Hawkins, CEO of Lumos Pharma. “Working toward the development and commercialization of novel therapies for rare diseases remains the cornerstone of Lumos Pharma’s strategy. As we advance LUM-201 for PGHD through later stages of clinical development, we believe there is an established regulatory path to approval and the opportunity for LUM-201 to become the world’s first oral therapeutic for pediatric growth hormone deficiency. Other target indications for LUM-201 have potential for development, supporting expanded market opportunity for this drug candidate. With exciting prospects for the clinic, we are optimistic about what this combined company will achieve.”

The market for PGHD is well-established and sizable, with current and anticipated therapies consisting of injectable treatments of rhGH or its derivatives. LUM-201 would potentially represent the first orally administered therapeutic for PGHD, with the aim to supplant a prolonged treatment regimen of frequent injections. LUM-201 is a growth hormone (GH) secretagogue, providing a differentiated mechanism of action to treat PGHD by increasing the amplitude of endogenous, pulsatile GH secretion. Related to LUM-201’s mechanism of action, clinically-derived predictive enrichment markers (PEM) are planned to be employed to optimize the targeted patient population for future clinical trials and treatment. LUM-201 has orphan drug designation for the treatment of growth hormone deficiency in the U.S. and EU, as well as an issued U.S. patent which expires in 2036 and pending patent applications in other jurisdictions.

In addition, the combined company expects to evaluate other opportunities to acquire or in-license assets addressing rare diseases to grow its pipeline and expects to continue to evaluate NewLink’s oncology portfolio to determine value creation opportunities.

Proposed Transaction Details

Under the terms of the merger agreement, at the effective time of the merger, the outstanding shares of Lumos Pharma capital stock will be converted into the right to receive a number of newly issued shares of NewLink common stock at exchange ratios applicable to each series of capital stock. The conversion of all Lumos Pharma capital stock will result in former Lumos Pharma and NewLink stockholders each owning approximately 50% of the combined company’s outstanding common stock. In conjunction with the transaction, the combined company plans to effect a reverse stock split.

The transaction has been approved by the Boards of Directors of both companies and the majority of Lumos Pharma stockholders, which include Deerfield Management, a fund managed by Blackstone Life Sciences, Roche Venture Fund, New Enterprise Associates (NEA), and Santé Ventures. The largest stockholder of NewLink, Stine Seed Farm, Inc., has also pledged to support the agreement. The transaction is expected to close in the first quarter of 2020, subject to the satisfaction of customary closing conditions, including approval by the stockholders of NewLink Genetics.

NewLink is being advised by Stifel as financial advisor and Cooley LLP as legal counsel. Lumos Pharma is being advised by DLA Piper LLP (US) as legal counsel.

Management and Organization

Following the merger, Richard J. Hawkins, current Chief Executive Officer of Lumos Pharma, is expected to become Chief Executive Officer of the combined company. Additional management of the combined company is expected to include John McKew, PhD, Chief Scientific Officer of Lumos Pharma as Chief Scientific Officer of the combined company; Eugene Kennedy, MD, Chief Medical Officer of NewLink as Chief Medical Officer of the combined company; and Carl Langren, Chief Financial Officer of NewLink as Chief Financial Officer of the combined company. The Board of Directors is expected to be composed of three directors designated by NewLink, three directors designated by Lumos Pharma, and one director jointly

designated by both companies. Upon closing of the transaction, the combined company will operate as Lumos Pharma, Inc. The company expects to have offices in Austin, Texas and Ames, Iowa.

Today, NewLink Genetics announced that Nicholas Vahanian, M.D. has chosen to retire from his position as President of the company and has also resigned from its Board of Directors; both effective Friday, September 27, 2019. Dr. Vahanian cofounded NewLink Genetics in 1999 and has served as President of the company since 2009 and as a member of its Board of Directors since 2015. Previously, he served as NewLink's Chief Medical Officer and Chief Operations Officer.

"Cofounding and leading NewLink these past 20 years has been a most rewarding experience particularly with the recent announcement that our partnered Ebola vaccine has been accepted for priority review by the FDA," said Nicholas Vahanian, M.D. "It has been remarkable to work with people who remain committed to keeping patients at the center of all that we do. I am grateful to my colleagues and our stockholders for this incredible chapter in my life and am excited about what lies ahead, both for me and for NewLink Genetics as the company works to consummate the proposed merger with Lumos Pharma."

Thomas A. Raffin, M.D., Lead Independent Director of NewLink Genetics commented, "NewLink Genetics is grateful to its cofounder, Nick Vahanian, for the insight and relentless energy he brought to the company throughout his tenure. The Board thanks Dr. Vahanian for these and many other contributions he has made to the company and wishes him well in his future endeavors."

On September 30, 2019, management commenced a restructuring plan in the context of the anticipated merger. This action is expected to be substantially completed by December 31, 2019. The objective of the restructuring is to reduce NewLink's operating expenses and align its personnel with the anticipated needs of NewLink following the merger.

Under the restructuring plan, NewLink will reduce its workforce by 28 employees (approximately 60%), including several members of management. NewLink expects that the workforce reduction and the change in the management team will decrease its cash payroll expense by approximately \$5.0-\$6.0 million annually.

In connection with the restructuring and the departure of Dr. Vahanian, NewLink estimates that it will incur aggregate restructuring charges of approximately \$4.5 million, which will be recorded in the third and fourth quarters of 2019, related to one-time termination severance payments and other employee-related costs, excluding any amounts related to stock-based compensation expense for the acceleration of stock options and the extension of post-termination stock option exercise periods. The charges that it expects to incur in connection with the workforce reduction is subject to a number of assumptions, and actual results may differ materially. NewLink may also incur additional costs not currently contemplated due to events that may occur as a result of, or that are associated with, the workforce reduction.

Financial Position and Operational Synergies

In advance of the proposed merger, NewLink has commenced an organizational realignment to support the operational and strategic activities of the combined company upon close of the merger. The parties expect the combined company to have approximately \$80.0 million in cash as of December 31, 2019 (unaudited pro forma cash balance), which excludes cash reserved for restructuring and severance costs relating to the departures of NewLink executives and other employees. The combined company forecasts that the average cash spend per quarter in 2020 will be approximately \$6.5-\$7.5 million, excluding restructuring and severance costs, acquisitions, licensing or financing opportunities. This financial position is expected to be sufficient to support the combined company's planned clinical development program through the readout of its Phase 2b clinical trial of LUM-201. The combined company may receive additional, non-dilutive financing should the U.S. Food and Drug Administration (FDA) approve NewLink's partnered Ebola vaccine V920, triggering the issuance of a monetizable priority review voucher (PRV) in which NewLink has a substantial interest.

On September 17, 2019, it was announced that the FDA has accepted the biologics license application (BLA) for Ebola vaccine V920 and the Prescription Drug User Fee Act (PDUFA), or target action date, is set for March 14, 2020.

Conference Call and Webcast Details

The companies have scheduled a conference call and webcast for 8:30 a.m. EDT tomorrow, October 1st, to review the transaction. Access to the live conference call is available by dialing (855) 469-0612 (U.S.) or +1 (484) 756-4268 (international) five minutes prior to the start of the call. The conference call will be webcast live, and a link to the webcast can be accessed here at <https://edge.media-server.com/mmc/p/ko4geqtk>, through the NewLink Genetics website at www.NewLinkGenetics.com in the "Investors & Media" section under "Events and Presentations," or through the Lumos Pharma website at <https://lumos-pharma.com/> in the "News" section. To ensure a timely connection, it is recommended that users register at least 15 minutes prior to the scheduled webcast.

A replay of the call will be available approximately two hours after the completion of the call and can be accessed by dialing (855) 859-2056 (U.S.) or +1 (404) 537-3406 (international) and using the passcode 1287208. The replay will be available for 60 days from the date of the call.

Additional Information and Where to Find It

In connection with the proposed transaction, NewLink Genetics will be filing documents with the SEC, including preliminary and definitive proxy statements relating to the proposed transaction. The definitive proxy statement will be mailed to NewLink Genetics' stockholders in connection with the proposed transaction. BEFORE MAKING ANY VOTING DECISION, INVESTORS AND SECURITY HOLDERS ARE URGED TO READ THE PRELIMINARY AND DEFINITIVE PROXY STATEMENTS AND ANY OTHER DOCUMENTS TO BE FILED WITH THE SEC IN CONNECTION WITH THE PROPOSED TRANSACTION OR INCORPORATED BY REFERENCE IN THE PROXY STATEMENT WHEN THEY BECOME AVAILABLE BECAUSE THEY WILL CONTAIN IMPORTANT INFORMATION ABOUT THE PROPOSED TRANSACTION. Investors and security holders may obtain free copies of these documents (when they are available) and other related documents filed with the SEC at the SEC's web site at www.sec.gov, on NewLink Genetics' website at www.newlinkgenetics.com or by contacting NewLink Genetics' Investor Relations at 515-598-2555.

Participants in the Solicitation

NewLink and Lumos Pharma and their respective directors and executive officers may be deemed to be participants in the solicitation of proxies from NewLink stockholders in connection with the proposed transaction. Information about NewLink's directors and executive officers and their ownership of NewLink's securities is set forth in NewLink Genetics' proxy statement for its 2019 Annual Meeting of Stockholders, which was filed with the SEC on April 5, 2019, as modified or supplemented by any Form 3 or Form 4 filed with the SEC since the date of such filing. Other information regarding the proposed transaction, including information regarding the participants in the proxy solicitation and a description of their direct and indirect interests, by security holdings or otherwise, will be included in the proxy statements described above and other relevant materials to be filed with the SEC when they become available. These documents are or will be available free of charge at the SEC's web site at www.sec.gov and from other sources indicated above.

About Lumos Pharma

Lumos Pharma, Inc. is a clinical stage biopharmaceutical company focused on the development and commercialization of therapeutics for rare and neglected diseases. Lumos Pharma was founded and is led by a management team with longstanding experience in rare disease drug development and is funded by leading healthcare investors, including Deerfield Management, a fund managed by Blackstone Life Sciences,

Roche Venture Fund, New Enterprise Associates (NEA), Santé Ventures, and UCB. Lumos Pharma's lead product candidate is LUM-201, an oral growth hormone stimulating therapeutic, is in late stage clinical development for the treatment of Pediatric Growth Hormone Deficiency (PGHD). If approved by the FDA, LUM-201 would provide an alternative to the injections that current PGHD patients endure for many years of treatment. LUM-201 has received Orphan Drug Designation in both the US and EU. For more information, please visit www.lumos-pharma.com.

About NewLink Genetics Corporation

NewLink Genetics is a clinical stage biopharmaceutical company focused on developing novel oncology product candidates to improve the lives of patients with cancer where treatment options are limited. NewLink Genetics' IDO pathway inhibitors, indoximod and its prodrug, NLG802, are immuno-oncology drug candidates designed to harness multiple components of the immune system to combat cancer. For more information, please visit www.NewLinkGenetics.com.

Cautionary Note Regarding Forward-Looking Statements

This press release contains forward-looking statements of NewLink Genetics that involve substantial risks and uncertainties. All statements contained in this press release are forward-looking statements within the meaning of The Private Securities Litigation Reform Act of 1995. The words "forecast," "projected," "guidance," "upcoming," "will," "plan," "intend," "anticipate," "approximate," "expect," "potential," or the negative of these terms or other similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. These forward-looking statements include, among others, statements about NewLink Genetics' financial guidance for 2019 and beyond; results of its clinical trials for product candidates; its timing of release of data from ongoing clinical studies; its plans related to execution of clinical trials; plans related to moving additional indications into clinical development; NewLink Genetics' future financial performance, impact of management changes, organizational restructuring, results of operations, cash position and sufficiency of capital resources to fund its operating requirements; statements about NewLink Genetics' expectations regarding the capitalization, resources and ownership structure of the combined company; NewLink Genetics' expectations regarding the sufficiency of the combined company's resources to fund the advancement of any development program or the completion of any clinical trial; statements about the potential benefits of the transaction; the expected completion and timing of the transaction and other information relating to the transaction; expected costs associated with termination benefits and financial impact of the reduction in force, and any other statements other than statements of historical fact. Actual results or events could differ materially from the plans, intentions and expectations disclosed in the forward-looking statements that NewLink Genetics makes due to a number of important factors, including (i) the risk that the transaction may not be completed in a timely manner or at all, which may adversely affect the NewLink Genetics' business and the price of the common stock of NewLink Genetics, (ii) the failure to satisfy of the conditions to the consummation of the transaction, including approval of the issuance of shares of NewLink Genetics common stock in the transaction or the contemplated reverse stock split, (iii) the occurrence of any event, change or other circumstance that could give rise to the termination of the merger agreement, (iv) the risk that the definitive merger agreement may be terminated in circumstances that require NewLink Genetics to pay a termination fee to Lumos Pharma; (v) risks related to the ability to realize the anticipated benefits of the transaction, including the risk that the businesses will not be integrated successfully, (vi) the effect of the announcement or pendency of the transaction on NewLink Genetics' business relationships, operating results and business generally, (vii) risks that the proposed transaction disrupts current plans and operations, (viii) risks related to diverting management's attention from NewLink Genetics' ongoing business operations, (ix) other business effects, including the effects of industry, market, economic, political or regulatory conditions, future exchange and interest rates, and changes in tax and other laws, regulations, rates and policies, (x) the uncertainties inherent in research and development, including the ability to meet anticipated clinical endpoints, commencement and/or completion dates for clinical trials, regulatory submission dates, regulatory approval dates and/or launch dates, as well as the possibility of unfavorable new clinical data and further analyses of existing clinical data, (xi) the risk that clinical trial data are subject to differing interpretations and assessments by regulatory authorities; (xii) risks related to cost reduction efforts; (xiii) NewLink Genetics' workforce reduction costs may be greater than anticipated and the workforce reduction may have an adverse impact on the NewLink Genetics' development activities; and (xiv) the outcome of any legal proceedings that may be instituted against NewLink Genetics

related to the merger agreement or the transaction. Further risks that could cause actual results to differ materially from those matters expressed in or implied by such forward-looking statements are discussed in "Risk Factors" and elsewhere in NewLink Genetics' Quarterly Report on Form 10-Q for the quarter ended June 30, 2019 and other reports filed with the SEC. The forward-looking statements in this press release represent NewLink Genetics' views as of the date of this press release. NewLink Genetics anticipates that subsequent events and developments will cause its views to change. However, while it may elect to update these forward-looking statements at some point in the future, it specifically disclaims any obligation to do so. You should, therefore, not rely on these forward-looking statements as representing NewLink Genetics' views as of any date subsequent to the date of this press release.

Investor & Media Contact:

Lisa W. Miller
Director, Investor Relations
NewLink Genetics Corporation
515-598-2555
lmiller@linkp.com

NEWLINK GENETICS *and* LUMOS PHARMA MERGER

*Focused on Developing Therapies to
Treat Rare Diseases*



September 30, 2020

LEGAL DISCLAIMER

Additional Information and Where to Find It

In connection with the proposed transaction, NewLink Genetics Corporation (“NewLink”) will be filing documents with the SEC, including preliminary and definitive proxy statements relating to the proposed transaction. The definitive proxy statement will be mailed to NewLink’s stockholders in connection with the proposed transaction. **BEFORE MAKING ANY VOTING DECISION, INVESTORS AND SECURITY HOLDERS ARE URGED TO READ PRELIMINARY AND DEFINITIVE PROXY STATEMENTS AND ANY OTHER DOCUMENTS TO BE FILED WITH THE SEC IN CONNECTION WITH THE PROPOSED TRANSACTION OR INCORPORATED BY REFERENCE IN THE PROXY STATEMENT WHEN THEY BECOME AVAILABLE BECAUSE THEY WILL CONTAIN IMPORTANT INFORMATION ABOUT THE PROPOSED TRANSACTION.** Investors and security holders may contact NewLink for free copies of these documents (when they are available) and other related documents filed with the SEC at the SEC’s web site at www.sec.gov, NewLink’s website at www.newlinkgenetics.com or by contacting NewLink Investor Relations at 515-598-2555.

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NewLink and Lumos Pharma, Inc. (“Lumos”) and their respective directors and executive officers may be deemed to be participants in the solicitation of proxies from NewLink stockholders in connection with the proposed transaction. Information about NewLink’s directors and executive officers and ownership of NewLink’s securities is set forth in NewLink’s proxy statement for its 2019 Annual Meeting of Stockholders, which was filed with the SEC on April 5, 2019, as modified or supplemented by any Form 3 or Form 4 filed with the SEC since the date of such filing. Other information regarding the proposed transaction, including information regarding the participants in the proxy solicitation and a description of their direct and indirect interest in securities of NewLink, will be included in the proxy statements described above and other relevant materials to be filed with the SEC when they become available. These documents are or will be available free of charge at the SEC’s web site at www.sec.gov and from other sources indicated above.

FORWARD-LOOKING STATEMENTS

This presentation contains forward-looking statements of NewLink that involve substantial risks and uncertainties. All statements, other than statements of historical facts, contained in this presentation are forward-looking statements, within the meaning of The Private Securities Litigation Reform Act of 1995. The words "anticipate," "believe," "estimate," "expect," "intend," "may," "plan," "target," "potential," "will," "could," "should," "seek" or the negative of these terms or other similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words.

These forward-looking statements include, among others, statements about NewLink's financial guidance for 2019 and beyond; results of its clinical trials for product candidates; its timing of release of data from ongoing clinical studies; its plans related to execution of clinical trials; plans relating to moving additional indications into clinical development; NewLink's future financial performance, impact of management changes, organizational restructuring, results of operations, cash position and sufficiency of capital resources to fund its operating requirements; statements about NewLink's expectations regarding the capitalization, resources and ownership structure of the combined company; NewLink's expectations regarding the sufficiency of the combined company's resources to fund the advancement of any development program or the completion of any clinical trial; statements about the potential benefits of the transaction; the expected completion and timing of the transaction and other information relating to the transaction, and any other statements other than statements of historical fact.

Actual results or events could differ materially from the plans, intentions and expectations disclosed in the forward-looking statements that NewLink makes due to a number of important factors, including those risks discussed in "Risk Factors" and elsewhere in NewLink's Quarterly Report on Form 10-Q for the quarter ended June 30, 2019 and other reports filed with the U.S. Securities and Exchange Commission (SEC). The forward-looking statements in this presentation represent NewLink's views as of the date of this presentation. NewLink anticipates that subsequent events and developments will cause its views to change. However, while it may elect to update these forward-looking statements at some point in the future, NewLink specifically disclaims any obligation to do so. You should, therefore, not rely on these forward-looking statements as representing NewLink's views as of any date subsequent to the date of this presentation.



**We are focused
on the
*extraordinary***

Our goal is to bring novel
therapies to people with
rare diseases.



MANAGEMENT WELCOME



Richard Hawkins
CEO



John McKew, PhD
CSO



Carl Langren
CFO



Eugene Kennedy, MD
CMO

Experienced management team with significant clinical development and commercial experience

Richard Hawkins – CEO of Lumos Pharma, developer of growth hormone (GH) agonists for use in acromegaly at Sepracor (sold to Pfizer). Built one of the first contract recombinant protein manufacturing facilities (Covance Biotechnology). Co-founder of Pharmaco, a contract research organization (merged with F

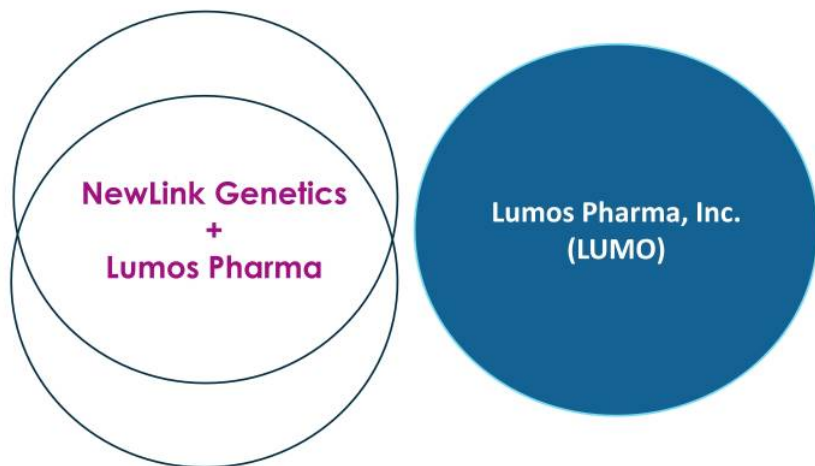
John McKew – CSO of Lumos Pharma, former Scientific Director at NIH - National Center for Advancing Translational Science (NCATS) and Therapeutics for Rare and Neglected Diseases (TRND). Director level, Wyeth Research Genetics Institute.

Carl Langren – CFO of NewLink Genetics, former CFO of BioProtection Systems, Housby Mixer Group, Equity Dynamics Inc., and Tax Manager with McGladrey Pullen & Co.

Eugene Kennedy - CMO of NewLink Genetics, former Assistant Professor of Surgery and Chief of the Section of Pancreaticobiliary Surgery at Thomas Jefferson University (Philadelphia), former faculty at Johns Hopkins Hospital.

TRANSACTION SUMMARY

Post merger, NewLink Genetics and Lumos Pharma stockholders are each expected to own approximately 50% of the combined company. The combined company will effect a reverse stock split. NewLink Genetics is expected to be renamed "Lumos Pharma, Inc." and to trade on the Nasdaq under "LUMO."



- ▶ **Company expected to be led by Rick Hawkins**
 - ▶ **Board of Directors expected to include current NewLink Genetics and Lumos Pharma directors mutually agreed designee**
 - ▶ **Late-stage orphan drug program**
 - ▶ **Projected pro forma combined cash of ~\$80 million at 2019 year end**, excluding ongoing severance and restructuring obligations
 - ▶ **Projected average cash use of \$6.5-\$7.5 million per quarter in 2020**, ongoing operating spend, excluding any restructuring charges and severance costs
 - ▶ **Located in Austin, TX and Ames, IA**
-

SIGNIFICANT HIGH-QUALITY INVESTORS

Lumos Pharma brings to the merger strong, well-recognized healthcare investors

- ▶ Well-known healthcare venture investors:
NEA and Santé Ventures
- ▶ Large healthcare investors that participate in public and private markets:
Deerfield Management and a fund managed by Blackstone Life Sciences
- ▶ Large pharma representatives:
Roche Venture Fund and UCB

NewLink Genetics' largest stockholder with ~21% ownership has agreed to support merger

POST-MERGER STRATEGIC PRIORITIES

Initial focus will be on initiation of Phase 2b trial of LUM-201 (ibutamoren) for pediatric growth hormone deficiency (PGHD)

Build pipeline through strategic acquisitions of assets focusing on rare diseases

LUM-201: Oral secretagogue candidate for PGHD

- ▶ Established regulatory path – planned Phase 2b expected to start mid-2020
- ▶ Potential to address 50-60%¹ of total PGHD patients
- ▶ Significant market opportunity, well-proven value through industry peers

1. Lumos Pharma data on file

LUM-201 PROGRAM PIPELINE

Product Candidate	Orphan Indication	Preclinical	Phase I	Phase II	Phase III	Status
Ibutamoren (LUM-201)	Pediatric Growth Hormone Deficiency (PGHD)					Phase 2b – expected to initiate mid-2020
	Turner Syndrome					Ongoing clinical planning for Phase 2 trial, timing dependent on PGHD data
	Children Born Small for Gestational Age (SGA)					Ongoing clinical planning for Phase 2 trial, timing dependent on PGHD data

▶ Combined company plans to look for acquisitions and collaborations to expand pipeline beyond LUM-201

PGHD AND STANDARD OF CARE

- ▶ PGHD occurs due to **inadequate secretion of growth hormone** by the pituitary gland during childhood
- ▶ PGHD can be either **hereditary or acquired**, although the majority of cases have unknown causes (**idiopathic**)
 - ▶ Lack of physical growth is the most obvious manifestation; but numerous metabolic processes are also affected
- ▶ PGHD Incidence in the U.S. – approximately 1 in 3500 children¹
- ▶ Standard of care consists of **daily, subcutaneous injections** of recombinant human growth hormone (rhGH)
 - ▶ Can be painful, potentially leading to missed doses and sub-optimal growth^{2, 3}
 - ▶ ~2500 injections over years of treatment



▶ Robust, established market primed for an oral alternative

1. GlobalData EpiCast Report for Growth Hormone Deficiency Epidemiology forecast to 2026

2. Rosenfeld, R., et al Compliance and Persistence in Pediatric and Adult Patients Receiving Growth Hormone Therapy, *Endocrine Practice*, 2008, 14(2), 143-154

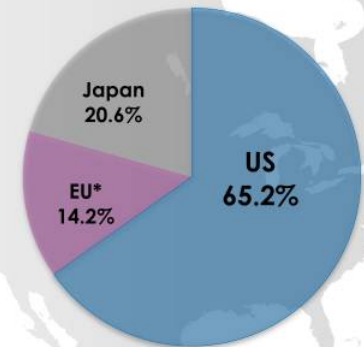
3. Cutfield, W. S. et al Non-Compliance with Growth Hormone Treatment in Children Is Common and Impairs Linear Growth, *PLOS ONE* 6(1): e16223. <https://doi.org/10.1371/journal.pone.1>

PEDIATRIC GROWTH HORMONE DEFICIENCY MARKET ANALYSIS

Global rhGH sales for pediatric patients with growth hormone deficiency (PGHD) reached **\$1.12 Billion** in 2016 in major markets¹

- ▶ Expected CAGR for global PGHD sales is 3.5% leading to a projected market size of **\$1.58 Billion¹** in 2026
- ▶ **US** accounted for **65.2%** of global sales of rhGH for PGHD in 2016

Global Sales Distribution of rhGH for PGHD in 2016 in the major markets¹



*Germany, France, Italy, Spain, and UK

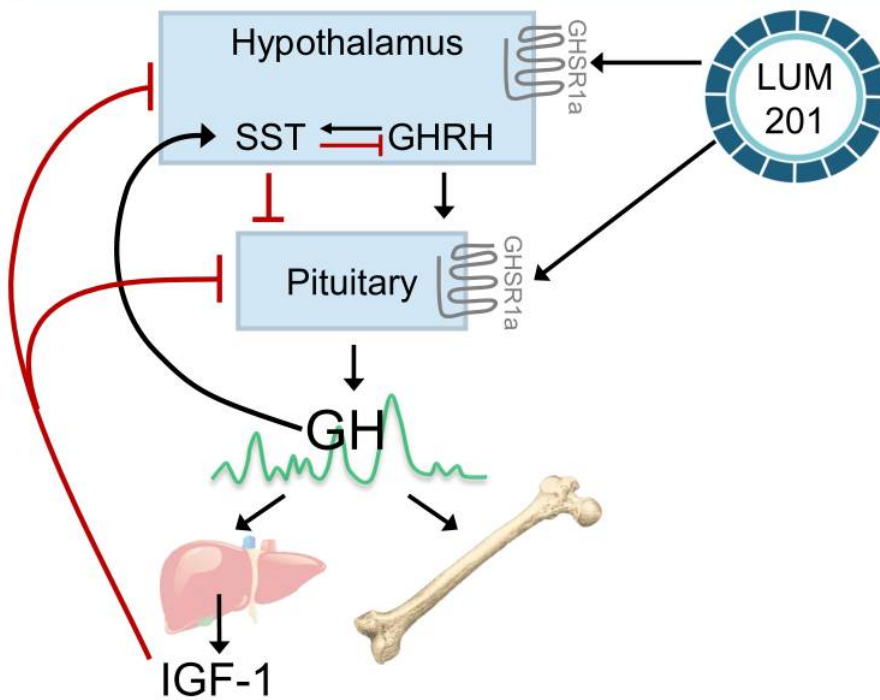
1. Global Data Opportunity Analyzer: Growth Hormone Deficiency Opportunity Analysis and Forecasts to GDHC069POA Published: May 2017

ESTABLISHED VALUE PROPOSITION AND REGULATORY PAT

Vision	Targeted Patients	Near-term Clinical Milestone
<p>LUM-201, if approved, has the potential to become the world's first oral growth hormone secretagogue to treat PGHD and other rare growth disorders.</p> <p>Aim to supplant a prolonged treatment regimen of frequent injections (current standard of care).</p>	<p>Predictive enrichment markers (PEM) are planned to be employed to optimize the targeted patient population for trials and treatment.</p> <p>Addressable patients represent 50-60% of PGHD population.¹</p> <p>Other potential pediatric endocrine indications identified.</p>	<p>Phase 2b trial planned for mid-2020.</p>

1. Lumos Pharma data on file

LUM-201: MECHANISM OF ACTION



- ▶ Oral LUM-201 is a **growth hormone secretagogue**
- ▶ Acts as an agonist of GH Secretagogue Receptor (GHSR1a) stimulate GH release¹
- ▶ LUM-201 has been observed to **increase the amplitude of endogenous pulsatile GH secretion**^{2,3}
- ▶ LUM-201's stimulatory effect is regulated by GH/IGF-1 feedback

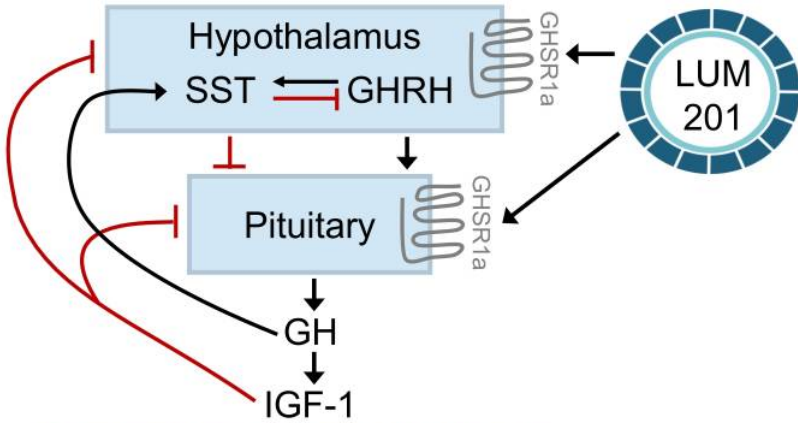
1. Howard 1996 Science
2. Nass 2008 Ann Intern Med
3. Chapman 1997 J Clin Endocrinol Metab

SST = somatostatin
IGF-1 = insulin-like growth factor-1

GHRH = growth hormone-releasing hormone
GHSR1a = GH secretagogue receptor 1a

TARGETED PGHD POPULATION

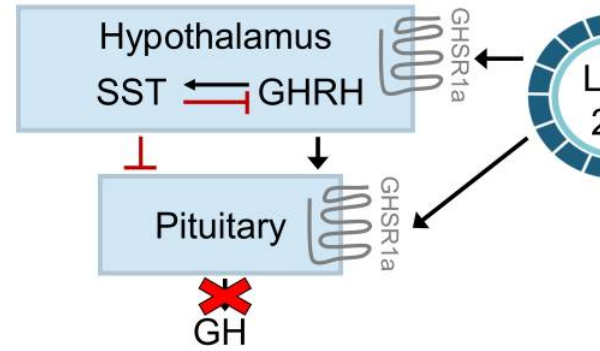
PEM-Positive: Included



Functional but reduced HP-GH axis

- Able to secrete some, but insufficient, GH
- Expected to respond to LUM-201
- Represents 50-60% of PGHD patients¹

PEM-Negative: Excluded



Non-functional HP-GH axis

- Unable to secrete GH
- Not expected to respond to LUM-201
- Represents 40-50% of PGHD patients

Predictive Enrichment Markers (PEM)

- ▶ GH response to a single LUM-201 dose and baseline IGF-1 has the potential to distinguish these two populations

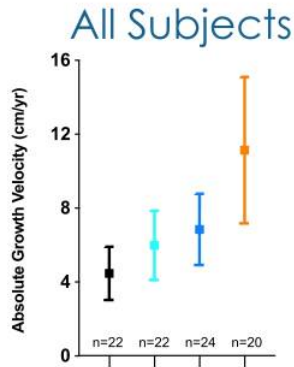
HP-GH = hypothalamic-pituitary-growth hormone

1. Lumos Pharma data on file

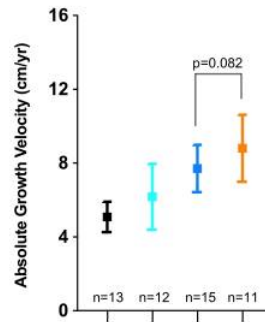
POST-HOC: PREDICTIVE ENRICHMENT MARKERS AT WORK

Absolute Growth

means and SD



PEM-Positive

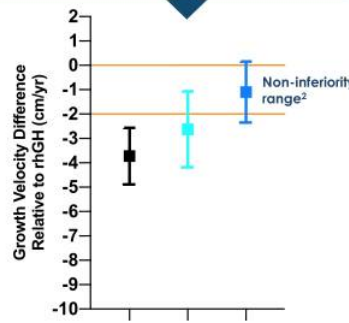
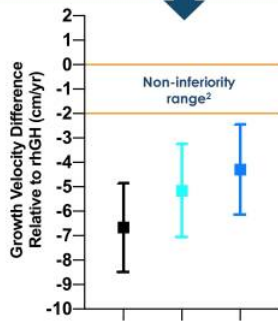


- ▶ Naïve PGHD patients, 020 tr
 - ▶ Data from first 6 months pre formulation change¹
- ▶ LUM-201 0.8 mg/kg not statistically different from rhGH but insufficient to meet FDA requirements for non-inferiority
- ▶ Lumos expects **prospective application of PEMs** and **high doses** to improve response meet statistical non-inferiority margin

Relative Growth: non-inferiority analysis

[growth velocity in rhGH minus growth velocity in test group]

means of the difference and 95% CI



- Placebo
- LUM-201 0.4 mg/kg/d
- LUM-201 0.8 mg/kg/d
- rhGH 42 mcg/kg/d

1. A formulation change occurred 6 months into dosing of this trial and was also used for subsequent PGHD trials, resulting in substantially lower exposure of LUM-201.
2. A 2 cm non-inferiority (NI) range was agreed to by the FDA for multiple recent long-acting GH studies. Lumos has not yet agreed to a NI window with the FDA.

PRIOR CLINICAL EXPERIENCE IN PGHD WITH LUM-201

- ▶ Prior PGHD trials
 - ▶ Conducted prior to Lumos acquisition of LUM-201 in July 2018
 - ▶ 3 clinical trials in pediatric population explored safety and efficacy
 - ▶ Phase 1 Trial 019 – PK, Phase 2 Trial 020 – Naïve, Phase 2 Trial 024 – Previously rhGH treated
 - ▶ No significant safety concerns were identified
 - ▶ Formulation change midway through Trial 020 reduced bioavailability of the drug and confounded data
 - ▶ Phase 2 trials were discontinued after interim analysis of Trial 024
- ▶ Scientifically-driven post-hoc analysis enabled (Trial 020):
 - ▶ Definition of PEM-positive patients, with PEM status planned to be used as an inclusion criterion in future trials

▶ Growth response in prior trials (highest dose tested) suggests potential improved efficacy at a higher dose

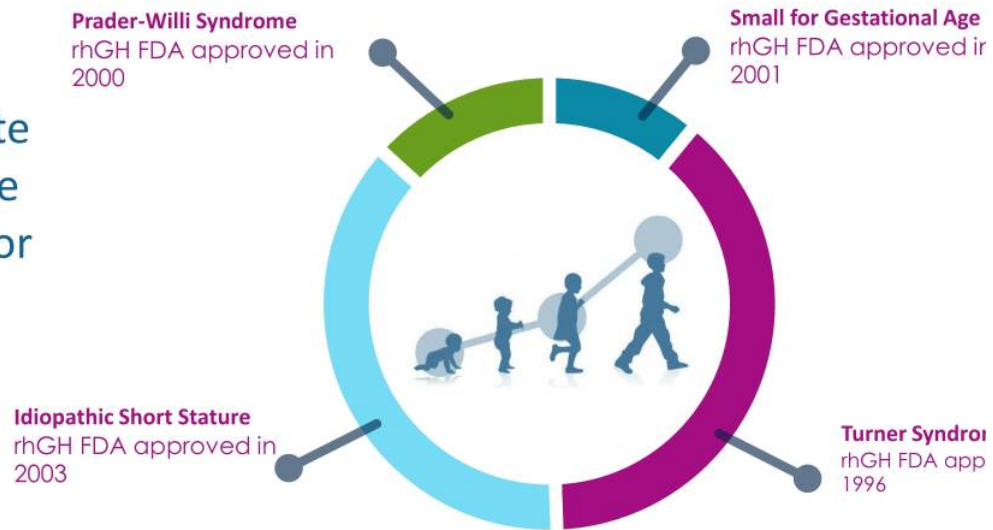
CLINICAL DEVELOPMENT OUTLINE FOR PGHD

- ▶ Proposed Phase 2b PGHD clinical trial design
 - ▶ PEM-enabled patient selection
 - ▶ Three dose levels of LUM-201 (0.8, 1.6, 3.2 mg/kg)
 - ▶ Positive control arm of daily rhGH injections
 - ▶ 6-month dosing
 - ▶ 20 subjects per arm
 - ▶ Treatment-naïve, age-matched cohorts
- ▶ Extension trial - move all subjects to most efficacious Phase 2 dose

▶ Primary outcome measure: annualized growth height velocity

LUM-201: OTHER POTENTIAL RARE ENDOCRINE DISORDERS

Beyond PGHD, Lumos also plans to investigate LUM-201 for other rare endocrine disorders, for which rhGH has been approved



▶ Significant opportunities with established regulatory pathways

Source: GARD- Genetic and Rare Diseases Information Center

ORPHAN DESIGNATION AND IP

- ▶ Orphan Drug Designation received in US and EU for GHD in 2017
 - ▶ With potential pediatric extensions, eligible for 12 years exclusivity in EU and 7.5 years in US.
 - ▶ Plan to seek designation in Japan
 - ▶ Intellectual Property
 - ▶ “Detecting and Treating Growth Hormone Deficiency”
 - ▶ Use of LUM-201 in PGHD
 - ▶ US Patent issued with expiration in 2036
 - ▶ Patent applications filed in multiple other countries
-

LUM-201 SUMMARY

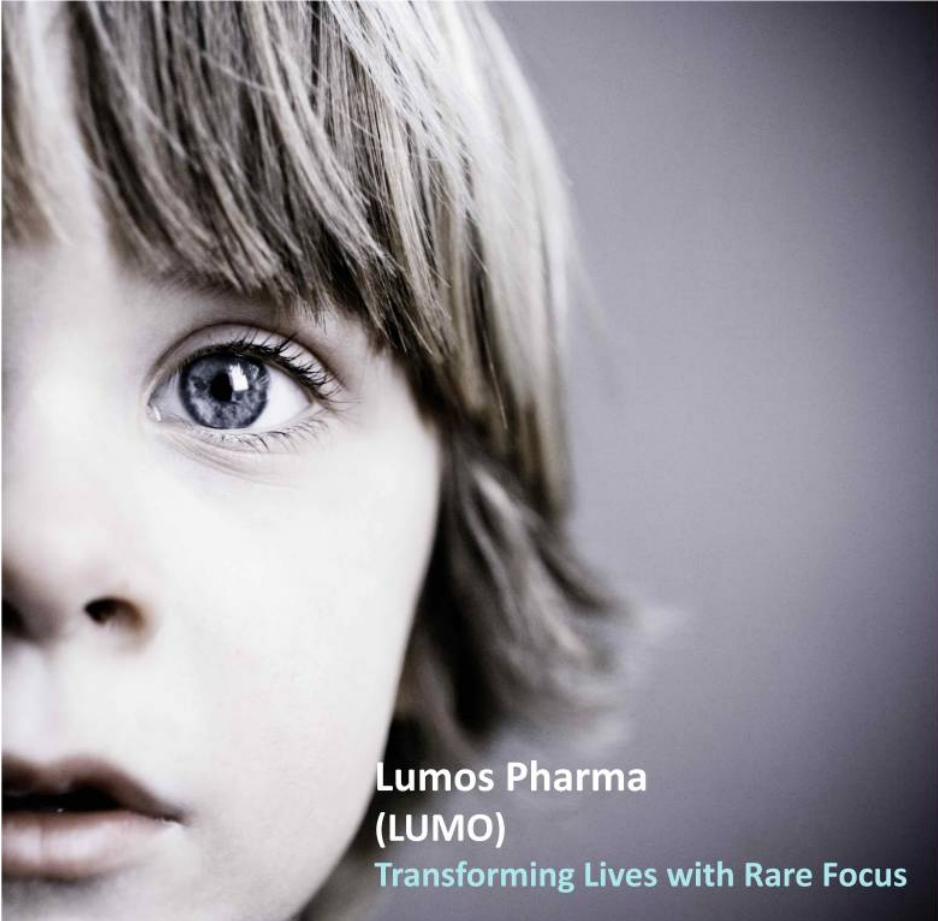
If approved, potential to be the first oral growth hormone secretagogue therapy for PGHD

- ▶ Established regulatory path – Phase 2b in PGHD anticipated to start mid-2020
 - ▶ Clinical data supports target engagement and safety
 - ▶ ~ 1,200 subjects dosed including ~150 PGHD patients
 - ▶ Predictive enrichment markers (PEM) identify appropriate patient population
 - ▶ Orphan drug designation received in US and EU
 - ▶ Phase 2 ready compound for potential trials in other pediatric endocrine indications
-

SECURE PRO FORMA CASH POSITION

- ▶ Combined pro forma cash balance at year-end 2019 projected to be ~ \$80M, excluding costs to right-size the combined organization
- ▶ Spending after merger expected to be an average of \$6.5-\$7.5M per quarter in 2020 excluding restructuring charges and severance costs
- ▶ Financial position expected to support the combined company through the readout of the planned Phase 2b clinical trial
- ▶ May receive non-dilutive financing if FDA approves partnered Ebola vaccine V920
 - ▶ FDA accepted the biologics license application for V920 on September 17, 2019¹ and the Prescription Drug User Fee Act (PDUFA), or target action date, was set for March 14, 2020
 - ▶ An FDA approval of this vaccine would trigger the issuance of a priority review voucher (PRV) in which NewLink holds a substantial financial interest

1. Merck press release, September 17, 2019



**Lumos Pharma
(LUMO)**

Transforming Lives with Rare Focus

- ▶ Merger offers opportunity to develop therapeutics for the disease community
- ▶ LUM-201: Potential to improve upon treatment paradigm in established and sizeable market
- ▶ Strong balance sheet and streamlined operations expected to provide substantial runway
- ▶ Management team with deep experience in rare disease and clinical development

