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

FORM 10-Q

(Mark One)

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

FOR THE QUARTERLY PERIOD ENDED SEPTEMBER 30, 2020

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

FOR THE TRANSITION PERIOD FROM TO

Commission file number: 001-38613

Bionano Genomics, Inc.

(Exact name of registrant as specified in its charter)

Delaware	**26-1756290**
(State or Other Jurisdiction of Incorporation or Organization)	(I.R.S. Employer Identification No.)
9540 Towne Centre Drive, Suite 100, San Diego, CA	**92121**
(Address of Principal Executive Offices)	(Zip Code)

(858) 888-7600

(Registrant's Telephone Number, Including Area Code)

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, $0.0001 par value per share	BNGO	The Nasdaq Stock Market, LLC
Warrants to purchase Common Stock	BNGOW	The Nasdaq Stock Market, LLC

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

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

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

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

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

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

As of November 6, 2020, the registrant had 153,186,000 shares of Common Stock ($0.0001 par value) outstanding.

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PART I. FINANCIAL INFORMATION

ITEM 1. FINANCIAL STATEMENTS

BIONANO GENOMICS, INC.
Condensed Consolidated Balance Sheets

	(Unaudited) September 30, 2020	December 31, 2019
Assets		
Current assets:		
Cash and cash equivalents	$ 18,867,000	$ 17,311,000
Accounts receivable, net	3,860,000	6,334,000
Inventory, net	4,593,000	3,444,000
Prepaid expenses and other current assets	1,920,000	1,169,000
Total current assets	29,240,000	28,258,000
Property and equipment, net	3,635,000	1,950,000
Intangible assets, net	1,580,000	—
Goodwill	6,941,000	—
Total assets	$ 41,396,000	$ 30,208,000
Liabilities and stockholders' equity		
Current liabilities:		
Accounts payable	$ 5,665,000	$ 2,699,000
Accrued expenses	4,466,000	3,225,000
Contract liabilities	412,000	358,000
Current portion of long-term debt	14,239,000	20,085,000
Total current liabilities	24,782,000	26,367,000
Long-term debt, net of current portion	1,775,000	—
Long-term contract liabilities	88,000	183,000
Other non-current liabilities	75,000	44,000
Total liabilities	26,720,000	26,594,000
Commitments and contingencies		
Stockholders' equity:		
Common stock, $0.0001 par value, 200,000,000 and 200,000,000 shares authorized at September 30, 2020 and December 31, 2019, respectively; 148,348,000 and 34,274,000 shares issued and outstanding at September 30, 2020 and December 31, 2019, respectively	15,000	3,000
Additional paid-in capital	146,614,000	106,188,000
Accumulated deficit	(131,953,000)	(102,577,000)
Total stockholders' equity	14,676,000	3,614,000
Total liabilities and stockholders' equity	$ 41,396,000	$ 30,208,000

See accompanying notes to the condensed consolidated financial statements

BIONANO GENOMICS, INC.
Condensed Consolidated Statements of Operations
(Unaudited)

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	2019	2020	2019
Revenue:				
Product revenue	$ 1,580,000	$ 3,162,000	$ 3,503,000	$ 6,870,000
Service and other revenue	616,000	151,000	1,010,000	470,000
Total revenue	2,196,000	3,313,000	4,513,000	7,340,000
Cost of revenue:				
Cost of product revenue	1,136,000	2,238,000	2,426,000	4,883,000
Cost of service and other revenue	324,000	137,000	493,000	194,000
Total cost of revenue	1,460,000	2,375,000	2,919,000	5,077,000
Operating expenses:				
Research and development	2,304,000	2,174,000	7,379,000	6,682,000
Selling, general and administrative	8,659,000	4,449,000	21,640,000	14,295,000
Total operating expenses	10,963,000	6,623,000	29,019,000	20,977,000
Loss from operations	(10,227,000)	(5,685,000)	(27,425,000)	(18,714,000)
Other expenses:				
Interest expense	(589,000)	(578,000)	(1,911,000)	(1,613,000)
Loss on debt extinguishment	—	—	—	(1,333,000)
Other expenses	54,000	(131,000)	—	(241,000)
Total other expenses	(535,000)	(709,000)	(1,911,000)	(3,187,000)
Loss before income taxes	(10,762,000)	(6,394,000)	(29,336,000)	(21,901,000)
Provision for income taxes	(30,000)	(4,000)	(40,000)	(13,000)
Net loss	$ (10,792,000)	$ (6,398,000)	$ (29,376,000)	$ (21,914,000)
Net loss per share, basic and diluted	$ (0.08)	$ (0.59)	$ (0.34)	$ (2.06)
Weighted-average common shares outstanding basic and diluted	132,942,000	10,898,000	86,632,000	10,662,000

See accompanying notes to the condensed consolidated financial statements.

BIONANO GENOMICS, INC.
Condensed Consolidated Statements of Stockholders' Equity (Deficit) (Unaudited)

	Common Stock		Additional Paid-in Capital	Accumulated Deficit	Total Stockholders' Equity (Deficit)
	Shares	Amount			
Balance at January 1, 2019	10,055,000	$ 1,000	$ 82,898,000	$ (72,762,000)	$ 10,137,000
Stock option exercises	42,000	—	54,000	—	54,000
Stock-based compensation expense	—	—	289,000	—	289,000
Issue common stock	748,000	—	2,410,000	—	2,410,000
Issue warrants for debt	—	—	630,000	—	630,000
Issue stock for debt	—	—	202,000	—	202,000
Net loss	—	—	—	(7,852,000)	(7,852,000)
Balance at March 31, 2019	10,845,000	$ 1,000	$ 86,483,000	$ (80,614,000)	$ 5,870,000
Stock option exercises	9,000	—	11,000	—	11,000
Stock-based compensation expense	—	—	336,000	—	336,000
Issue stock for employee stock purchase plan	44,000	—	103,000	—	103,000
Net loss	—	—	—	(7,665,000)	(7,665,000)
Balance at June 30, 2019	10,898,000	$ 1,000	$ 86,933,000	$ (88,279,000)	$ (1,345,000)
Stock-based compensation expense	—	—	364,000	—	364,000
Net loss	—	—	—	(6,398,000)	(6,398,000)
Balance at September 30, 2019	10,898,000	$ 1,000	$ 87,297,000	$ (94,677,000)	$ (7,379,000)
Balance at January 1, 2020	34,274,000	$ 3,000	$ 106,188,000	$ (102,577,000)	$ 3,614,000
Stock-based compensation expense	—	—	328,000	—	328,000
Issue stock for warrant exercises	3,478,000	—	2,355,000	—	2,355,000
Net loss	—	—	—	(10,510,000)	(10,510,000)
Balance at March 31, 2020	37,752,000	$ 3,000	$ 108,871,000	$ (113,087,000)	$ (4,213,000)
Stock-based compensation expense	—	—	328,000	—	328,000
Issue common stock, net of issuance costs	16,896,000	2,000	16,364,000	—	16,366,000
Issue stock for employee stock purchase plan	44,000		21,000	—	21,000
Issue stock for covenant waiver	873,000		300,000	—	300,000
Issue stock for warrant exercises	36,410,000	4,000	1,105,000	—	1,109,000
Net loss	—			(8,074,000)	(8,074,000)
Balance at June 30, 2020	91,975,000	$ 9,000	$ 126,989,000	$ (121,161,000)	$ 5,837,000
Stock-based compensation expense	—		447,000	—	447,000
Issue stock for warrant exercises	50,205,000	5,000	15,078,000	—	15,083,000
Issue stock for acquisition	6,168,000	1,000	4,100,000	—	4,101,000
Net loss				(10,792,000)	(10,792,000)
Balance at September 30, 2020	148,348,000	$ 15,000	$ 146,614,000	$ (131,953,000)	$ 14,676,000

See accompanying notes to the condensed consolidated financial statements

BIONANO GENOMICS, INC.
Condensed Consolidated Statements of Cash Flows
(Unaudited)

	Nine Months Ended September 30,	
	2020	**2019**
Operating activities:		
Net loss	$ (29,376,000)	$ (21,914,000)
Adjustments to reconcile net loss to net cash used by operating activities:		
Depreciation and amortization expense	909,000	815,000
Non-cash interest	952,000	523,000
Stock-based compensation	1,103,000	990,000
Provision for bad debt expense	1,334,000	—
Loss on debt extinguishment	—	1,333,000
Changes in operating assets and liabilities:		
Accounts receivable	1,709,000	(1,486,000)
Inventory	(3,612,000)	(1,886,000)
Prepaid expenses and other current assets	(566,000)	98,000
Accounts payable	925,000	1,042,000
Accrued expenses and contract liabilities	412,000	337,000
Net cash used in operating activities	(26,210,000)	(20,148,000)
Investing Activities:		
Lineagen acquisition, net of cash acquired	(2,450,000)	—
Purchases of property and equipment	—	(38,000)
Net cash used in investing activities	(2,450,000)	(38,000)
Financing activities:		
Proceeds from issuance of term debt, net of issuance costs	—	19,169,000
Repayment of term-loan debt	(5,000,000)	(10,812,000)
Proceeds from PPP Loan	1,775,000	—
Proceeds from borrowing from line of credit	761,000	3,084,000
Repayments of borrowing from line of credit	(2,258,000)	(2,131,000)
Proceeds from sale of common stock, net of offering costs	16,366,000	2,410,000
Proceeds from sale of common stock under employee stock purchase plan	21,000	103,000
Proceeds from warrant and option exercises	18,551,000	65,000
Net cash provided by financing activities	30,216,000	11,888,000
Net decrease in cash and cash equivalents	1,556,000	(8,298,000)
Cash and cash equivalents at beginning of period	17,311,000	16,523,000
Cash and cash equivalents at end of period	$ 18,867,000	$ 8,225,000
Supplemental cash flow disclosures:		
Cash paid for interest	$ 991,000	$ 1,036,000
Supplemental disclosure of non-cash investing and financing activities:		
Fair value of common stock issued related to Lineagen acquisition	$ 4,100,000	$ —
Property and equipment costs incurred but not paid included in accounts payable and accrued expenses	$ —	$ 8,000
Fair value of warrants issued with debt	$ —	$ 630,000
Transfer of instruments and servers from property and equipment into inventory	$ 134,000	$ 360,000
Transfer of instruments and servers from inventory to property and equipment	$ 2,618,000	$ —
Issue common stock for covenant waiver	$ 300,000	
Fair value of stock issued with debt	$ —	$ 202,000
Deferred equity issuance costs in accounts payable and accrued liabilities	$ —	$ 197,000
Debt issuance costs in accounts payable and accrued liabilities	$ —	$ 35,000

See accompanying notes to the condensed consolidated financial statements

BIONANO GENOMICS, INC.
NOTES TO CONDENSED FINANCIAL STATEMENTS
(Unaudited)

1. Organization and Basis of Presentation

Description of Business

Bionano Genomics, Inc. (collectively, with its consolidated subsidiaries, the “Company”) is a life sciences instrumentation company in the genome analysis space that provides tools and services based on its Saphyr system to scientists and clinicians conducting genetic research and patient testing, and provides diagnostic testing for those with autism spectrum disorder (“ASD”) and other neurodevelopmental disabilities through newly acquired Lineagen, Inc., a wholly owned subsidiary of the Company (“Lineagen”). The Company currently develops and markets the Saphyr system, a platform for ultra-sensitive and ultra-specific structural variation detection that is designed to enable researchers and clinicians to accelerate the search for new diagnostics and therapeutic targets and to streamline the study of changes in chromosomes, which is known as cytogenetics. The Saphyr system is comprised of an instrument, chip consumables, reagents and a suite of data analysis tools, and genome analysis services to provide access to data generated by the Saphyr system for researchers who want to evaluate Saphyr data quickly and with a low up-front investment.

Basis of Presentation

The accompanying financial information has been prepared by the Company pursuant to the rules and regulations of the Securities and Exchange Commission (the "SEC") for interim reporting purposes. The condensed consolidated financial statements are unaudited. The unaudited condensed consolidated financial statements reflect, in the opinion of the Company's management, all adjustments, consisting of only normal recurring adjustments, necessary for a fair presentation of financial position, results of operations, changes in equity, and comprehensive loss and cash flows for each period presented in accordance with United States generally accepted accounting principles (“U.S. GAAP”). All intercompany transactions and balances have been eliminated. These interim condensed consolidated financial statements should be read in conjunction with the audited consolidated financial statements and related notes thereto included in the Company's Annual Report on Form 10-K for the year ended December 31, 2019. Certain prior year numbers were reclassified to conform with current year presentation. Such reclassification had no impact on the previously reported results of operations.

Going Concern

The Company has experienced recurring net losses from operations, negative cash flows from operating activities, financial covenant breaches, and significant accumulated deficit since its inception and expects to continue to incur net losses into the foreseeable future. The Company had an accumulated deficit of $132.0 million as of September 30, 2020. The Company had cash and cash equivalents of $18.9 million as of September 30, 2020. Management expects operating losses and negative cash flows to continue for at least the next year as the Company continues to incur costs related to research and commercialization efforts. As a result, there is substantial doubt about the Company’s ability to continue as a going concern within twelve months after the date these financial statements are issued.

The Company is subject to additional risks and uncertainties as a result of the continued spread of COVID-19 and uncertain market conditions, which could continue to have a material impact on the Company’s business and financial results. The Company closely monitors and complies with various applicable guidelines and legal requirements in the jurisdictions in which it operates, which may continue to result in reduced business operations in response to new or existing stay-at-home orders, travel restrictions and other social distancing measures. The Company’s manufacturing partners, suppliers, and customers, have implemented similar operational reductions. This overall reduction in activity has contributed to a decrease in sales which has negatively impacted the Company’s first, second and third quarter 2020 financial results. The future effects of COVID-19 are unknown and the Company’s financial results may continue to be negatively affected in the future.

There may be long-term negative effects of the COVID-19 pandemic, even after it has subsided. Specifically, product demand may be reduced due to an economic recession, a decrease in corporate capital expenditures, prolonged unemployment, reduction in consumer confidence, or any similar negative economic condition. These negative effects could have a material impact on the Company’s operations, business, earnings, and liquidity.

The Company’s ability to continue as a going concern is dependent upon its ability to raise additional funding. The Company will need to raise additional capital through equity offerings or debt financings to fulfill its operating and capital requirements for at least 12 months and to maintain compliance with certain financial covenants in the Innovatus LSA (as defined below). To raise such additional capital, the Company may pursue equity or debt financings, strategic collaborations, licensing arrangements, asset sales, or other arrangements. The Company may not be able to secure such financing in a timely manner or on favorable terms, if at all, and may not be able to comply with current covenants, which could cause an acceleration of its

debt. For example, for the three months ended September 30, 2020, the Company was not in compliance with its revenue covenant under the Innovatus LSA and, while the Company is currently in discussions with Innovatus, the Company has not yet secured a waiver for its noncompliance.

Furthermore, if the Company issues equity securities to raise additional funds, its existing stockholders may experience dilution, and the new equity securities may have rights, preferences and privileges senior to those of the Company's existing stockholders. If the Company raises additional funds through collaboration, licensing or other similar arrangements, it may be necessary to relinquish valuable rights to its products or proprietary technologies or grant licenses on terms that are not favorable to the Company. If the Company does not have or is not able to obtain sufficient funds, it may have to reduce commercialization efforts or delay its development of new products. The Company also may have to reduce marketing, customer support or other resources devoted to its products or cease operations. As a result, the aforementioned conditions, among others, raise substantial doubt about the Company's ability to continue as a going concern within one year after the date these financial statements are issued. Such financial statements have been prepared on a going concern basis, which contemplates the realization of assets and settlement of liabilities in the normal course of business, and do not include any adjustments to reflect the outcome of this uncertainty.

As a publicly-traded company listed on The Nasdaq Stock Market LLC ("Nasdaq"), the Company is required to comply with rules and regulations issued by Nasdaq. If the Company is not able to comply with such rules and regulations, which it has not met from time-to-time since the Company's initial public offering in August 2018, the Company may not be able to maintain its Nasdaq listing.

In April 2020, the Company received a Notice (the "Notice") from The Nasdaq Stock Market LLC ("Nasdaq") advising the Company that for 30 consecutive trading days preceding the date of the Notice, the bid price of the Company's common stock had closed below the $1.00 per share minimum required for continued listing on The Nasdaq Capital Market pursuant to Nasdaq Listing Rule 5550(a)(2) (the "Minimum Bid Price Requirement"). The Notice has no effect on the listing of the Company's common stock at this time, and the Company's common stock continues to trade on The Nasdaq Capital Market under the symbol "BNGO."

Under Nasdaq Listing Rule 5810(c)(3)(A), the Company has 180 calendar days following the date of the Notice to regain compliance with the Minimum Bid Price Requirement. However, due to recent extraordinary market conditions, Nasdaq has determined to toll the compliance period for the Minimum Bid Price Requirement through June 30, 2020 (the "Tolling Period"). As a result, the compliance Period will end on December 28, 2020 (the "Compliance Period") instead of October 20, 2020. If at any time during the Tolling Period or the Compliance Period the closing bid price of the Company's common stock is at least $1.00 for a minimum of 10 consecutive business days, the Company will regain compliance with the Minimum Bid Price Requirement and its common stock will continue to be eligible for listing on The Nasdaq Capital Market absent noncompliance with any other requirement for continued listing.

If the Company does not regain compliance with the Minimum Bid Price Requirement by the end of the Compliance Period, the Company may be afforded an additional 180 calendar days to regain compliance with the Minimum Bid Price Requirement (the "Additional Compliance Period") if on the last day of the Compliance Period the Company is in compliance with the market value of publicly held shares requirement for continued listing as well as all other standards for initial listing of its common stock on The Nasdaq Capital Market (other than the Minimum Bid Price Requirement), unless the Company does not indicate its intent to cure the deficiency, or if it appears to Nasdaq that it is not possible for the Company to cure the deficiency.

If the Company does not regain compliance with the Minimum Bid Price Requirement by the end of the Compliance Period, or the Additional Compliance Period, if applicable, the Company's common stock will be subject to delisting. We intend to monitor the closing bid price of our common stock and may, if appropriate, consider implementing available options to regain compliance with the Minimum Bid Price Requirement.

Significant Accounting Policies

During the nine months ended September 30, 2020, there were no changes to the Company's significant accounting policies as described in the Company's Annual Report on Form 10-K for the year ended December 31, 2019, except as described below.

Lineagen Acquisition

On August 21, 2020, the Company, Alta Merger Sub, Inc., a wholly owned subsidiary of the Company (“Merger Sub”), Lineagen, a Delaware corporation, and Michael S. Paul, Ph.D., solely in his capacity as exclusive agent and attorney-in-fact of the securityholders of Lineagen, entered into an Agreement and Plan of Merger (the “Merger Agreement”). Pursuant to the terms and conditions of the Merger Agreement, Merger Sub merged with and into Lineagen (the “Merger”) whereupon the separate corporate existence of Merger Sub ceased, with Lineagen continuing as the surviving corporation of the Merger as a wholly owned subsidiary of the Company.

The Company accounted for its acquisition of Lineagen using the acquisition method of accounting pursuant to *Accounting Standards Codification Topic 805, Business Combinations ("ASC 805")*. Under ASC 805, the tangible and identifiable intangible assets acquired and liabilities assumed in a business combination are recorded based on their estimated fair values as of the acquisition date. Any excess purchase price over the estimated fair value assigned to the tangible and identifiable intangible assets acquired and liabilities assumed is recorded to goodwill.

The Company based the estimated fair value of identifiable intangible assets acquired on independent valuations that use information and assumptions provided by the Company’s management. The use of alternative valuation assumptions, including estimated revenue projections, growth rates, cash flows, discount rates and useful lives could result in different purchase price allocations and amortization expense in current and future periods.

Under ASC 805, acquisition-related transaction costs (such as advisory, legal, valuation, other professional fees) are expensed in the statements of operations in the periods incurred.

Long-Lived Assets (including Finite-Lived Purchased Intangible Assets)

Long-lived assets consist of property and equipment and purchased finite-lived intangible assets. The Company records property and equipment at cost, and records purchased finite-lived intangible assets based on their fair values at the date of acquisition. Property and equipment generally consist of laboratory equipment, computer and office equipment, furniture and fixtures, and leasehold improvements. Property and equipment are recorded at cost and depreciated or amortized using the straight-line method over the estimated useful lives of the assets (generally three to five years, or the remaining term of the lease for leasehold improvements, whichever is shorter). Repairs and maintenance costs are charged to expense as incurred.

Intangible assets acquired in a business combination are recognized separately from goodwill and are initially recognized at their fair value at the acquisition date (which is regarded as their cost). Intangible assets are amortized over the estimated useful life of the asset on a basis that approximates the pattern of economic benefit. Intangible assets are reviewed for impairment if indicators of potential impairment exist. There was no indication of impairment of intangible assets for any of the periods presented.

As a result of the Lineagen acquisition the Company recorded intangible assets, which consist of a trade name intangible and customer relationship intangible, which will be amortized using the straight-line method over the estimated useful lives of the assets of five years, which is consistent with the pattern of economic benefit of the assets.

If the Company identifies a change in the circumstances related to its long-lived assets, such as property and equipment and intangible assets (other than goodwill), that indicates the carrying value of any such asset may not be recoverable, the Company will perform an impairment analysis. A long-lived asset (other than goodwill) is not recoverable when the undiscounted cash flows expected to be generated by the asset (or asset group) are less than the asset’s carrying amount. Any required impairment loss would be measured as the amount by which the asset’s carrying value exceeds its fair value, and would be recorded as a reduction in the carrying value of the related asset and a charge to operating expense.

Goodwill

Goodwill arises when the purchase price of an acquired business exceeds the fair value of the identifiable net assets acquired, with such excess recorded as goodwill on the balance sheet. Goodwill is not subsequently amortized. Goodwill is reviewed for impairment annually (during the fourth quarter) or more frequently if indications of impairment exist. In testing goodwill for impairment, the Company will first assess qualitative factors to determine whether it is more likely than not that the fair value of the reporting unit is less than its carrying amount. If the qualitative assessment indicates that it is more likely than not that the fair value of the reporting unit is less than its carrying value, then the Company will perform a quantitative impairment analysis by comparing the fair value of the reporting unit to the carrying value of the reporting unit, including goodwill. An impairment charge for goodwill is recognized for the amount by which the carrying value of the reporting unit exceeds its fair value, not to exceed the total goodwill allocated to the reporting unit.

Revenue Recognition for Diagnostic Services

The Company generates revenue by performing diagnostic testing services. Revenue from the completion of diagnostic testing services is recorded at the billed value less estimated contractual adjustments. The Company performs its obligation under a contract with a customer by processing diagnostic tests and communication of test results, which is the point at which the Company has determined control is transferred to the customer for revenue recognition purposes.

Recently Issued But Not Yet Adopted Accounting Pronouncements

In April 2012, the Jump-Start Our Business Startups Act (the "JOBS Act") was signed into law. The JOBS Act contains provisions that, among other things, reduce certain reporting requirements for an emerging growth company. As an emerging growth company, the Company may elect to adopt new or revised accounting standards when they become effective for non-public companies, which typically is later than when public companies must adopt the standards. The Company has elected to take advantage of the extended transition period afforded by the JOBS Act and, as a result, will comply with new or revised accounting standards on the relevant dates on which adoption of such standards is required for emerging growth companies, which are the dates included below.

In February 2015, the FASB issued Accounting Standards Update ("ASU") 2016-2, *Leases (Topic 842)*, which amends the accounting guidance for leases and increases transparency and comparability among organizations by recognizing lease assets and lease liabilities on the balance sheet and requires disclosures of key information about leasing arrangements. ASU 2016-2 initially mandated a modified retrospective transition method, however, in July 2018, the FASB issued ASU 2018-11, *Leases (Topic 842): Targeted Improvements*, which amends ASU 2016-2, permitting entities the option to adopt this standard prospectively with a cumulative-effect adjustment to opening equity in the year of adoption and include required disclosures for prior periods but will not restate prior periods. The Company anticipates implementing the accounting guidance for leases using the alternative method beginning with the annual reporting period ending December 31, 2022 and interim reporting periods in 2023. The Company is in the process of evaluating the impact of adoption of the lease accounting guidance on the consolidated financial statements.

In June 2016, the FASB issued ASU No. 2016-13, *Financial Instruments - Credit Losses: Measurement of credit Losses on Financial Instruments (ASU 2016-13)*, which amends the impairment model by requiring entities to use a forward looking approach based on expected losses to estimate credit losses on certain types of financial instruments, including trade receivables and available-for-sale debt securities. The standard is effective for the company beginning in the first quarter of 2023, with early adoption permitted. the Company is currently evaluating the expected impact of *ASU 2016-13* on its financial statements.

In August 2020, the FASB issued ASU No. 2020-06, *Debt - Debt with Conversion and other Options (Subtopic 470-20) and Derivatives and Hedging - Contracts in Entity's Own Equity (Subtopic 815-40): Accounting for Convertible Instruments and Contracts in an Entity's Own Equity ("ASU 2020-06")*, which simplifies accounting for convertible instruments by removing major seperation models required under current U.S. GAAP. *ASU 2020-06* removes certain settlement conditions that are required for equity contracts to qualify for the derivative scope exceptions and also simplifies the diluted earnings per share calculation in certain areas. The standard is effective for public business entities, excluding entities eligible to be smaller reporting companies as defined by the SEC, for fiscal years and interim periods within those fiscal years beginning after December 15, 2021. For all other entities, the standard will be effective for fiscal years beginning after December 15, 2023. Early adoption is permitted, but no earlier than fiscal years beginning after December 15, 2020, and adoption must be as of the beginning of the Company's annual fiscal year. The company is currently evaluating the impact of this standard on its consolidated financial statements and related disclosures.

2. Net Loss Per Share

Basic net loss per share is calculated by dividing the net loss by the weighted-average number of common shares outstanding for the period. Diluted net loss per share is computed by dividing the net loss by the weighted average number of common shares and common share equivalents outstanding for the period. Common stock equivalents are only included when their effect is dilutive. The Company's potentially dilutive securities which include warrants and outstanding stock options under the Company's equity incentive plan have been excluded from the computation of diluted net loss per share as they would be anti-dilutive to the net loss per share. For all periods presented, there is no difference in the number of shares used to calculate basic and diluted shares outstanding due to the Company's net loss position.

Potentially dilutive securities not included in the calculation of diluted net loss per share attributable to common stockholders because to do so would be anti-dilutive are as follows (in common stock equivalent shares):

	September 30, 2020	September 30, 2019
Stock options	5,331,000	1,844,000
Warrants	29,709,000	4,224,000
Total	35,040,000	6,068,000

3. Revenue Recognition

Revenue by Source

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	2019	2020	2019
Instruments	$ 724,000	$ 2,370,000	$ 1,487,000	$ 5,262,000
Consumables	856,000	792,000	2,016,000	1,608,000
Total product revenue	1,580,000	3,162,000	3,503,000	6,870,000
Service and other	616,000	151,000	1,010,000	470,000
Total revenue	$ 2,196,000	$ 3,313,000	$ 4,513,000	$ 7,340,000

Service and other for the three and nine months includes diagnostics for the period from August 21, 2020 through September 30, 2020.

Revenue by Geographic Location

	Three Months Ended September 30,				Nine Months Ended September 30,			
	2020		2019		2020		2019	
	$	%	$	%	$	%	$	%
North America	$ 874,000	40 %	$ 1,831,000	56 %	$ 2,388,000	53 %	$ 4,050,000	55 %
EMEIA	1,204,000	55 %	943,000	28 %	1,908,000	42 %	2,367,000	32 %
Asia Pacific	118,000	5 %	539,000	16 %	217,000	5 %	923,000	13 %
Total	$ 2,196,000	100 %	$ 3,313,000	100 %	$ 4,513,000	100 %	$ 7,340,000	100 %

The table above provides revenue from contracts with customers by source and geographic region (based on the customer's billing address) on a disaggregated basis. North America consists of the United States and Canada. EMEIA consists of Europe, the Middle East, India and Africa. Asia Pacific includes China, Japan, South Korea, Singapore and Australia. For the three months ended September 30, 2020 and 2019, the United States represented 40% and 48% of total revenue, and for the nine months ended September 30, 2020 and 2019, 51% and 52%, respectively.

Remaining Performance Obligations

As of September 30, 2020, the estimated revenue expected to be recognized in the future related to performance obligations that are unsatisfied was $500,000. These remaining performance obligations primarily relate to extended warranty and support and maintenance obligations. The Company expects to recognize approximately 27.6% of this amount as revenue during the remainder of 2020, 61.2% in 2021, 7.6% in 2022, and 3.6% in 2023. Warranty revenue is included in Service and other revenue.

The Company recognized revenue of $66,000 and $39,000 during the three months ended September 30, 2020 and 2019, respectively, and revenue of $299,000 and $117,000 during the nine months ended September 30, 2020 and 2019, respectively, which was included in the contract liability balance at the end of the previous year.

Concentrations

As of September 30, 2020 and December 31, 2019, one customer represented 9% and 10%, respectively, of the Company's accounts receivable balance.

4. Balance Sheet Account Details

	September 30, 2020	December 31, 2019
Accounts receivable, net:		
Accounts receivable, trade[1]	$ 5,749,000	$ 6,889,000
Less allowance for doubtful accounts	(1,889,000)	(555,000)
	$ 3,860,000	$ 6,334,000

[1]Includes $635,000 of accounts receivable from diagnostic services.

The Company extends credit to its customers in the normal course of business based upon an evaluation of each customer's credit history, financial condition, and other factors. Estimates of allowances for doubtful accounts are determined by evaluating individual customer circumstances, historical payment patterns, length of time past due, and economic and other factors. During the nine months ended September 30, 2020, the Company recorded bad debt expense of $1,334,000, which is included in selling, general and administrative expenses.

	September 30, 2020	December 31, 2019
Inventory:		
Materials and supplies	$ 2,622,000	$ 951,000
Finished goods	1,971,000	2,493,000
	$ 4,593,000	$ 3,444,000

5. Debt

Paycheck Protection Program

On April 17, 2020, the Company received loan proceeds of approximately $1.8 million (the "PPP Loan") pursuant to the Paycheck Protection Program ("the PPP") under the Coronavirus Aid, Relief, and Economic Security Act (the "CARES Act") administered by the U.S. Small Business Administration (the "SBA").

The PPP Loan is scheduled to mature on April 17, 2022 (the "Maturity Date"), bears interest at a rate of 1.00% per annum, and is subject to the standard terms and conditions applicable to loans administered by the SBA under the CARES Act.

The PPP Loan is evidenced by a promissory note, dated as of April 17, 2020, issued by East West Bank (the "PPP Lender"), which contains customary events of default relating to, among other things, payment defaults and breaches of representations and warranties. Upon an event of default under the PPP Note, the PPP Lender may, among other things, require immediate payment of all amounts owing under the PPP Note or file suit and obtain judgment. Under the terms of the CARES Act, recipients of loans under the PPP can apply for and be granted forgiveness for all or a portion of such loan granted under the PPP. Such forgiveness will be determined, subject to limitations, based on the use of loan proceeds for payment of payroll costs and certain other eligible costs (the "Eligible Costs"). Pursuant to the Paycheck Protection Program Flexibility Act (the "PPPFA"), enacted on June 5, 2020, the Company was permitted to use loan proceeds on Eligible Costs through October 2, 2020, or the date that was 24 weeks from the PPP Loan origination date (the "Covered Period"). The Company is continuing to evaluate guidance released by the SBA regarding qualification for forgiveness of the PPP Loan, however, no assurance is provided that forgiveness for any portion of the Company's PPP Loan will be obtained.

Under the PPPFA, payments of principal and interest due under the PPP Loan are deferred until the date on which the SBA remits the forgiveness amount, if any, back to the PPP Lender, or if forgiveness isn't sought within 10 months after the last day of the Covered Period, until the date that is 10 months from the last day of the Covered Period. The amounts outstanding under the PPP Loan may be prepaid by the Company at any time prior to maturity without penalty.

In order to apply for the PPP Loan, the Company was required to certify, among other things, that the current economic uncertainty made the PPP Loan request necessary to support the Company's ongoing operations. This certification further

required the Company to take into account the maintenance of its workforce, the Company's need for additional funding to continue operations, and the Company's ability to access alternative forms of capital in the current market environment to offset the effects of the COVID-19 pandemic.

Loan Agreements

The carrying value of the Company's debt for the periods presented was as follows:

	September 30, 2020	December 31, 2019
Term Loans	$ 15,860,000	$ 20,473,000
Revolver	—	1,498,000
PPP Loan	1,775,000	—
Total principal	17,635,000	21,971,000
Less unamortized debt issuance costs	(1,621,000)	(1,886,000)
Total carrying value of debt	$ 16,014,000	$ 20,085,000

In March 2019, the Company entered into a Loan and Security Agreement (the "Innovatus LSA") by and among Innovatus Life Sciences Lending Fund I, LP, a Delaware limited partnership ("Innovatus"), as collateral agent and the lenders listed on Schedule 1.1 thereto, including East West Bank. The Innovatus LSA provided a first term loan of $17.5 million, a second term loan of $2.5 million and a third term loan of $5.0 million (collectively, "Term Loans") if the Company satisfied certain funding conditions. Interest on the Term Loans is due on the first of each month at a rate of 10.25% per annum in cash or a discounted rate of 7.25% in cash with 3.0% of the 10.25% per annum rate added to the principal of the loan and subject to accruing interest through the end of the interest only payment period, which ends March 1, 2022. At inception, the Company elected to pay interest in cash at a rate of 7.25% per annum and have 3.0% per annum of the interest added back to the outstanding principal. As of September 30, 2020, the effective interest rate, including debt issuance costs, for Term Loans was 16.7%. Beginning in April 2022, the Company must make 24 equal monthly payments of principal and interest with a final maturity date in March 2024, which may be earlier due to an event of default if not cured within time specified.

The Innovatus LSA also provides for a revolving line of credit in an amount not to exceed $5.0 million (the "Revolver"). The Company may repay and reborrow amounts under the Revolver at any time prior to the March 1, 2024 maturity date without penalty or premium. The outstanding balance of amounts borrowed under the Revolver bears interest at a rate equal to 2.0% above the prime rate, per annum, as specified in the terms of the Revolver.

The Innovatus LSA is collateralized by substantially all of the Company's assets, including its intellectual property. The Innovatus LSA requires the Company to comply with various affirmative and negative covenants, including: (1) a liquidity covenant requiring the Company to maintain a minimum cash balance at all times in a collateral account; (2) a revenue covenant requiring the Company to meet certain minimum revenue targets measured at the end of each calendar quarter. The Innovatus LSA also includes standard events of default, including a provision that Innovatus could declare an event of default upon the occurrence of any event that it interprets as having a material adverse change in the Company's business, operations, or condition, a material impairment on the Company's ability to pay the secured obligations under the Innovatus LSA, or upon a material adverse effect on the collateral under the agreement, thereby requiring us to repay the loan immediately, together with a prepayment fee and other applicable fees. As of September 30, 2020, the Company has not received any notification or indication from Innovatus to invoke the material adverse change clause. However, due to the Company's current cash flow position and the substantial doubt about its ability to continue as a going concern, the entire principal amount of the Term Loans are presented as short-term. The Company will continue to evaluate the debt classification on a quarterly basis and evaluate for reclassification in the future should its financial condition improve.

As of December 31, 2019, the Company did not achieve certain financial covenants under the Innovatus LSA. As a result, in March 2020, the Company and Innovatus entered into an amendment to the Innovatus LSA (the "Second Amendment") to, among other things: (i) waive the events of default from not achieving the specific financial covenants for the December 31, 2019 measurement date, (ii) require an immediate partial repayment of $2.1 million, (iii) require an additional partial repayment of $2.9 million on the earlier of completion of an Equity Event (as defined in the Second Amendment), or April 30, 2020, (iv) modify the liquidity covenant, such that the Company's minimum cash balance shall vary based on outstanding borrowing capacity under the Revolver (provided, however, that the Company shall maintain a minimum cash balance of $2 million at any given time), (v) reduce the dollar amount of certain minimum revenue covenants measured as of the end of each

calendar quarter (each, a “Revenue Covenant”) and (vi) modify the terms of certain events of default. For example, the Second Amendment provides for a cure period in connection with the breach of certain minimum revenue financial covenants, as long as the Company submits an updated management plan and financial projections, which are subject to Innovatus approval, and completes a Qualified Financing Event (as defined in the Second Amendment) within 45 days of such breach.

In connection with the Second Amendment, the Company was obligated to pay Innovatus a waiver fee in the amount of $200,000 and a prepayment fee of $100,000, payable in cash or in shares of the Company’s common stock at the Company's election, no later than following completion of the Equity Event. As described in Note 6 below, the Company completed a follow-on public offering in April 2020 that constituted an Equity Event under the Second Amendment. A portion of the proceeds from the follow-on offering were used to pay-down $2.9 million of principal balance outstanding under the Term Loans in accordance with the Second Amendment. In addition, the Company issued 872,601 shares of its common stock to Innovatus to satisfy the $200,000 waiver fee and $100,000 prepayment fee due under the Second Amendment. Also pursuant to the Second Amendment, the Company subsequently registered such shares for resale on a registration statement on Form S-3 (the “Registration Statement”) filed with the Securities and Exchange Commission on June 22, 2020 and declared effective on July 7, 2020. We have not and will not receive any of the proceeds from the offering described in the Registration Statement.

In connection with the Merger, the Company and Lineagen entered into a Third Amendment (the “Third Amendment”) to the Innovatus LSA. Among other things, the Third Amendment adds Lineagen as a “Borrower” under the Innovatus LSA and updates certain financial covenants in light of Lineagen becoming a wholly owned subsidiary of the Company.

For the three months ended September 30, 2020, the Company was not in compliance with their revenue covenant under the Innovatus LSA.

6. Stockholders’ Equity and Stock-Based Compensation

Follow-on Public Offering

In April 2020, the Company completed an underwritten public offering of 16,896,000 shares of its common stock and, to certain investors, pre-funded warrants to purchase 37,650,000 shares of its common stock, and accompanying common warrants to purchase up to an aggregate of 54,546,000 shares of its common stock. Each share of common stock and pre-funded warrant to purchase one share of common stock was sold together with a common warrant to purchase one share of common stock. The public offering price of each share of common stock and accompanying common warrant was $0.33 and $0.329 for each pre-funded warrant. The pre-funded warrants are immediately exercisable at a price of $0.001 per share of common stock. The common warrants are immediately exercisable at a price of $0.33 per share of common stock and will expire five years from the date of issuance. The shares of common stock and pre-funded warrants, and the accompanying common warrants, were issued separately and were immediately separable upon issuance. The gross proceeds to the Company were approximately $18.0 million before deducting underwriting discounts and commissions and other offering expenses of $1.6 million.

Stock Warrants

A summary of the Company’s warrant activity for the nine months ended September 30, 2020 was as follows:

	Shares of Stock under Warrants	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Term	Aggregate Intrinsic Value
Outstanding at January 1, 2020	24,406,000	$ 1.76	4.82	$ 7,933,000
Granted	95,396,000	0.22	4.53	
Exercised	(90,093,000)	0.21		37,150,000
Canceled	—			
Outstanding at September 30, 2020	29,709,000	$ 1.54	4.11	$ 1,813,000
Vested and exercisable at September 30, 2020	29,709,000	$ 1.54	4.11	$ —

Shelf Registration Statement and At-the-Market Facility

In August 2020, the Company filed a shelf registration statement on Form S-3 with the SEC covering the offering, issuance and sale of up to $125.0 million of the Company's securities, including up to $40.0 million of common stock pursuant to an at-the-market facility ("ATM") with Ladenburg Thalmann & Co. Inc. acting as sales agent. As of September 30, 2020, the Company had not sold any shares of common stock under the ATM.

Stock-Based Compensation

Stock Options

A summary of the Company's stock option activity under the Company's equity incentive plans for the nine months ended September 30, 2020 was as follows:

	Shares of Stock under Stock Options	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Term	Aggregate Intrinsic Value
Outstanding at January 1, 2020	1,743,000	$ 5.73	8.2	$ 4,000
Granted	4,250,000	0.67		
Exercised	—	—		$ —
Canceled	(662,000)	3.52		
Outstanding at September 30, 2020	5,331,000	$ 1.97	8.96	$ 353,000
Vested and exercisable at September 30, 2020	1,119,000	$ 5.10	7.31	$ —

For the three months ended September 30, 2020 and 2019, the Company granted to its employees options to purchase 2,659,000 and 29,800 shares with a weighted average exercise price of $0.55 and $2.33 per share, respectively. For the nine months ended September 30, 2020 and 2019, the Company granted to its employees options to purchase 4,250,000 and 706,640 shares with a weighted average exercise price of $0.67 and $3.82 per share, respectively.

For the three months ended September 30, 2020 and 2019, the weighted-average grant date fair value of stock options granted was $0.35 and $1.42 per share, respectively. For the nine months ended September 30, 2020 and 2019, the weighted-average grant date fair value of stock options granted was $0.43 and $2.19 per share, respectively.

The Company recognized stock-based compensation expense for the periods presented were as follows:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	2019	2020	2019
Research and development	$ 122,000	$ 59,000	$ 255,000	$ 169,000
General and administrative	325,000	305,000	848,000	821,000
Total stock-based compensation expense	$ 447,000	$ 364,000	$ 1,103,000	$ 990,000

The weighted-average assumptions used in the Black-Scholes option pricing model to determine the fair value of the employee stock option grants during the periods presented were as follows:

	Three Months Ended September 30,		Nine months Ended September 30,	
	2020	2019	2020	2019
Risk-free interest rate	0.4 %	1.8 %	0.8 %	2.4 %
Expected volatility	77.9 %	68.2 %	74.8 %	68.2 %
Expected term (in years)	5.5	6.1	5.9	5.1
Expected dividend yield	0.0 %	0.0 %	0.0 %	0.0 %

7. Legal Proceedings

The Company is subject to potential liabilities under various claims and legal actions that are pending or may be asserted. These matters arise in the ordinary course and conduct of the business. The Company intends to continue to defend itself vigorously in such matters. The Company regularly assesses contingencies to determine the degree of probability and range of possible loss for potential accrual in the financial statements. An estimated loss contingency is accrued in the financial statements if it is probable that a liability has been incurred and the amount of the loss can be reasonably estimated. Based on the Company's assessment, it currently does not have any amount accrued as it is not a defendant in any claims or legal actions.

8. Income Taxes

The Company is subject to taxation in the United States, United Kingdom and various state jurisdictions. The Company computes its quarterly income tax provision by using a forecasted annual effective tax rate and adjusts for any discrete items arising during the quarter. The primary difference between the effective tax rate and the federal statutory tax rate relates to the full valuation allowance on the Company's U.S. net operating losses.

In response to the COVID-19 pandemic, the Coronavirus Aid, Relief and Economic Security Act ("CARES Act") was signed into law on March 27, 2020. The CARES Act, among other things, includes tax provisions relating to refundable payroll tax credits, deferment of employer's social security payments, net operating loss utilization and carryback periods, modifications to the net interest deduction limitations and technical corrections to tax depreciation methods for qualified improvement property (QIP). The CARES Act did not have a material impact on the Company's income tax provision for the three and nine months ended September 30, 2020.

9. Acquisition of Lineagen

On August 21, 2020, the Company, Merger Sub, Lineagen, and Michael S. Paul, Ph.D., solely in his capacity as exclusive agent and attorney-in-fact of the securityholders of Lineagen, entered into the Merger Agreement. Pursuant to the terms and conditions of the Merger Agreement, Merger Sub merged with and into Lineagen whereupon the separate corporate existence of Merger Sub ceased, with Lineagen continuing as the surviving corporation of the Merger as a wholly owned subsidiary of the Company.

Pursuant to the terms of the Merger Agreement, at the effective time of the Merger (the "Effective Time"), the shares of capital stock of Lineagen and all options of Lineagen that were issued and outstanding immediately prior to the Effective Time were automatically cancelled and extinguished without any payment with respect thereto. Certain holders of convertible notes and other indebtedness of Lineagen at the closing of the Merger (the "Closing") received common stock of the Company. The total number of shares of the Company's common stock issued or reserved for issuance as consideration for the Merger is 6,167,510 shares, subject to adjustment for cash, accounts receivable, unpaid indebtedness, unpaid transaction expenses and certain other liabilities of Lineagen (the "Merger Shares"). 925,126 of the Merger Shares (the "Escrowed Shares") will be held in an escrow fund for purposes of satisfying any post-closing purchase price adjustments and indemnification claims under the Merger Agreement.

Also as consideration for the Merger, pursuant to the Merger Agreement, the Company paid approximately $1.9 million in cash to certain creditors and assumed certain liabilities of Lineagen totaling approximately $2.9 million, reflective of the Company's preliminary estimate of the post-closing purchase price adjustment (which adjustment is subject to finalization pursuant to the terms of the Merger Agreement). In addition, on August 21, 2020, concurrent with the Closing, the Company paid approximately $1.1 million to satisfy all outstanding principal and accrued interest amounts due pursuant to that certain Promissory Note, dated April 22, 2020, by and between Lineagen and Silicon Valley Bank (the "Lineagen PPP Loan"), issued pursuant to the CARES Act administered by the SBA. The amount outstanding under the Lineagen PPP Loan previously accrued interest of 1.00% per annum and was subject to the standard terms and conditions applicable to loans administered by the SBA under the CARES Act. The Lineagen PPP Loan was repaid by the Company prior to maturity without penalty.

The Company accounted for its acquisition of Lineagen using the acquisition method of accounting pursuant to ASC 805. The tangible and identifiable intangible assets acquired and liabilities assumed were recorded at their estimated fair values as of the acquisition date, and the excess of the purchase price over the estimated fair value assigned to the tangible and identifiable intangible assets acquired and liabilities assumed was recorded to goodwill.

The purchase price allocation for the acquisition of Lineagen is preliminary and subject to revision as additional information about the fair value of assets and liabilities becomes available. As permitted under ASC 805, the Company is allowed a measurement period, which may not exceed one year, in which to complete its accounting for the acquisition. The Company has recognized provisional amounts for certain items, and subsequent adjustments during the measurement period to any of these items may affect the amount of goodwill recognized. In particular, the Company has not yet completed its accounting for any acquired tax liabilities.

As discussed above, the purchase price for the acquisition of Lineagen is subject to adjustment for cash, accounts receivable, unpaid indebtedness, unpaid transaction expenses and certain other liabilities of Lineagen. The following is the estimated purchase price for the acquisition of Lineagen:

Cash (a)	$	1,940,000
Cash transferred for repayment of Lineage PPP Loan (b)	$	1,104,000
Shares common stock issued as consideration (c)		6,167,510
Estimated shares of common stock to be returned to the Company (c)		(138,247)
Stock price per share on Effective Date	$	0.68
Value of estimated common stock consideration (c)	$	4,100,000
Total estimated purchase price (c)	$	7,144,000

(a) The Company paid approximately $1.9 million in cash to certain creditors of Lineagen.

(b) The Company paid approximately $1.1 million to satisfy all outstanding principal and accrued interest amounts due pursuant to the Lineagen PPP Loan.

(c) The total number of shares of the Company's common stock issued or reserved for issuance as consideration for the Merger was 6,167,510 shares. 925,126 of the Merger Shares will be held in an escrow fund for purposes of satisfying any post-closing purchase price adjustments and indemnification claims under the Merger Agreement. The total number of Merger Shares is subject to adjustment for cash, accounts receivable, unpaid indebtedness, unpaid transaction expenses and certain other liabilities of Lineagen. The value of the estimated common stock consideration and the total estimated purchase price incorporate the return of an estimated 138,247 Escrowed Shares to the Company based on a preliminary estimate of this adjustment.

The total estimated purchase price was allocated to Lineagen's tangible and identifiable intangible assets acquired and liabilities assumed on based on their estimated fair values as of the acquisition date, with the excess recorded as goodwill, as follows:

Cash and cash equivalents	$	596,000
Accounts receivable		569,000
Other assets		209,000
Property and equipment, net		111,000
Intangible assets		1,580,000
Goodwill		6,941,000
Accounts payable and other accrued liabilities		(2,862,000)
Net assets acquired	$	7,144,000

The acquisition date fair values of identifiable intangible assets acquired are as following:

Customer relationships	$	950,000
Trade name		630,000
Fair value of identifiable intangible assets	$	1,580,000

The customer relationships and trade name intangibles are both being amortized on a straight-line basis over their estimated useful lives of five years. Straight-line amortization was determined to be materially consistent with the pattern of expected use of the intangible assets.

The Company recognized $1.1 million of acquisition-related costs, including financial advisor fees, legal expenses and accounting fees during the nine months ended September 30, 2020. These costs are included in the condensed consolidated statement of operations in selling, general and administrative expense.

The amounts of revenue and net loss of Lineagen included in the Company's Services and Other Revenue on the condensed consolidated statement of operations from the acquisition date to September 30, 2020 are as follows (in thousands):

Revenue	$	445,000
Net loss	$	(330,000)

The unaudited pro forma financial information in the table below summarizes the combined results of operations for the Company and Lineagen as if the companies had been combined as of January 1, 2019. These amounts have been calculated after applying the Company's accounting policies and adjusting the results of Lineagen to reflect the additional amortization that would have been charged assuming the fair value adjustments to intangible assets had been applied on January 1, 2019. The following unaudited pro forma financial information is for informational purposes only and is not necessarily indicative of the results of operations that would have been achieved as if the acquisition had taken place as of January 1, 2019.

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	2019	2020	2019
Revenue	$ 3,018,000	$ 5,123,000	$ 7,948,000	$ 13,287,000
Net loss	(10,087,000)	(7,588,000)	(30,375,000)	(26,892,000)
Basic and diluted net loss per share	$ (0.07)	$ (0.45)	$ (0.33)	$ (1.61)

ITEM 2. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with our unaudited consolidated financial statements and related notes included in this Quarterly Report on Form 10-Q and the audited consolidated financial statements and notes thereto as of and for the year ended December 31, 2019 and the related Management's Discussion and Analysis of Financial Condition and Results of Operations, both of which are contained in our Annual Report on Form 10-K, or our Annual Report, filed with the Securities and Exchange Commission, or the SEC, on March 10, 2020. Unless the context requires otherwise, references in this Quarterly Report on Form 10-Q to "we," "us," and "our" refer to Bionano Genomics, Inc. and its subsidiaries or, as the context may require, Bionano Genomics, Inc. only.

Forward-Looking Statements

The information in this discussion contains forward-looking statements and information within the meaning of Section 27A of the Securities Act of 1933, as amended, or the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act, which are subject to the "safe harbor" created by those sections. These forward-looking statements include, but are not limited to any statements concerning the potential effects of the COVID-19 pandemic on our business, statements concerning our strategy, future operations, future financial position, future revenues, projected costs, prospects and plans and objectives of management. The words "anticipates," "believes," "estimates," "expects," "intends," "may," "plans," "projects," "will," "would" and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. We may not actually achieve the plans, intentions, or expectations disclosed in our forward-looking statements and you should not place undue reliance on our forward-looking statements. Actual results or events could differ materially from the plans, intentions and expectations disclosed in the forward-looking statements that we make. These forward-looking statements involve risks and uncertainties that could cause our actual results to differ materially from those in the forward-looking statements, including, without limitation, the risks set forth in our filings with the SEC. The forward-looking statements are applicable only as of the date on which they are made, and we do not assume any obligation to update any forward-looking statements.

Overview

We are a life sciences instrumentation company in the genome analysis space that provides tools and services based on its Saphyr system to scientists and clinicians conducting genetic research and patient testing, and provides diagnostic testing for those with autism spectrum disorder ("ASD") and other neurodevelopmental disabilities through Lineagen, Inc., our wholly owned subsidiary ("Lineagen"). We develop and market the Saphyr system, a platform for ultra-sensitive and ultra-specific structural variation detection that enables researchers and clinicians to accelerate the search for new diagnostics and therapeutic targets and to streamline the study of changes in chromosomes, which is known as cytogenetics. Our Saphyr system comprises an instrument, chip consumables, reagents and a suite of data analysis tools, and genome analysis services to provide access to data generated by the Saphyr system for researchers who want to evaluate Saphyr data quickly and with a low up-front investment. Lineagen has been providing genetic testing services to families and their healthcare providers for over nine years and has performed over 65,000 tests for those with neurodevelopmental concerns.

We have incurred losses in each year since our inception. Our net losses were $10.8 million and $6.4 million for the three months ended September 30, 2020 and 2019, respectively, and $29.4 million and $21.9 million for the nine months ended September 30, 2020 and 2019, respectively. As of September 30, 2020, we had an accumulated deficit of $132.0 million.

We expect to continue to incur significant expenses and operating losses as we:

- expand our sales and marketing efforts to further commercialize our products;
- continue research and development efforts to improve our existing products;
- hire additional personnel;

- enter into collaboration arrangements, if any;
- add operational, financial and management information systems; and
- incur increased costs as a result of operating as a public company.

COVID-19 Overview

The COVID-19 pandemic, and the measures imposed to contain this pandemic in areas where we operate our business and elsewhere have disrupted and are expected to continue to impact our business. For example, to comply with applicable regulations and to safeguard the health and safety of our employees and customers, we temporarily reduced our on-site business operations, implemented work-from-home practices, and modified other business practices, including those related to employee travel and physical participation in meetings, events, and conferences. In addition, the quarantine of our personnel and the inability to access our facilities or customer sites adversely affected, and is expected to continue to adversely affect, our operations.

During the nine months ended September 30, 2020, we experienced a $2.8 million decrease in revenue, as compared to the same period of the prior year, which is largely due to the COVID-19 pandemic. While the COVID-19 pandemic did not prevent us from operating our business during the nine months ended September 30, 2020, we had to take steps to reduce our cash used in operations in order to offset the decrease in cash generated from sales. For example, we implemented salary reductions for most of our salaried employees and reduced the number of working hours of most of our hourly employees by 25% from April through June of 2020.

Disruptions resulting from the COVID-19 pandemic may continue to impact our operations and overall business. The impact of COVID-19 is evolving rapidly and its future effects remain uncertain. As a result of such uncertainties, the duration of the disruption and the related impact on our business, operating results and financial condition cannot be reasonably estimated at this time. We are continuing to closely monitor the impact of the COVID-19 pandemic on our business and are taking proactive efforts designed to protect the health and safety of our workforce, continue our business operations and advance our corporate objectives.

Financial Overview

Revenue

We generate product revenue from sales of our instruments and consumables. We currently sell our products for research use only applications and our customers are primarily laboratories associated with academic and governmental research institutions, as well as pharmaceutical, biotechnology and contract research companies. Consumable revenue consists of sales of complete assays which are developed internally by us, plus sales of kits which contain all the elements necessary to run tests. We also generate service revenue from the sale of diagnostic testing services for those with autism spectrum disorder and other neurodevelopmental disabilities through our wholly owned subsidiary Lineagen. Other revenue consists of warranty and other service-based revenue.

The following table presents our revenue for the periods presented:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	2019	2020	2019
Product revenue	$ 1,580,000	$ 3,162,000	$ 3,503,000	$ 6,870,000
Service and other revenue[1]	616,000	151,000	1,010,000	470,000
Total	$ 2,196,000	$ 3,313,000	$ 4,513,000	$ 7,340,000

[1] Includes 100% of the $445,000 revenue generated from Lineagen during the three and nine months ended September 30, 2020.

The following table reflects total revenue by geography and as a percentage of total revenue, based on the billing address of our customers. North America consists of the United States and Canada. EMEIA consists of Europe, Middle East, India and Africa. Asia Pacific includes China, Japan, South Korea, Singapore and Australia.

	Three Months Ended September 30,				Nine Months Ended September 30,			
	2020		2019		2020		2019	
	$	%	$	%	$	%	$	%
North America[2]	$ 874,000	40 %	$ 1,831,000	56 %	$ 2,388,000	53 %	$ 4,050,000	55 %
EMEIA	1,204,000	55 %	943,000	28 %	1,908,000	42 %	2,367,000	32 %
Asia Pacific	118,000	5 %	539,000	16 %	217,000	5 %	923,000	13 %
Total	$ 2,196,000	100 %	$ 3,313,000	100 %	$ 4,513,000	100 %	$ 7,340,000	100 %

[2] Includes 100% of the $445,000 revenue generated from Lineagen during the three and nine months ended September 30, 2020 from August 21, 2020 onward.

Cost of Revenue

Cost of product revenue for our instruments and consumables includes costs from the manufacturer, raw material parts costs and associated freight, shipping and handling costs, contract manufacturer costs, salaries and other personnel costs, overhead and other direct costs related to those sales recognized as product revenue in the period. Cost of service revenue consists of third-party laboratory costs to process the diagnostic samples, salaries of our clinical technicians who interpret and deliver the results to patients, warranty services, and other costs of servicing equipment at customer sites.

Research and Development Expenses

Research and development expenses consist of salaries and other personnel costs, stock-based compensation, research supplies, third-party development costs for new products, materials for prototypes, and allocated overhead costs that include facility and other overhead costs. We have made substantial investments in research and development since our inception, and plan to continue to make investments in the future. Our research and development efforts have focused primarily on the tasks required to support development and commercialization of new and existing products. We believe that our continued investment in research and development is essential to our long-term competitive position.

Selling, General and Administrative Expenses

Selling, general and administrative expenses consist primarily of salaries and other personnel costs, and stock-based compensation for our sales and marketing, finance, legal, human resources and general management, as well as professional services, such as legal and accounting services.

Results of Operations

Comparison of the Three Months Ended September 30, 2020 and 2019

The following table sets forth our results of operations for the three months ended September 30, 2020 and 2019:

	Three Months Ended September 30,		Period-to-Period Change	
	2020	2019	$	%
Revenues:				
Product revenue	$ 1,580,000	$ 3,162,000	$ (1,582,000)	(50.0)%
Service and other revenue	616,000	151,000	465,000	307.9 %
Total revenue	2,196,000	3,313,000	(1,117,000)	(33.7)%
Cost of revenue:				
Cost of product revenue	1,136,000	2,238,000	(1,102,000)	(49.2)%
Cost of other revenue	324,000	137,000	187,000	136.5 %
Total cost of revenue	1,460,000	2,375,000	(915,000)	(38.5)%
Operating expenses:				
Research and development	2,304,000	2,174,000	130,000	6.0 %
Selling, general and administrative	8,659,000	4,449,000	4,210,000	94.6 %
Total operating expenses	10,963,000	6,623,000	4,340,000	65.5 %
Loss from operations	(10,227,000)	(5,685,000)	(4,542,000)	79.9 %
Other income (expenses):				
Interest expense	(589,000)	(578,000)	(11,000)	1.9 %
Other income (expenses)	54,000	(131,000)	185,000	(141.2)%
Total other income (expenses)	(535,000)	(709,000)	174,000	(24.5)%
Loss before income taxes	(10,762,000)	(6,394,000)	(4,368,000)	68.3 %
Provision for income taxes	(30,000)	(4,000)	(26,000)	650.0 %
Net loss	$ (10,792,000)	$ (6,398,000)	$ (4,394,000)	68.7 %

Revenue

Total revenue decreased by $1.1 million, or 33.7%, to $2.2 million for the three months ended September 30, 2020 compared to $3.3 million for the same period in 2019. The decrease was driven by a change in the mix of revenue between instrument sales and our reagent rental program. Below is a summary of changes for the three months ended September 30, 2020 as compared to the same period in 2019, by region:

- North America revenue decreased by $1.0 million, or 52%;
- EMEIA revenue increased by $0.3 million, or 28%; and
- Asia Pacific revenue decreased by $0.4 million, or 78%.

Revenue for the three months ended September 30, 2020 includes service revenue of $0.4 million from our recently acquired subsidiary, Lineagen, from the date of the acquisition of August 21, 2020 to September 30, 2020.

Cost of Revenue

Total cost of revenue decreased by $0.9 million, or 38.5%, to $1.5 million for the three months ended September 30, 2020 compared to $2.4 million for the same period in 2019. The decrease was driven by a change in the mix of revenue between instrument sales and our reagent rental program. In addition, This was partially offset by an increase in consumable units sold of 34% and cost of service revenue of $0.2 million from our recently acquired subsidiary, Lineagen, from the date of the acquisition of August 21, 2020 to September 30, 2020.

Selling, General and Administrative Expenses

Selling, general and administrative expenses increased by $4.2 million, or 94.6%, to $8.7 million for the three months ended September 30, 2020 compared to $4.4 million for the same period in 2019. This is primarily due to an increase in wage expenses and transaction expenses related to our acquisition of Lineagen. In addition to the 33 employees added as a result of the Lineagen acquisition, we increased headcount in our global sales and marketing teams and back-office support teams to assist with the growth of our world-wide product distribution. Also, we incurred increased legal and accounting fees to support business operations and our international presence. A total of $1.5 million in transaction-related expenses were recorded for the Lineagen acquisition. Reduced travel and trade show expenses, in response to COVID travel protocols, have partially offset the increases in wages and professional services.

Comparison of the Nine Months Ended September 30, 2020 and 2019

The following table sets forth our results of operations for the nine months ended September 30, 2020 and 2019:

	Nine Months Ended September 30,		Period-to-Period Change	
	2020	2019	$	%
Revenues:				
Product revenue	$ 3,503,000	$ 6,870,000	$ (3,367,000)	(49.0)%
Service and other revenue	1,010,000	470,000	540,000	114.9 %
Total revenue	4,513,000	7,340,000	(2,827,000)	(38.5)%
Cost of revenue:				
Cost of product revenue	2,426,000	4,883,000	(2,457,000)	(50.3)%
Cost of other revenue	493,000	194,000	299,000	154.1 %
Total cost of revenue	2,919,000	5,077,000	(2,158,000)	(42.5)%
Operating expenses:				
Research and development	7,379,000	6,682,000	697,000	10.4 %
Selling, general and administrative	21,640,000	14,295,000	7,345,000	51.4 %
Total operating expenses	29,019,000	20,977,000	8,042,000	38.3 %
Loss from operations	(27,425,000)	(18,714,000)	(8,711,000)	46.5 %
Other income (expenses):				
Interest expense	(1,911,000)	(1,613,000)	(298,000)	18.5 %
Loss on debt extinguishment	—	(1,333,000)	1,333,000	— %
Other income (expenses)	—	(241,000)	241,000	(100.0)%
Total other income (expenses)	(1,911,000)	(3,187,000)	1,276,000	(40.0)%
Loss before income taxes	(29,336,000)	(21,901,000)	(7,435,000)	33.9 %
Provision for income taxes	(40,000)	(13,000)	(27,000)	207.7 %
Net loss	$ (29,376,000)	$ (21,914,000)	$ (7,462,000)	34.1 %

Revenue

Total revenue decreased by $2.8 million, or 38.5%, to $4.5 million for the nine months ended September 30, 2020 compared to $7.3 million for the same period in 2019. The decrease impacted all regions, largely driven by customers temporarily shutting down their lab operations in response to COVID-19 shelter-at-home orders and related restrictions to address the pandemic. Below is a summary of changes for the nine months ended September 30, 2020 as compared to the same period in 2019:

- North America revenue decreased by $1.7 million, or 41%;
- EMEIA revenue decreased by $0.5 million, or 19%; and
- Asia Pacific revenue decreased by $0.7 million, or 76%.

Revenue for the nine months ended September 30, 2020 includes service revenue of $0.4 million from our recently acquired subsidiary, Lineagen, from the date of the acquisition of August 21, 2020 to September 30, 2020.

Cost of Revenue

Total cost of revenue decreased by $2.2 million, or 42.5%, to $2.9 million for the nine months ended September 30, 2020 compared to $5.1 million for the same period in 2019. The decrease was driven by a change in the mix of revenue between instrument sales and our reagent rental program. This was partially offset by an increase in consumable units sold of 70% and cost of service revenue of $0.2 million from our recently acquired subsidiary, Lineagen, from the date of the acquisition of August 21, 2020 to September 30, 2020.

Research and Development Expenses

Research and development expenses increased $0.7 million, or 10.4%, to $7.4 million for the nine months ended September 30, 2020 compared to $6.7 million for the same period in 2019. This is due to headcount additions to our development teams, but slightly offset by the salary reductions implemented in April 2020. In addition, our materials and supply expense increased during the nine months ended September 30, 2020 due to continued efforts to innovate our product.

Selling, General and Administrative Expenses

Selling, general and administrative expenses increased by $7.3 million, or 51.4%, to $21.6 million for the nine months ended September 30, 2020 compared to $14.3 million for the same period in 2019. This is primarily due to headcount additions to our global sales and marketing teams as well as back-office support teams to assist with the growth of our world-wide product distribution. Also, we incurred increased legal and accounting fees to support business operations and our international presence. A total of $1.5 million in transaction-related expenses were recorded for the Lineagen acquisition. Lastly, we recognized bad debt expense of $1.3 million during the nine months ended September 30, 2020.

Interest Expense

Interest expense increased $0.3 million, or 18.5%, to $1.9 million for the nine months ended September 30, 2020 compared to $1.6 million for the same period in 2019, driven by changes in our term-loan debt. In March 2019, the Company retired its $10 million Credit and Security Agreement with MidCap Financial (the “CSA”) and replaced it with a $20 million facility under our Loan and Security Agreement with Innovatus Life Sciences Lending Fund I, LP, as further discussed below.

Loss on Debt Extinguishment

A loss on debt extinguishment of $1.3 million was recognized during the nine months ended September 30, 2019 in association with retiring the MidCap Financial CSA prior to maturity.

Liquidity and Capital Resources

Since our inception, we have incurred net losses and negative cash flows from operations. We incurred net losses of $10.8 million and $6.4 million for the three months ended September 30, 2020 and 2019, respectively, and $29.4 million and $21.9 million for the nine months ended September 30, 2020 and 2019, respectively. As of September 30, 2020, we had an accumulated deficit of $132.0 million and cash and cash equivalents of $18.9 million.

Sources of Liquidity

Prior to our initial public offering ("IPO") in August 2018, we financed our operations principally through private placements of convertible preferred stock, convertible notes, borrowings from credit facilities, and revenue from our commercial operations. Since our IPO, we have generated cash flows from sales of common stock and other equity instruments instead of convertible preferred stock. We anticipate that future sources of liquidity will principally come from sales of common stock and other equity instruments, borrowings from credit facilities and revenue from our commercial operations. See Note 6 to our condensed consolidated financial statements for a discussion of our recent equity activity and Note 5 to our condensed consolidated financial statements for a discussion of terms and provisions of our debt included elsewhere in this Quarterly Report on Form 10-Q for more information.

Follow-On Offering

In April 2020, we completed an underwritten public offering of 16,896,000 shares of its common stock and, to certain investors, pre-funded warrants to purchase 37,650,000 shares of its common stock, and accompanying common warrants to purchase up to an aggregate of 54,546,000 shares of its common stock. Each share of common stock and pre-funded warrant to purchase one share of common stock was sold together with a common warrant to purchase one share of common stock. The

public offering price of each share of common stock and accompanying common warrant was $0.33 and $0.329 for each pre-funded warrant. The pre-funded warrants are immediately exercisable at a price of $0.001 per share of common stock. The common warrants are immediately exercisable at a price of $0.33 per share of common stock and will expire five years from the date of issuance. The shares of common stock and pre-funded warrants, and the accompanying common warrants, were issued separately and were immediately separable upon issuance. The gross proceeds to us were approximately $18.0 million, before deducting underwriting discounts and commissions and other offering expenses of $1.6 million.

Shelf Registration Statement and At-the-Market Facility

In August 2020, we filed a shelf registration statement on Form S-3 with the SEC covering the offering, issuance and sale of up to $125.0 million of our securities, including up to $40.0 million of common stock pursuant to an at-the-market facility ("ATM") with Ladenburg Thalmann & Co. Inc. acting as sales agent. As of September 30, 2020, we had not sold any shares of common stock under the ATM.

Cash Flows

The following table sets forth the cash flow from operating, investing and financing activities for the periods presented:

	Nine Months Ended September 30,	
	2020	2019
Net cash provided by (used in):		
Operating activities	$ (26,210,000)	$ (20,148,000)
Investing activities	(2,450,000)	(38,000)
Financing activities	30,216,000	11,888,000

Operating Activities

We derive cash flows from operations primarily from the sale of our products and services. Our cash flows from operating activities are also significantly influenced by our use of cash for operating expenses to support the growth of our business. We have historically experienced negative cash flows from operating activities as we have developed our technology, expanded our business and built our infrastructure and this may continue in the future.

Net cash used in operating activities was $26.2 million during the nine months ended September 30, 2020 as compared to $20.1 million during the same period in 2019. The increase in cash used in operating activities of $6.1 million is attributed to increased headcount across the business, increased professional fees to support ongoing business operations and increase our international presence, increased spending on materials and supplies, as well as $1.5 million in acquisition-related costs.

Investing Activities

Historically, our primary investing activities have consisted of capital expenditures for the purchase of capital equipment to support our expanding infrastructure. We expect to continue to incur additional costs for capital expenditures related to these efforts in future periods. During the nine months ended September 30, 2020, cash used in investing activities related to the acquisition of Lineagen, our new wholly owned subsidiary.

Financing Activities

Net cash provided by financing activities was $30.2 million during the nine months ended September 30, 2020 as compared to the same period in 2019 where we had net proceeds from financing activities of $11.9 million, an increase of $18.3 million. During the nine months ended September 30, 2020, we raised approximately $16.4 million in net proceeds from a follow-on offering, and $18.6 million from warrant exercises. In addition, we received approximately $1.8 million pursuant to the PPP Loan (as defined below). Offsets included payments of $2.3 million on our revolving line of credit and $5.0 million in term-loan principal prepayments in accordance with the Second Amendment. During the nine months ended September 30, 2019, we had net proceeds from the issuance of the Innovatus LSA of $8.3 million as well as aggregate proceeds from Innovatus and Aspire Purchase Agreements of approximately $2.4 million.

Paycheck Protection Program

In April 2020, we received loan proceeds of approximately $1.8 million (the "PPP Loan") pursuant to the Paycheck Protection Program (the "PPP") under the Coronavirus Aid, Relief, and Economic Security Act (the "CARES Act") administered by the

U.S. Small Business Administration (the "SBA"). The PPP Loan is scheduled to mature in April 2022 (the "Maturity Date"), bears interest at a rate of 1.00% per annum, and is subject to the standard terms and conditions applicable to loans administered by the SBA under the CARES Act.

The PPP Loan is evidenced by a promissory note issued by East West Bank (the "Lender"). The PPP note contains customary events of default relating to, among other things, payment defaults and breaches of representations and warranties. Under the terms of the CARES Act, recipients of loans under the PPP can apply for and be granted forgiveness for all or a portion of loan granted under the PPP, with such forgiveness to be determined, subject to limitations, based on the use of loan proceeds for payment of payroll costs and certain other eligible costs (the "Eligible Costs"). Pursuant to the Paycheck Protection Program Flexibility Act (the "PPPFA"), enacted on June 5, 2020, we were permitted to use loan proceeds on Eligible Costs through October 2, 2020, or the date that is 24 weeks from the PPP Loan origination date (the "Covered Period"). However, no assurance is provided that forgiveness for any portion of the PPP Loan will be obtained.

Pursuant to the PPPFA, payments of principal and interest due under the PPP Loan are deferred until the date on which the SBA remits the forgiveness amount, if any, back to the PPP Lender, or if forgiveness isn't sought within 10 months after the last day of the Covered Period, until the date that is 10 months from the last day of the Covered Period. The amounts outstanding under the PPP Loan may be prepaid by us at any time prior to maturity without penalty.

The PPP Loan is also described in Note 5 to our condensed consolidated financial statements included elsewhere in this Quarterly Report on Form 10-Q.

Capital Resources

We performed an analysis of our ability to continue as a going concern. We believe, based on our current business plan, that our existing cash and cash equivalents as of September 30, 2020, plus proceeds from the recent warrant exercises described above, will be sufficient to fund our operations and obligations into the first quarter of 2021. We plan to continue to fund our operations through cash and cash equivalents on hand, as well as through public or private equity or debt financings, strategic collaborations, licensing arrangements, asset sales, or other arrangements. Additional funds may not be available when needed from any source or, if available, may not be available on terms that are acceptable to us. In addition, as a result of the COVID-19 pandemic and actions taken to slow its spread, the global credit and financial markets have experienced extreme volatility, including diminished liquidity and credit availability, declines in consumer confidence, declines in economic growth, increases in unemployment rates and uncertainty about economic stability. It is possible that further deterioration in credit and financial markets and confidence in economic conditions will occur. If equity and credit markets deteriorate, it may affect our ability to raise equity capital, borrow on our existing facilities or make any additional necessary debt or equity financing more difficult to obtain, more costly and/or more dilutive. In addition, the COVID-19 pandemic may compromise our ability to comply with the terms of our loan agreement and could result in an event of default. If an event of default were to occur, our lender could accelerate our repayment obligations or enforce other rights under our loan agreements. Any such default may also require us to seek additional or alternative financing, which may not be available on commercially reasonable terms or at all. For example, for the three months ended September 30, 2020, we were not in compliance with our revenue covenant under the Innovatus LSA. As a result, our lender could accelerate our repayment obligations, enforce other rights under the Innovatus LSA or require the payment of cash fees or penalties in order for us to obtain a waiver, and any of these actions could have a material adverse impact on our current business plan and our anticipated cash runway.

Even if we raise additional capital, we may also be required to modify, delay or abandon some of our plans which could have a material adverse effect on our business, operating results and financial condition and our ability to achieve our intended business objectives. Any of these actions could materially harm our business, results of operations and future prospects. See Note 1 to our condensed consolidated financial statements included elsewhere in this Quarterly Report on Form 10-Q for more information.

Off-Balance Sheet Arrangements

We did not have during the periods presented, and we do not currently have, any off-balance sheet arrangements, as defined under SEC rules, and similarly did not and do not have any holdings in variable interest entities.

Critical Accounting Policies and Estimates

Our management's discussion and analysis of our financial condition and results of operations is based on our consolidated financial statements, which have been prepared in accordance with generally accepted accounting principles in the United States. The preparation of our consolidated financial statements requires us to make estimates and assumptions that materially

affect the reported amounts of assets, liabilities, revenues and expenses and the disclosure of contingent assets and liabilities in our consolidated financial statements and accompanying notes. We evaluate these estimates and judgments on an ongoing basis. We base our estimates on historical experience and on various other factors that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Actual results may materially differ from these estimates under different assumptions or conditions.

There were no material changes in our critical accounting policies and estimates during the nine months ended September 30, 2020, except for the changes discussed in Note 1 to the condensed consolidated financial statements.

Recent Accounting Pronouncements

See Note 1 to our condensed consolidated financial statements included elsewhere in this Quarterly Report on Form 10-Q for information concerning recent accounting pronouncements.

ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

As a smaller reporting company, we are not required to provide the information required by this Item.

ITEM 4. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

We maintain “disclosure controls and procedures,” as defined in Rule 13a-15(e) and Rule 15d-15(e) under the Securities Exchange Act of 1934, as amended, or the Exchange Act. Disclosure controls and procedures are controls and other procedures designed to ensure that the information required to be disclosed by us in the reports that we file or submit under the Exchange Act is recorded, processed, summarized, and reported within the time periods specified in the SEC’s rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by us in the reports that we file or submit under the Exchange Act is accumulated and communicated to our management, including our principal executive officer and our principal financial officer, or persons performing similar functions, as appropriate to allow timely decisions regarding required disclosure.

As of September 30, 2020, our management, with the participation of our principal executive officer and principal financial officer, evaluated the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities and Exchange Act of 1934). Our management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives, and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures.

As the acquisition of Lineagen occurred in the third quarter of fiscal 2020, we excluded the internal control over financial reporting of Lineagen from the scope of our assessment of the effectiveness of the Company’s disclosure controls and procedures. This exclusion is in accordance with the general guidance issued by the Staff of the SEC that an assessment of a recently-acquired business may be omitted from our scope in the year of acquisition, if specified conditions are satisfied.

Based on the evaluation of our disclosure controls and procedures as of September 30, 2020, our principal executive and financial officer concluded that, as of such date, our disclosure controls and procedures were not effective at a reasonable assurance level as a result of the material weakness that existed in our internal control over financial reporting, as described below and previously reported in our Annual Report on Form 10-K.

Material Weaknesses in Internal Control over Financial Reporting

During the preparation of our consolidated financial statements for the year ended December 31, 2019, our management assessed the effectiveness of our internal control over financial reporting using the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission in Internal Control-Integrated Framework (2013 Framework). Based on this assessment, our management determined that, as of December 31, 2019, there was a material weakness in our internal control environment over financial reporting because we did not have a sufficient number of resources to support the growth and complexity of our financial reporting requirements.

A material weakness is a deficiency, or a combination of deficiencies, in internal control over financial reporting, such that a reasonable possibility exists that a material misstatement of our annual or interim financial statements would not be prevented or detected on a timely basis. The foregoing material weakness contributed to a material weakness in our control activities based on the criteria set forth in the 2013 Framework. Specifically, the design of certain controls did not adequately provide appropriate segregation of duties and allow timely completion of financial reporting and accounting activities. The failure to

maintain appropriate segregation of duties had a pervasive impact and as such, this deficiency resulted in a risk that could have impacted all financial statement account balances and disclosures. The material weaknesses did not result in any identified material misstatements to our financial statements, and there were no changes to previously released financial results.

Remediation of Material Weaknesses

Management has been actively engaged in developing and implementing a remediation plan to address the material weaknesses described above. The remediation efforts that are in process or expected to be implemented include the following:

- Management has engaged external consultants to assist with our internal accounting functions and further enhance our internal controls which has increased the number of personnel involved in financial reporting.

- We recently hired a new Chief Financial Officer and are in the process of hiring additional qualified individuals that will increase the number of personnel involved in financial reporting and the control environment.

The additional resources and procedures described above are designed to enable us to broaden the scope and quality of our internal review of underlying information related to financial reporting and to formalize and enhance our internal control procedures. While the implementation of improved controls and procedures is ongoing, we have determined that as of September 30, 2020 that the material weaknesses described above have not been fully remediated.

Changes in Internal Control over Financial Reporting

Other than the remediation efforts underway, as described above, and despite the fact that most of our employees are working remotely due to the COVID-19 pandemic, there were no material changes in our internal control over financial reporting during the quarter ended September 30, 2020 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

PART II. OTHER INFORMATION

ITEM 1. LEGAL PROCEEDINGS

None.

ITEM 1A. RISK FACTORS

RISK FACTOR SUMMARY

Below is a summary of the principal factors that make an investment in our securities speculative or risky. This summary does not address *all of the risks that we face. Additional discussion of the risks and uncertainties summarized in this risk factor summary, and other risks and uncertainties that we face, are set forth below under the heading "Risk Factors" and should be carefully considered, together with other information in this Quarterly Report on Form 10-Q and our other filings with the SEC before making investment decisions regarding our securities.*

- we have incurred losses since we were formed and expect to incur losses in the future. We cannot be certain that we will achieve or sustain profitability;
- our quarterly and annual operating results and cash flows have fluctuated in the past and might continue to fluctuate, which could cause the market price of our securities to decline substantially;
- we are an early, commercial-stage company and have a limited operating history, which may make it difficult to evaluate our current business and predict our future performance;
- the terms of our debt facility place restrictions on our operating and financial flexibility, and failure to comply with covenants or to satisfy certain conditions of the agreement governing the debt facility may result in acceleration of our repayment obligations and foreclosure on our pledged assets, which could significantly harm our liquidity, financial condition, operating results, business and prospects and cause the price of our securities to decline;
- our business, and that of our customers, has been adversely affected by the effects of public health crises, including the COVID-19 pandemic; in particular, the COVID-19 pandemic has materially affected our operations globally,

including at our headquarters in San Diego, California, as well as the business or operations of our research partners, customers and other third parties with whom we conduct business;

- our future capital needs are uncertain and we will require additional funding in the future to advance the commercialization of Saphyr and our other products, as well as continue our research and development efforts; if we fail to obtain additional funding, we will be forced to delay, reduce or eliminate our commercialization and development efforts;
- if our products fail to achieve and sustain sufficient market acceptance, our revenue will be adversely affected;
- if we are unable to execute our sales and marketing strategy for our Lineagen products and diagnostic assays and are unable to gain acceptance in the market, we may be unable to generate sufficient revenue to sustain our Lineagen business;
- our future success is dependent upon our ability to further penetrate our existing customer base and attract new customers;
- we are currently limited to "research use only" with respect to many of the materials and components used in our consumable products including our assays;
- in the near term, our business will depend on levels of research and development spending by academic and governmental research institutions and biopharmaceutical companies, a reduction in which could limit demand for our products and adversely affect our business and operating results;
- if we do not successfully manage the development and launch of new products, our financial results could be adversely affected;
- if the FDA determines that our products are medical devices or if we seek to market our products for clinical diagnostic or health screening use, we will be required to obtain regulatory clearance(s) or approval(s), and may be required to cease or limit sales of our then marketed products, which could materially and adversely affect our business, financial condition and results of operations; any such regulatory process would be expensive, time-consuming and uncertain both in timing and in outcome;
- if we are unable to protect our intellectual property, it may reduce our ability to maintain any technological or competitive advantage over our competitors and potential competitors, and our business may be harmed; and
- if we are not able to comply with the applicable continued listing requirements or standards of The Nasdaq Capital Market, Nasdaq could delist our common stock.

RISK FACTORS

Except for the risk factors set forth below, there have been no material changes to the risk factors previously disclosed under the heading "Risk *Factors" in our Annual Report on Form 10-K for the year ended December 31, 2019, filed with the Securities and Exchange Commission on March 10, 2020. You should carefully consider the following risk factors, together with other information in this Quarterly Report on Form 10-Q and our other filings with the SEC, before making investment decisions regarding our securities. The occurrence of any of the following risks could harm our business, financial condition, results of operations and/or growth prospects or cause our actual results to differ materially from those contained in forward-looking statements we have made in this report and those we may make from time to time. The risks described in this Quarterly Report on Form 10-Q and in our Annual Report on Form 10-K for the fiscal year ended December 31, 2019 are not the only risks facing our company. Additional risks and uncertainties not currently known to us or that we currently deem to be immaterial also may materially adversely affect our business, financial condition or future results.*

Risks related to our financial condition and need for additional capital

Our future capital needs are uncertain and we will require additional funding in the future to advance the commercialization of Saphyr and our other products, as well as continue our research and development efforts. If we fail to obtain additional funding, we will be forced to delay, reduce or eliminate our commercialization and development efforts.

Our operations have consumed substantial amounts of cash since our inception. We expect to continue to spend substantial amounts to continue the commercialization of our products as well as our research and development programs. In connection with the preparation of our financial statements for the quarter ended September 30, 2020, we performed an analysis of our ability to continue as a going concern. We believe, based on our current business plan, that our existing cash and cash equivalents will be sufficient to fund our obligations into the first quarter of 2021. Our ability to execute our operating plan beyond the first quarter of 2021 depends on our ability to generate sales and obtain additional funding through equity offerings,

debt financings or potential licensing and collaboration arrangements, and on our ability to maintain compliance with the terms of our debt financing agreements. For example, we will likely need to raise substantial additional capital to:

- expand our sales and marketing efforts to further commercialize our products;
- expand our research and development efforts to improve our existing products and develop and launch new products, particularly if any of our products are deemed by the U.S. Food and Drug Administration, or FDA, to be medical devices or otherwise subject to additional regulation by the FDA;
- seek FDA approval to market our existing RUO products or new products utilized for diagnostic purposes;
- lease a larger facility or build out our existing facility as we continue to grow our employee headcount;
- hire additional personnel;
- enter into collaboration arrangements, if any, or in-license other products and technologies;
- add operational, financial and management information systems; and
- incur increased costs as a result of continued operation as a public company.

Our future funding requirements will be influenced by many factors, including:

- market acceptance of our products;
- the cost and timing of establishing additional sales, marketing and distribution capabilities;
- the cost of our research and development activities;
- the success of our existing distribution and marketing arrangements and our ability to enter into additional arrangements in the future; and
- the effect of competing technological and market developments.

In addition, under current SEC regulations, if at the time we file our Annual Report on Form 10-K the aggregate market value of our common stock held by non-affiliates, or our public float, is less than $75 million, and for so long as our public float remains less than $75 million, the dollar amount of securities we can sell through primary public offerings of our securities in any twelve-month period using one or more shelf registration statements on Form S-3, including sales under our Sales Agreement with Ladenburg, will be limited to an aggregate of one-third of our public float. Although as of November 6, 2020, our public float exceeded $75 million, we cannot assure you that our public float will be $75 million or more at the time we file our Annual Report on Form 10-K. If our public float is less than $75 million at such time, the amount of securities we may sell under shelf registration statements, including sales under the Sales Agreement, will be limited. Any limitations on our ability to use shelf registration statements may harm our ability to raise the capital we need to advance our strategic objectives in an efficient manner or on acceptable terms.

We cannot assure you that we will be able to obtain additional funds on acceptable terms, or at all. If we raise additional funds by issuing equity or equity-linked securities, our stockholders may experience dilution. Future debt financing, if available, may involve covenants restricting our operations or our ability to incur additional debt. Any debt or equity financing may contain terms that are not favorable to us or our stockholders. If we raise additional funds through collaboration and licensing arrangements with third parties, it may be necessary to relinquish some rights to our technologies or our products, or grant licenses on terms that are not favorable to us.

In addition, the COVID-19 pandemic may compromise our ability to comply with the terms of our loan agreement and could result in an event of default. If an event of default were to occur, our lender could accelerate our repayment obligations or enforce other rights under our loan agreements. Any such default may also require us to seek additional or alternative financing, which may not be available on commercially reasonable terms or at all. For example, for the three months ended September 30, 2020, we were not in compliance with our revenue covenant under the Innovatus LSA. As a result, our lender could accelerate our repayment obligations, enforce other rights under the Innovatus LSA or require the payment of cash fees or penalties in order for us to obtain a waiver, and any of these actions could have a material adverse impact on our current business plan and our anticipated cash runway.

If we do not have, or are not able to obtain, sufficient funds, we may have to delay development or commercialization of our products. We also may have to reduce marketing, customer support or other resources devoted to our products or cease operations. Any of these factors could have a material adverse effect on our financial condition, operating results and business.

Any of the foregoing could significantly harm our business, prospects, financial condition and results of operation and could cause the price of our common stock to decline.

Our business, and that of our customers, has been adversely affected by the effects of public health crises, including the COVID-19 pandemic. In particular, the COVID-19 pandemic has materially affected our operations globally, including at our headquarters in San Diego, California, as well as the business or operations of our research partners, customers and other third parties with whom we conduct business.

Our business could be adversely affected by health crises in regions where we have operations, concentrations of sales and marketing teams, distributors or other business operations. Such health crises could also affect the business or operations of our research partners, customers and other third parties with whom we conduct business.

In particular, the COVID-19 pandemic and the measures imposed to contain this pandemic have disrupted and are expected to continue to impact our business. Global efforts to contain the spread of COVID-19 have intensified, with the certain areas of the United States, Europe and Asia implementing severe travel restrictions, social distancing requirements and stay-at-home orders, among other restrictions. In addition, while certain geographical areas have begun gradual movement towards the easing of these COVID-19 related restrictions, reports of increased infection are leading to additional public health directives and orders that may have an unpredictable impact on our financial condition, results of operations, liquidity and cash flows.

In response to these public health directives and orders, we have implemented work-from-home policies for certain employees and temporarily scaled back our operations. We have also modified certain business practices, including those related to employee travel and cancellation of physical participation in meetings, events and conferences, and implemented new protocols to promote social distancing and enhance sanitary measures in our offices and facilities. The quarantine of our personnel and the inability to access our facilities or customer sites has adversely affected, and is expected to continue adversely affecting, our operations. For example, certain members of our workforce are now performing their duties remotely and these employees have not been able to maintain the same level of productivity and efficiency due a lack of resources that would otherwise be available to them in our offices and additional demands on their time, such as increased responsibilities resulting from school closures or the illness of family members.

The effects of these public health directives and orders and our related adjustments in our business have negatively impacted productivity, disrupted our business and delayed our timelines, the magnitude of which will depend, in part, on the length and severity of the restrictions and other limitations on our ability to conduct our business in the ordinary course. For example, in our Annual Report on Form 10-K for the year ended 2019, we made various forward-looking statements regarding our expectations for the timing of improvements in our gross margin, the speed at which we will increase sales of high-margin consumables, product improvements and study results. We have suspended our guidance, projections or outlook, as applicable, for 2020, including with respect to these forward-looking statements.

The spread of COVID-19 has resulted in a widespread health crisis that is adversely affecting the economies and financial markets of many countries, including in the United States, Europe and Asia, which has resulted in an economic downturn that may negatively affect demand for our products and services and materially affect us financially. For example, customers who have committed to order minimum quantities of consumables or to purchase our Saphyr instrument could delay or default on these commitments. Further, restrictions on our ability to travel, stay-at-home orders and other similar restrictions on our business have limited our ability to support our global and domestic operations, including providing installation and training and customer service, resulting in disruptions in our sales and marketing efforts and negative impacts on our commercial strategy. In particular, our management team frequently travels to China and a portion of our sales support team works remotely from China. Also, four of our distributors are located in China. For fiscal year 2019, we derived 14% of our total revenue from the Asia Pacific region and 5% of our total revenue from China. China, like many geographical areas around the world, has recently reported an increase in COVID-19 infections, may result in additional or modified governmental actions and restrictions in the region.

Also, in connection with our Lineagen business, COVID-19 poses the risk that we or our employees, contractors, suppliers, courier delivery services and other partners may be prevented from conducting business activities for an indefinite period of time, including due to spread of the disease within these groups or due to shutdowns that may be requested or mandated by governmental authorities. While it is not possible at this time to estimate the impact that COVID-19 could have on our Lineagen business, the continued spread of COVID-19 and the measures taken by the governments of countries affected could disrupt the supply chain of materials needed for our tests, interrupt our ability to receive specimens, impair our ability to perform or deliver the results from our tests, impede patient movement or interrupt healthcare services causing a decrease in test volumes, delay coverage decisions from Medicare and third party payors, delay ongoing and planned clinical trials involving our tests and have a material adverse effect on our business, financial condition and results of operations.

These and similar, and perhaps more severe, disruptions in our operations could negatively impact our business, operating results and financial condition. In addition, quarantines, stay-at-home, executive and similar government orders, or the perception that such orders, shutdowns or other restrictions on the conduct of business operations could occur, could disrupt our supply chain and affect customer decision-making. For example, any actual or perceived disruption in our product distribution channel could alter customer buying decisions, prompting customers to delay or cancel their orders, which would negatively impact our sales revenue and could harm our reputation. In addition, we anticipate that ongoing disruptions in our supply chain will cause shortages in the materials required to operate our instruments, therefore limiting our ability to process customer samples and the ability of users of our system to operate our system.

The spread of COVID-19, which has caused a broad impact globally, may materially affect us economically. While the economic impact brought by, and the duration of, COVID-19 may be difficult to assess or predict, the disruption of global financial markets may limit our ability to access capital, which could negatively affect our liquidity. A recession or market correction resulting from the spread of COVID-19 may continue to materially affect our business and the value of our common stock even after the outbreak of COVID-19 has subsided, due to unforeseen adverse impacts on us or our third-party manufacturers, vendors and customers.

In addition, we are subject to various affirmative and negative covenants in our loan agreement with our lender. If the effects of COVID-19 cause us to fall out of compliance with one or more of such covenants and we are unable to secure a waiver or negotiate an amendment to our loan agreement on reasonable terms, or at all, an event of default could occur, which would allow our lender to accelerate our repayment obligations or enforce its other rights under our loan agreement. Any such default may also require us to seek additional or alternative financing, which may not be available on commercially reasonable terms or at all. If we are unable to access funds to repay our lender, our lender could take control of our pledged assets. Any of the foregoing events would negatively impact our financial condition and liquidity.

The ultimate impact of the COVID-19 outbreak or a similar health epidemic is highly uncertain and subject to change. We do not yet know the full extent of potential delays or impacts on our business or the global economy as a whole, and such impacts may not be fully recoverable. In addition, the current and potential adverse impacts of the COVID-19 pandemic on our business, financial condition, results of operations and growth prospects, may also have the effect of heightening many of the other risks and uncertainties described in Part I, Item 1A. “Risk Factors” in the Annual Report as well as in this Quarterly Report. We will continue to monitor the COVID-19 situation closely.

The terms of our debt facility place restrictions on our operating and financial flexibility, and failure to comply with covenants or to satisfy certain conditions of the agreement governing the debt facility may result in acceleration of our repayment obligations and foreclosure on our pledged assets, which could significantly harm our liquidity, financial condition, operating results, business and prospects and cause the price of our securities to decline.

On March 14, 2019, we entered into a Loan and Security Agreement, or the Innovatus LSA, with Innovatus Life Sciences Lending Fund I, LP, or Innovatus, and certain lenders, which provides for borrowings up to $25.0 million pursuant to certain term loans and an additional $5.0 million under a revolving credit line. The Innovatus LSA is secured by a lien covering substantially all of our assets, including our intellectual property. As of September 30, 2020, we borrowed approximately $15.9 million in term loans under the Innovatus LSA.

The Innovatus LSA requires us to comply with a number of covenants (affirmative and negative), including restrictive covenants that limit our ability to: incur additional indebtedness; encumber the collateral securing the loan; acquire, own or make investments; repurchase or redeem any class of stock or other equity interest; declare or pay any cash dividend or make a cash distribution on any class of stock or other equity interest; transfer a material portion of our assets; acquire other businesses; and merge or consolidate with or into any other organization or otherwise suffer a change in control, in each case subject to exceptions. Our intellectual property is also subject to customary negative covenants. The Innovatus LSA also includes standard events of default, including a provision that Innovatus could declare an event of default upon the occurrence of any event that it interprets as having a material adverse effect upon our business, operations, properties, assets, or financial condition or upon our ability to perform or pay the secured obligations under the Innovatus LSA or upon the collateral or the liens on the collateral under the agreement, thereby requiring us to repay the loan immediately, together with a prepayment fee and other applicable fees.

If we default under the Innovatus LSA, Innovatus may accelerate all of our repayment obligations and, if we are unable to access funds to meet those obligations or to renegotiate our agreement, Innovatus could take control of our pledged assets and we could immediately cease operations. For example, we were unable to maintain compliance with certain covenants under the Innovatus LSA as of September 30, 2019, December 31, 2019 and September 30, 2020. In order to secure waivers for our breaches of these covenants, we have been required to pay consideration to Innovatus, including, with respect to our breach of

our covenant as of December 31, 2019, our agreement to pay a waiver fee of $200,000 and a prepayment of $2.1 million of principal, as well as to prepay an additional $2.9 million of principal upon the earlier of April 30, 2020 or the closing of one or more equity financings during a specified period resulting in at least $15.0 million of gross proceeds to us in the aggregate, and a $100,000 prepayment fee in connection with such second repayment. While we are currently in discussions with Innovatus, we have not yet secured a waiver of our noncompliance with certain covenants under the Innovatus LSA as of September 30, 2020. In order to obtain such waiver, we may be required to pay additional fees and penalties and issue shares of our common stock to Innovatus as consideration.

In addition, in connection with the audit of our 2019 financial statements, the report of our independent registered public accounting firm expressed an unqualified opinion and included an explanatory paragraph relating to substantial doubt about our ability to continue as a going concern. In the future, Innovatus may determine that the underlying circumstances resulting in the receipt of a going concern explanatory paragraph in the auditor opinion for our 2019 financial statements either on their own, or together with contemporaneous events or circumstances, such as a failure to timely secure additional funding, constitute a material adverse effect upon our business, operations, properties, assets, or financial condition or upon our ability to perform or pay the secured obligations under the Innovatus LSA.

We may not be able to maintain compliance with our covenants in the Innovatus LSA in the future and, although we have been able to secure waivers from Innovatus in the past, securing such waivers in the future may require us to divert further cash towards the repayment of debt and subject us to fees incurred in connection with the negotiation of such waivers. If we are unable to maintain compliance or obtain a waiver of any breach under the Innovatus LSA, Innovatus could declare an event of default or require us to renegotiate the Innovatus LSA on terms that may be significantly less favorable to us. If we were liquidated, Innovatus' right to repayment would be senior to the rights of our stockholders to receive any proceeds from the liquidation. Any declaration by Innovatus of an event of default could significantly harm our liquidity, financial condition, operating results, business, and prospects and cause the price of our securities to decline.

We may incur additional indebtedness in the future. The debt instruments governing such indebtedness may contain provisions that are as, or more, restrictive than the provisions governing our existing indebtedness under the Innovatus LSA. If we are unable to repay, refinance or restructure our indebtedness when payment is due, the lenders could proceed against the collateral or force us into bankruptcy or liquidation.

Risks related to our business operations

Acquisitions or joint ventures could disrupt or otherwise harm our business and may cause dilution to our stockholders.

As part of our growth strategy, we have acquired and may continue to acquire other businesses, products or technologies as well as pursue strategic alliances, joint ventures, technology licenses or investments in complementary businesses. We may not be able to locate or make suitable acquisitions on acceptable terms, and future acquisitions may not be effectively and profitably integrated into our business. Our failure to successfully complete the integration of any business that we acquire could have an adverse effect on our prospects, business activities, cash flow, financial condition, results of operations and stock price. Integration challenges may include the following:

- disruption in our relationships with customers, distributors or suppliers as a result of such a transaction;
- unanticipated expenses and liabilities related to acquired companies;
- difficulties integrating acquired personnel, technologies and operations into our existing business;
- diversion of management time and focus from operating our business to acquisition integration challenges;
- increases in our expenses and reductions in our cash available for operations and other uses;
- possible write-offs or impairment charges relating to acquired businesses;
- difficulties developing and marketing new products and services;
- entering markets in which we have limited or no prior experience; and
- coordinating our efforts throughout various localities and time zones.

Foreign acquisitions involve unique risks in addition to those mentioned above, including those related to integration of operations across different cultures and languages, currency risks and the particular economic, political and regulatory risks associated with specific countries. In addition, in connection with any such transactions, we may also issue equity securities, incur additional debt, assume contractual obligations or liabilities or expend significant cash. Such transactions could harm our operating results and cash position, negatively affect the price of our stock and cause dilution to our current stockholders.

Also, the anticipated benefit of any acquisition may not materialize. Future acquisitions or dispositions could result in potentially dilutive issuances of our equity securities, the incurrence of debt, contingent liabilities or amortization expenses or

write-offs of goodwill, any of which could harm our financial condition. We cannot predict the number, timing or size of future joint ventures or acquisitions, or the effect that any such transactions might have on our operating results.

For example, as previously disclosed, we recently completed the acquisition of Lineagen, Inc., ("Lineagen"), a U.S.-based provider of proprietary molecular diagnostics services for individuals presenting with certain neurodevelopmental disorders, for aggregate consideration consisting of approximately 6,167,510 shares of our common stock (subject to adjustment for cash, accounts receivable, unpaid indebtedness, unpaid transaction expenses and certain other liabilities of Lineagen), $1.9 million in cash, and the assumption of approximately $2.9 million in certain liabilities of Lineagen, pursuant to the terms of that certain Agreement and Plan of Merger, dated as of August 21, 2020, by and among us, Alta Merger Sub, Inc., Lineagen and Michael S. Paul, Ph.D., solely in his capacity as exclusive agent and attorney-in-fact of the securityholders of Lineagen (the "Lineagen Acquisition").

The issuance of shares as consideration in the Lineagen Acquisition resulted in dilution to our existing stockholders. In addition, pursuant to the Lineagen Acquisition, headcount of our consolidated operations increased by 33 employees, which has resulted in and will continue to result in increased selling, general and administrative expenses. Although we conducted extensive business, financial and legal due diligence in connection with our evaluation of the Lineagen Acquisition, our due diligence investigations may not have identified every matter that could adversely affect our business, operating results and financial condition. We may be unable to adequately address the financial, legal and operational risks introduced by the Lineagen Acquisition and may have difficulty developing experience with the industry in which Lineagen operates. Accordingly, we cannot guarantee that the Lineagen Acquisition will yield the results we have anticipated and unforeseen complexities and expenses may arise. In addition, we may not achieve the revenues, growth prospects and synergies expected from this acquisition any such benefits we do achieve may not offset increased costs, resulting in a potential impairment of goodwill or other assets that were acquired. For future acquisitions, we may similarly be unable achieve revenue, growth prospects and synergies in a manner consistent with our expectations. Our failure to do so could adversely affect our business, operating results and financial condition.

Equity issuances in connection with strategic transactions or raising additional capital may cause dilution to our stockholders or restrict our operations.

From time to time, we expect to finance our strategic transactions or cash needs through a combination of equity and debt financings. To the extent that we finance our strategic transactions or raise additional capital through the sale of equity or convertible debt securities, your ownership interest could be diluted and the terms of these securities may include liquidation or other preferences that adversely affect your rights as a common stockholder. Debt financing may involve agreements that include covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends and may be secured by all or a portion of our assets.

For example, on August 13, 2020, we entered into an At Market Issuance Sales Agreement (the "Sales Agreement") with Ladenburg Thalmann & Co. Inc., as sales agent ("Ladenburg"), under which the Company may offer and sell up to $40.0 million of shares of its common stock from time to time through Ladenburg. Any significant sales of stock pursuant to the Sales Agreement would result in dilution to our current stockholders. In addition, we also issued shares of our common stock in connection with the Lineagen Acquisition and the Waiver Letter (as defined below). As a result of this issuances, our investors experienced dilution of their ownership interests.

If we are unable to execute our sales and marketing strategy for our Lineagen products and diagnostic assays and are unable to gain acceptance in the market, we may be unable to generate sufficient revenue to sustain our Lineagen business.

Our Lineagen business provides molecular diagnostics services and has engaged in only limited sales and marketing activities for the diagnostic assays currently offered through our CLIA-certified laboratory. To date, the revenue generated by our Lineagen business has been insufficient to fund operations.

Although we believe that our current assays and our planned future assays represent a promising commercial opportunity, our products or assays may never gain significant acceptance in the marketplace and therefore may never generate substantial revenue or profits for us. We will need to establish a market for our products and diagnostic assays and build that market through physician education, awareness programs and the publication of clinical trial results. Gaining acceptance in medical communities requires, among other things, publications in leading peer-reviewed journals of results from studies using our current products, assays and services and/or our planned future products, assays and services. The process of publication in leading medical journals is subject to a peer review process and peer reviewers may not consider the results of our studies sufficiently novel or worthy of publication. Failure to have our studies published in peer-reviewed journals would limit the adoption of our current products, assays and services and our planned future products, assays and services.

Our ability to successfully market the products and diagnostic assays that we have developed, and may develop in the future, will depend on numerous factors, including:

- conducting clinical utility studies of such assays in collaboration with key thought leaders to demonstrate their use and value in important medical decisions such as treatment selection;
- whether our current or future partners, vigorously support our offerings;
- the success of our sales force;
- whether healthcare providers believe such diagnostic assays provide clinical utility;
- whether the medical community accepts that such diagnostic assays are sufficiently sensitive and specific to be meaningful in-patient care and treatment decisions;
- our ability to continually source raw materials, shipping kits and other products that we sell or consume in our manufacturing process that are of sufficient quality and supply;
- our ability to continue to fund planned sales and marketing activities; and
- whether private health insurers, government health programs and other third-party payers will adopt our current and future assays in their guidelines, or cover such diagnostic assays and, if so, whether they will adequately reimburse us.

The COVID-19 pandemic may also increase the risk and uncertainty of the events described above and delay our development timelines. Failure to achieve widespread market acceptance of our current products, assays and services, as well as our planned future products, assays and services, would materially harm our business, financial condition and results of operations.

In the near term, our RUO business will depend on levels of research and development spending by academic and governmental research institutions and biopharmaceutical companies, a reduction in which could limit demand for our products and adversely affect our business and operating results.

In the near term, we expect that our revenue from our RUO business will be derived primarily from sales of our instruments and consumables to academic and governmental research institutions, as well as biopharmaceutical and contract research companies worldwide for research applications. The demand for our products will depend in part upon the research and development budgets of these customers, which are impacted by factors beyond our control, such as:

- changes in government programs that provide funding to research institutions and companies;
- macroeconomic conditions and the political climate;
- changes in the regulatory environment;
- differences in budgetary cycles; and
- market acceptance of relatively new technologies, such as ours.

For example, in March 2017, the federal government announced the intent to cut federal biomedical research funding by as much as 18%. While there has been significant opposition to these funding cuts, the uncertainty regarding the availability of research funding for potential customers may adversely affect our operating results. Our operating results may fluctuate substantially due to reductions and delays in research and development expenditures by these customers. Any decrease in customers' budgets or expenditures, or in the size, scope or frequency of capital or operating expenditures, could materially and adversely affect our business, operating results and financial condition.

Our future success is dependent upon our ability to further penetrate our existing customer base and attract new customers.

Our current customer base for our RUO products is primarily composed of academic and governmental research institutions and biopharmaceutical and contract research companies and, for our Lineagen business, physicians and their patients. Our success will depend upon our ability to respond to the evolving needs of, and increase our market share among, existing customers and additional potential customers, marketing new products as we develop them. Identifying, engaging and marketing to customers who are unfamiliar with our current products requires substantial time, expertise and expense and involves a number of risks, including:

- our ability to attract, retain and manage the sales, marketing and service personnel necessary to expand market acceptance for our technology;
- the time and cost of maintaining and growing a specialized sales, marketing and service force; and

- our sales, marketing and service force may be unable to execute successful commercial activities.

We have utilized third parties to assist with sales, distribution and customer support in certain regions of the world. There is no guarantee, when we enter into such arrangements, that we will be successful in attracting desirable sales and distribution partners. There is also no guarantee that we will be able to enter into such arrangements on favorable terms. Any failure of our sales and marketing efforts, or those of any third-party sales and distribution partners, would adversely affect our business.

We are currently limited to "research use only" with respect to many of the materials and components used in our consumable products including our assays.

Our instruments, consumable products and assays are purchased from suppliers with a restriction that they be used for research use only, or RUO. While we have focused initially on the life sciences research market and RUO products only, part of our business strategy is to expand our product line to encompass products that are intended to be used for the diagnosis of disease and precision healthcare, either alone or in collaboration with third parties. The use of our RUO products for any such diagnostic purposes would require that we obtain regulatory clearance or approval to market our products for those purposes and also that we acquire the materials and components used in such products from suppliers without an RUO restriction. There can be no assurance that we will be able to acquire these materials and components for use in diagnostic products on acceptable terms, if at all. If we are unable to do so, we would not be able to expand our non-Lineagen product offerings beyond RUO, and our business and prospects would suffer.

The FDA Guidance on "Distribution of In Vitro Diagnostic Products Labeled for Research Use Only or Investigational Use Only", or, the RUO/IUO Labeling Guidance, emphasizes that the FDA will review the totality of the circumstances when evaluating whether equipment and testing components are properly labeled as RUO. It further states that merely including a labeling statement that a product is intended for research use only will not necessarily render the device exempt from the FDA's 510(k) clearance, PMA, or other requirements, if the circumstances surrounding the distribution of the product indicate that the manufacturer intends for its product to be offered for clinical diagnostic use. These circumstances may include written or verbal marketing claims or links to articles regarding a product's performance in clinical applications, a manufacturer's provision of technical support for clinical validation or clinical applications, or solicitation of business from clinical laboratories, all of which could be considered evidence of intended uses that conflict with RUO labeling. If the FDA were to determine that our RUO products were intended for use in clinical investigation, diagnosis or treatment decisions, or that express or implied clinical or diagnostic claims were made for our RUO products, those products could be considered misbranded or adulterated under the Federal Food, Drug, and Cosmetic Act. If the FDA determines that our RUO products are being marketed for clinical diagnostic use without the required PMA or 510(k) clearance, we may be required to cease marketing our products as planned, recall the products from customers, revise our marketing plans, and/or suspend or delay the commercialization of our products until we obtain the required authorization. We also may be subject to a range of enforcement actions by the FDA, including warning or untitled letters, injunctions, civil monetary penalties, criminal prosecution, and recall and/or seizure of products, as well as significant adverse publicity.

If, in the future, we choose to commercialize our RUO products for clinical diagnostic use, we will be required to comply with the FDA's premarket review and post-market control requirements for IVDs, as may be applicable. Complying with the FDA's PMA and/or 510(k) clearance requirements may be expensive, time-consuming, and subject us to significant and/or unanticipated delays. Our efforts may never result in an approved PMA or 510(k) clearance for our products. Even if we obtain a PMA or 510(k) clearance, where required, such authorization may not be for the use or uses we believe are commercially attractive and/or are critical to the commercial success of our products. As a result, being subject to the FDA's premarket review and/or post-market control requirements for our products could materially and adversely affect our business, financial condition and results of operations.

We have limited experience in marketing and selling our products, and if we are unable to successfully commercialize our products, our business and operating results will be adversely affected.

We have limited experience marketing and selling our products. We currently sell our Saphyr system for research use only, through our direct field sales and support organizations located in North America and Europe and through a combination of our own sales force and third-party distributors in additional major markets such as Australian, China, Japan and South Korea.

The future sales of our products will depend in large part on our ability to effectively market and sell our products, successfully manage and expand our sales force, and increase the scope of our marketing efforts. We may also enter into additional distribution arrangements in the future. Because we have limited experience in marketing and selling our products, our ability to

forecast demand, the infrastructure required to support such demand and the sales cycle to customers is unproven. If we do not build an efficient and effective sales force, our business and operating results will be adversely affected.

We rely on a single contract manufacturer for our non-Lineagen systems and rely on a single contract manufacturer for our chip consumables. If either of these manufacturers should fail or not perform satisfactorily, our ability to supply these instruments would be negatively and adversely affected.

We currently rely on a single contract manufacturer to manufacture and supply all of our non-Lineagen instruments. See “Business–Key Agreements” in our Annual Report. In addition, we rely on a single contract manufacturer to manufacture and supply all of our chip consumables. Since our contracts with these manufacturers do not commit them to supply quantities beyond the amounts included in our purchase orders, and do not commit them to carry inventory or make available any particular quantities, these contract manufacturers may give other customers’ needs higher priority than ours, and we may not be able to obtain adequate supplies in a timely manner or on commercially reasonable terms. If either of these manufacturers were to be unable to supply instruments, our business would be harmed.

In the event it becomes necessary to utilize different contract manufacturers for our non-Lineagen instruments or chip consumables, we would experience additional costs, delays and difficulties in doing so as a result of identifying and entering into an agreement with a new supplier as well as preparing such new supplier to meet the logistical requirements associated with manufacturing our units, and our business would suffer. We may also experience additional costs and delays in the event we need access to or rights under any intellectual property of these current manufacturers.

If our laboratory facilities become damaged or inoperable or we are required to vacate our existing facilities, our ability to conduct our laboratory analysis and pursue our research and development efforts may be jeopardized.

We currently perform all research and development activities and most of our genome analysis services at a single laboratory facility in San Diego, California with the remaining genome analysis services at a facility we occupy at a customer's lab in Clermont-Ferrand, France. All of our molecular diagnostics services are processed through our Lineagen business at a single laboratory facility in Salt Lake City, Utah.

Our facilities and equipment could be harmed or rendered inoperable by natural or man-made disasters, including war, fire, earthquake, power loss, communications failure, terrorism, burglary, public health crises (including restrictions that may be imposed on businesses by state and local governments under stay-at-home or similar orders and mandates, such as those implemented in response to the COVID-19 pandemic) or other events, which may make it difficult or impossible for us to perform our testing services for some period of time or to receive and store samples. The inability to perform tests or to reduce the backlog of sample analysis that could develop if one or both of our facilities become inoperable, for even a short period of time, may result in the loss of revenue, loss of customers or harm to our reputation, and we may be unable to regain that revenue, those customers or repair our reputation in the future. Furthermore, integral parties in our supply chain are operating from single sites, increasing their vulnerability to natural disasters and man-made disasters or other sudden, unforeseen and severe adverse events.

In addition, the loss of our samples due to such events could limit or prevent our ability to conduct research and development analysis on existing tests as well as tests in development.

Our facilities and the equipment we use to perform our testing and research and development could be unavailable or costly and time-consuming to repair or replace. It would be difficult, time-consuming and expensive to rebuild our facilities, to locate and qualify a new facility, replace certain pieces of equipment or license or transfer our proprietary technology to a third-party, particularly in light of licensure and accreditation requirements. Even in the unlikely event that we are able to find a third party with such qualifications to enable us to resume our operations, we may be unable to negotiate commercially reasonable terms.

We carry insurance for damage to our property and the disruption of our business, but this insurance may not cover all of the risks associated with damage or disruption to our business, may not provide coverage in amounts sufficient to cover our potential losses and may not continue to be available to us on acceptable terms, if at all.

We rely on a limited number of suppliers or, in some cases, one supplier, for some of our materials and components used in our products, and may not be able to find replacements or immediately transition to alternative suppliers, which could have a material adverse effect on our business, financial condition, results of operations and reputation.

We rely on limited or sole suppliers for certain reagents and other materials and components that are used in our products. While we periodically forecast our needs for such materials and enter into standard purchase orders with our suppliers, we do not have long-term contracts with many of these suppliers. If we were to lose such suppliers, there can be no assurance that we will be able to identify or enter into agreements with alternative suppliers on a timely basis on acceptable terms, if at all. An interruption in our operations, including our laboratory operations, could occur if we encounter delays or difficulties in securing

these materials, or if the quality of the materials supplied do not meet our requirements, or if we cannot then obtain an acceptable substitute. The time and effort required to qualify a new supplier and ensure that the new materials provide the same or better quality results could result in significant additional costs. Any such interruption could significantly affect our business, financial condition, results of operations and reputation.

In addition, certain of the components used in our instruments are sourced from limited or sole suppliers. If we were to lose such suppliers, there can be no assurance that we will be able to identify or enter into agreements with alternative suppliers on a timely basis on acceptable terms, if at all. An interruption in our ability to sell and deliver instruments to customers could occur if we encounter delays or difficulties in securing these components, or if the quality of the components supplied do not meet specifications, or if we cannot then obtain an acceptable substitute. If any of these events occur, our business and operating results could be harmed.

Also, in order to mitigate these risks, we maintain inventories of certain supplies at higher levels than would be the case if multiple sources of supply were available. If our sales or testing volume decreases or we switch suppliers, we may hold excess supplies with expiration dates that occur before use which would adversely affect our losses and cash flow position. As we introduce any new products, we may experience supply issues as we ramp up our sales or test volume. If we should encounter delays or difficulties in securing, reconfiguring or revalidating the equipment, reagents or other materials we require for our products, our business, financial condition, results of operations and reputation could be adversely affected.

Undetected errors or defects in our products could harm our reputation, decrease market acceptance of our products or expose us to product liability claims.

Our products may contain undetected errors or defects when first introduced or as new versions or new products are released. Disruptions affecting the introduction or release of, or other performance problems with, our products may damage our customers' businesses and could harm their and our reputation. If that occurs, we may incur significant costs, the attention of our key personnel could be diverted, or other significant customer relations problems may arise. We may also be subject to warranty and liability claims for damages related to errors or defects in our products. In addition, if we do not meet industry or quality standards, if applicable, our products may be subject to recall. A material liability claim, recall or other occurrence that harms our reputation or decreases market acceptance of our products could harm our business and operating results.

If our customers develop or use our products or assays for diagnostic purposes, someone could file a product liability claim alleging that one of our products contained a design or manufacturing defect that resulted in the failure to adequately perform, leading to death or injury. In addition, the marketing, sale and use of our current or future products and assays through our Lineagen business could lead to the filing of product liability claims against us if someone alleges that our products failed to perform as designed. We may also be subject to liability for errors in the results we provide or for a misunderstanding of, or inappropriate reliance upon, the information we provide.

A product liability claim could result in substantial damages and be costly and time consuming to defend, either of which could materially harm our business or financial condition. We cannot assure investors that our product liability insurance would adequately protect our assets from the financial impact of defending a product liability claim. Any product liability claim brought against us, with or without merit, could increase our product liability insurance rates or prevent us from securing insurance coverage in the future. Additionally, any product liability lawsuit could damage our reputation, or cause current partners to terminate existing agreements and potential partners to seek other partners, any of which could impact our results of operations.

We may also initiate a correction to our existing products or assays, which could lead to increased costs and increased scrutiny by regulatory authorities and our customers regarding the quality and safety of our products or services, as well as negative publicity. The occurrence of any of these events could have an adverse effect on our business and results of operations.

Our business could be negatively impacted by cyber security threats.

We are increasingly dependent upon information technology systems, infrastructure and data to operate our business. In the ordinary course of our business, we collect, store and transmit sensitive data and confidential information, including but not limited to intellectual property, proprietary business information owned or controlled by ourselves or our customers, financial information and, where allowed, personal information.

The procedures and controls we use to monitor these threats and mitigate our exposure may not be sufficient to prevent cyber security incidents, and our internal information technology systems and those of our contractors and consultants are potentially vulnerable to breakdown or other damage or interruption from service interruptions, system malfunction, natural disasters, terrorism, war, public health crises and telecommunication and electrical failures, as well as security breaches from inadvertent or intentional actions by our employees, contractors, consultants, business partners, and/or other third parties, or from cyber-attacks by malicious third parties (including the deployment of harmful malware, ransomware, denial-of-service attacks, social engineering and other means to affect service reliability and threaten the confidentiality, integrity and availability of information), which may compromise our system infrastructure or lead to data leakage. To the extent that any disruption or

security breach were to result in a loss of, or damage to, our data or applications, or inappropriate disclosure of confidential or proprietary information, we could incur liability and reputational damage. In addition, these incidents could result in disrupted operations, lost opportunities, misstated financial data, increased costs arising from the implementation of additional security protective measures and litigation costs.

Any remedial costs or other liabilities related to cyber security incidents may not be fully insured or indemnified by other means. For example, any such event that leads to unauthorized access, use, or disclosure of personal information, including personal information related to our patient samples or employees, could harm our reputation directly, compel us to comply with federal and/or state breach notification laws and foreign law equivalents, subject us to mandatory corrective action, and otherwise subject us to liability under laws and regulations that protect the privacy and security of personal information, which could result in significant legal and financial exposure and reputational damages that could potentially have an adverse effect on our business.

While we have not experienced any such system failure, accident or material security breach to date, we cannot assure you that our data protection efforts and our investment in information technology will prevent significant breakdowns, data leakages, breaches in our systems or other cyber incidents that could have a material adverse effect upon our reputation, business, operations or financial condition. For example, we maintain a proprietary algorithms and databases that enable our proprietary bioinformatic and structural variation analysis pipelines and that contain certain information relating to patient or research samples. If we were to lose this information, our ability to further validate, improve and therefore maintain and grow sales of Saphyr or our diagnostic services through the Lineagen business could be significantly impaired.

We may not be entitled to forgiveness of our recently received Paycheck Protection Program Loan, and our application for the Paycheck Protection Program Loan could in the future be determined to have been impermissible or could result in damage to our reputation.

On April 17, 2020, we received loan proceeds of approximately $1.77 million (the “PPP Loan”) pursuant to the Paycheck Protection Program under the Coronavirus Aid, Relief, and Economic Security Act (the “CARES Act”) administered by the U.S. Small Business Administration (the “SBA”). We intend to use the PPP Loan to retain current employees, maintain payroll and make lease and utility payments. The PPP Loan is evidenced by a promissory note, dated as of April 17, 2020, issued by East West Bank, which contains customary events of default relating to, among other things, payment defaults and breaches of representations and warranties. The PPP Loan is scheduled to mature on April 17, 2022 (the “Maturity Date”), bears interest at a rate of 1.00% per annum, and is subject to the standard terms and conditions applicable to loans administered by the SBA under the CARES Act.

Pursuant to the Paycheck Protection Program Flexibility Act, payments on principal and interest due under the PPP Loan are deferred until the date on which the SBA remits the forgiveness amount back to East West Bank, or if forgiveness is not sought within 10 months after the last day of the Covered Period, as defined below, the date that is 10 months after the last day of the Covered Period. All interest which accrues during the deferral period will be deferred and payable on the Maturity Date. The amounts outstanding under the PPP Loan may be prepaid by us at any time prior to maturity without penalty. Under the CARES Act, as amended in June 2020, loan forgiveness is generally available for the sum of documented payroll costs, covered rent payments, covered mortgage interest and covered utilities during the 24-week period beginning on the date of the first disbursement of the PPP Loan, or the Covered Period. The amount of the PPP Loan eligible to be forgiven may be reduced in certain circumstances, including as a result of certain headcount or salary reductions. We will be required to repay any portion of the outstanding principal that is not forgiven, along with accrued interest, and we cannot provide any assurance that we will be eligible for loan forgiveness, that we will apply for forgiveness, or that any amount of the PPP Loan will ultimately be forgiven by the SBA.

In order to apply for the PPP Loan, we were required to certify, among other things, that the current economic uncertainty made the PPP Loan request necessary to support our ongoing operations. We made this certification in good faith after analyzing, among other things, the maintenance of our workforce, our need for additional funding to continue operations, and our ability to access alternative forms of capital in the current market environment to offset the effects of the COVID -19 pandemic. Following this analysis, we believe that we satisfied all eligibility criteria for the PPP Loan, and that our receipt of the PPP Loan is consistent with the broad objectives of the CARES Act. The certification described above did not contain any objective criteria and is subject to interpretation.

On April 23, 2020, the SBA issued guidance stating that it is unlikely that a public company with substantial market value and access to capital markets will be able to make the required certification in good faith. The lack of clarity regarding loan eligibility under the Paycheck Protection Program has resulted in significant media coverage and controversy with respect to public companies applying for and receiving loans. If, despite our good-faith belief that given our circumstances we satisfied all eligible requirements for the PPP Loan, we are later determined to have violated any applicable laws or regulations that may apply to us in connection with the PPP Loan or it is otherwise determined that we were ineligible to receive the PPP Loan, we may be required to repay the PPP Loan in its entirety and/or be subject to additional penalties, which could also result in adverse publicity and damage to our reputation. Should we be audited or reviewed by federal or state regulatory authorities as a

result of filing an application for forgiveness of the PPP Loan or otherwise, such audit or review could result in the diversion of management's time and attention and legal and reputational costs. If we were to be audited or reviewed and receive an adverse determination or finding in such audit or review, we could be required to return the full amount of the PPP Loan. Any of these events could have a material adverse effect on our business, results of operations and financial condition.

If we are not able to comply with the applicable continued listing requirements or standards of The Nasdaq Capital Market, Nasdaq could delist our common stock.

Our ability to publicly or privately sell equity securities and the liquidity of our common stock could be adversely affected if we are delisted from The Nasdaq Capital Market or if we are unable to transfer our listing to another stock market. In order to maintain this listing, we must satisfy minimum financial and other continued listing requirements and standards, including a requirement to maintain a minimum bid price of the Company's common stock of $1.00 per share.

In a letter dated April 22, 2020, or the Notice, we were notified by the Nasdaq Stock Market LLC, or Nasdaq, that for 30 consecutive trading days preceding the date of the Notice, the bid price of our common stock had closed below the $1.00 per share minimum required for continued listing on The Nasdaq Capital Market pursuant to Nasdaq Listing Rule 5550(a)(2), or the Minimum Bid Price Requirement.

Under Nasdaq Listing Rule 5810(c)(3)(A), we have 180 calendar days following the date of the Notice to regain compliance with the Minimum Bid Price Requirement. However, due to recent extraordinary market conditions, Nasdaq has determined to toll the compliance period for the Minimum Bid Price Requirement through September 30, 2020, or the Tolling Period. As a result, the compliance Period will end on December 28, 2020, or the Compliance Period, instead of October 20, 2020. If at any time during the Tolling Period or the Compliance Period the closing bid price of our common stock is at least $1.00 for a minimum of 10 consecutive business days, we will regain compliance with the Minimum Bid Price Requirement and our common stock will continue to be eligible for listing on The Nasdaq Capital Market absent noncompliance with any other requirement for continued listing.

If we do not regain compliance with the Minimum Bid Price Requirement by the end of the Compliance Period, we may be afforded an additional 180 calendar days to regain compliance with the Minimum Bid Price Requirement, or the Additional Compliance Period, if on the last day of the Compliance Period the Company is in compliance with the market value of publicly held shares requirement for continued listing as well as all other standards for initial listing of our common stock on The Nasdaq Capital Market (other than the Minimum Bid Price Requirement), unless we do not indicate our intent to cure the deficiency, or if it appears to Nasdaq that it is not possible for us to cure the deficiency.

If we do not regain compliance with the Minimum Bid Price Requirement by the end of the Compliance Period, or the Additional Compliance Period, if applicable, our common stock will be subject to delisting.

If Nasdaq staff provides notice that our common stock may become subject to delisting, Nasdaq rules permit us to appeal the decision to reject our proposed compliance plan or any delisting determination to a Nasdaq Hearings Panel. Accordingly, there can be no guarantee that we will be able to maintain our Nasdaq listing. If our common stock is delisted by Nasdaq, it could lead to a number of negative implications, including an adverse effect on the price of our common stock, increased volatility in our common stock, reduced liquidity in our common stock, the loss of federal preemption of state securities laws and greater difficulty in obtaining financing. In addition, delisting of our common stock could deter broker-dealers from making a market in or otherwise seeking or generating interest in our common stock, could result in a loss of current or future coverage by certain sell-side analysts and might deter certain institutions and persons from investing in our securities at all. Delisting could also cause a loss of confidence of our customers, collaborators, vendors, suppliers and employees, which could harm our business and future prospects.

If our common stock is delisted by Nasdaq, our common stock may be eligible to trade on the OTC Bulletin Board, OTC-QB or another over-the-counter market. Any such alternative would likely result in it being more difficult for us to raise additional capital through the public or private sale of equity securities and for investors to dispose of or obtain accurate quotations as to the market value of, our common stock. In addition, there can be no assurance that our common stock would be eligible for trading on any such alternative exchange or markets. Moreover, if our common stock is delisted, it may come within the definition of "penny stock" under the Exchange Act, which imposes additional sales practice requirements on broker-dealers who sell securities to persons other than established customers and accredited investors. For example, we and/or broker-dealers are required to make a special suitability determination for purchases of such securities and must receive a purchaser's written consent to the transaction prior to any purchase. Additionally, unless exempt, prior to a transaction involving a penny stock, the penny stock rules require the delivery of a disclosure schedule prescribed by the SEC relating to the penny stock market. The broker-dealer must also disclose the commissions payable to the broker-dealer, current quotations for the securities and, if the broker-dealer is the sole market-maker for the security, the fact that they are the sole market-maker and their presumed control over the market. Finally, monthly statements disclosing recent price information on the limited market in penny stocks must be sent to holders of such penny stocks. These requirements may reduce trading activity in the secondary market for our common stock and may impact the ability or willingness of broker-dealers to sell our securities which could limit the ability of

stockholders to sell their securities in the public market and limit our ability to attract and retain qualified employees or raise additional capital in the future.

Our amended and restated certificate of incorporation provides that the Court of Chancery of the State of Delaware and the federal district courts of the United States of America will be the exclusive forums for substantially all disputes between us and our stockholders, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or our directors, officers or other employees.

Our amended and restated certificate of incorporation provides that the Court of Chancery of the State of Delaware is the exclusive forum for the following types of actions or proceedings under Delaware statutory or common law:

- any derivative action or proceeding brought on our behalf;
- any action asserting a breach of fiduciary duty;
- any action asserting a claim against us arising under the Delaware General Corporation Law, our amended and restated certificate of incorporation, or our amended and restated bylaws; and
- any action asserting a claim against us that is governed by the internal-affairs doctrine.

This provision would not apply to suits brought to enforce a duty or liability created by the Exchange Act. Furthermore, Section 22 of the Securities Act creates concurrent jurisdiction for federal and state courts over all such Securities Act actions. Accordingly, both state and federal courts have jurisdiction to entertain such claims. To prevent having to litigate claims in multiple jurisdictions and the threat of inconsistent or contrary rulings by different courts, among other considerations, our amended and restated certificate of incorporation further provides that the federal district courts of the United States of America will be the exclusive forum for resolving any complaint asserting a cause of action arising under the Securities Act. While the Delaware courts have determined that such choice of forum provisions are facially valid, a stockholder may nevertheless seek to bring a claim in a venue other than those designated in the exclusive forum provisions. In such instance, we would expect to vigorously assert the validity and enforceability of the exclusive forum provisions of our amended and restated certificate of incorporation. This may require significant additional costs associated with resolving such action in other jurisdictions and there can be no assurance that the provisions will be enforced by a court in those other jurisdictions.

These exclusive forum provisions may limit a stockholder's ability to bring a claim in a judicial forum that it finds favorable for disputes with us or our directors, officers or other employees, which may discourage lawsuits against us and our directors, officers and other employees. If a court were to find either exclusive-forum provision contained in our amended and restated certificate of incorporation to be inapplicable or unenforceable in an action, we may incur further significant additional costs associated with resolving the dispute in other jurisdictions, all of which could adversely affect our results of operations and financial condition.

Risks related to government regulation and diagnostic product reimbursement

If the FDA determines that our RUO products are medical devices or if we seek to market our RUO products for clinical diagnostic or health screening use, we will be required to obtain regulatory clearance(s) or approval(s), and may be required to cease or limit sales of our then marketed products, which could materially and adversely affect our business, financial condition and results of operations. Any such regulatory process would be expensive, time-consuming and uncertain both in timing and in outcome.

Our RUO business is focused on the life sciences research market. This includes laboratories associated with academic and governmental research institutions, as well as pharmaceutical, biotechnology and contract research companies. Accordingly, our products are labeled as "Research Use Only," or RUO, and are not intended for diagnostic use. While we have focused initially on the life sciences research market and RUO products only, our strategy is to expand our product line to encompass products that are intended to be used for the diagnosis of disease, either alone or in collaboration with third parties (such as our collaboration with Berry Genomics). Such in-vitro diagnostic, or IVD, products will be subject to regulation by the FDA as medical devices, or comparable international agencies, including requirements for regulatory clearance or approval of such products before they can be marketed. If the FDA were to determine that our products are intended for clinical use or if we decided to market our products for such use, we would be required to obtain FDA 510(k) clearance or premarket approval in order to sell our products in a manner consistent with FDA laws and regulations. Such regulatory approval processes or clearances are expensive, time-consuming and uncertain; our efforts may never result in any approved premarket approval application, or PMA, or 510(k) clearance for our products; and failure by us or a collaborator to obtain or comply with such approvals and clearances could have an adverse effect on our business, financial condition or operating results.

IVD products may be regulated as medical devices by the FDA and comparable international agencies and may require either clearance from the FDA following the 510(k) pre-market notification process or PMA from the FDA, in each case prior to

marketing. If we or our collaborators are required to obtain a PMA or 510(k) clearance for products based on our technology, we or they would be subject to a substantial number of additional requirements for medical devices, including establishment registration, device listing, Quality Systems Regulations which cover the design, testing, production, control, quality assurance, labeling, packaging, servicing, sterilization (if required), and storage and shipping of medical devices (among other activities), product labeling, advertising, recordkeeping, post-market surveillance, post-approval studies, adverse event reporting, and correction and removal (recall) regulations. One or more of the products we or a collaborator may develop using our technology may also require clinical trials in order to generate the data required for PMA approval. Complying with these requirements may be time-consuming and expensive. We or our collaborators may be required to expend significant resources to ensure ongoing compliance with the FDA regulations and/or take satisfactory corrective action in response to enforcement action, which may have a material adverse effect on the ability to design, develop, and commercialize products using our technology as planned. Failure to comply with these requirements may subject us or a collaborator to a range of enforcement actions, such as warning letters, injunctions, civil monetary penalties, criminal prosecution, recall and/or seizure of products, and revocation of marketing authorization, as well as significant adverse publicity. If we or our collaborators fail to obtain, or experience significant delays in obtaining, regulatory approvals for IVD products, such products may not be able to be launched or successfully commercialized in a timely manner, or at all.

Laboratory developed tests, or LDTs, are a subset of IVD tests that are designed, manufactured and used within a single laboratory. Our Lineagen genetic diagnostic services are provided as LDTs. The FDA maintains that LDTs are medical devices and has for the most part exercised enforcement discretion for most LDTs. A significant change in the way that the FDA regulates any LDTs that we, our collaborators or our customers market or develop using our technology could affect our business. If the FDA requires laboratories to undergo premarket review and comply with other applicable FDA requirements in the future, the cost and time required to commercialize an LDT will increase substantially, and may reduce the financial incentive for us to continue to offer our Lineagen genetic diagnostic services or for our customer laboratories to develop LDTs, which could reduce demand for our RUO instruments and our other products. In addition, if the FDA were to change the way that it regulates LDTs to require that we undergo pre-market review or comply with other applicable FDA requirements before we can sell our RUO instruments or our other products to clinical cytogenics laboratories, our ability to sell our RUO instruments and other products to this addressable market would be delayed, thereby impeding our ability to penetrate this market and generate revenue from sales of our instruments and our other products.

Failure to comply with applicable FDA requirements could subject us to misbranding or adulteration allegations under the Federal Food, Drug, and Cosmetic Act. We could be subject to a range of enforcement actions, including warning letters, injunctions, civil monetary penalties, criminal prosecution, and recall and/or seizure of products, as well as significant adverse publicity. In addition, changes to the current regulatory framework, including the imposition of additional or new regulations, could arise at any time during the development or marketing of our products, which may negatively affect our ability to obtain or maintain FDA or comparable regulatory approval of our products, if required.

Foreign jurisdictions have laws and regulations similar to those described above, which may adversely affect our ability to market our products as planned in such countries. The number and scope of these requirements are increasing. As in the U.S., the cost and time required to comply with regulatory requirements may be substantial, and there is no guarantee that we will obtain the necessary authorization(s) required to make our products commercially viable. As a result, the imposition of foreign requirements may also have a material adverse effect on the commercial viability of our operations.

Billing for our products is complex and requires substantial time and resources to collect payment.

Billing for clinical laboratory testing services in connection with our Lineagen business is complex, time-consuming and expensive. Depending on the billing arrangement and applicable law, we bill various payors, including Medicare, Medicaid, private insurance companies, private healthcare institutions, and patients, all of which have different billing requirements. We generally bill third-party payors for our diagnostic testing services through our Lineagen business and pursue reimbursement on a case-by-case basis where pricing contracts are not in place. To the extent laws or contracts require us to bill patient co-payments or co-insurance, we must also comply with these requirements. We may also face increased risk in our collection efforts, including potential write-offs of accounts receivable and long collection cycles, which could adversely affect our business, results of operations and financial condition.

Several factors make the billing process complex, including:

- differences between the billing rates and reimbursement rates for our products;
- compliance with complex federal and state regulations related to billing government healthcare programs, including Medicare, Medicaid and TRICARE;

- risk of government audits related to billing;
- disputes among payors as to which party is responsible for payment;
- differences in coverage and information and billing requirements among payors, including the need for prior authorization and/or advanced notification;
- the effect of patient co-payments or co-insurance and our ability to collect such payments from patients;
- changes to billing codes used for our products;
- changes to requirements related to our current or future clinical studies, including our registry studies, which can affect eligibility for payment;
- ongoing monitoring provisions of LCDs for our products, which can affect the circumstances under which a claim would be considered medically necessary;
- incorrect or missing billing information; and
- the resources required to manage the billing and claims appeals process.

We use standard industry billing codes, known as Current Procedural Terminology, or CPT, codes, to bill for our diagnostic testing services. If these codes were to change, there is a risk of an error being made in the claim adjudication process. Such errors can occur with claims submission, third-party transmission or in the processing of the claim by the payor. Claim adjudication errors may result in a delay in payment processing or a reduction in the amount of the payment we receive.

As we introduce new products, we may need to add new codes to our billing process as well as our financial reporting systems. Failure or delays in effecting these changes in external billing and internal systems and processes could negatively affect our collection rates, revenue and cost of collecting.

Additionally, our billing activities require us to implement compliance procedures and oversight, train and monitor our employees, and undertake internal audits to evaluate compliance with applicable laws and regulations as well as internal compliance policies and procedures. When payors deny our claims, we may challenge the reason, low payment amount or payment denials. Payors also conduct external audits to evaluate payments, which add further complexity to the billing process. If the payor makes an overpayment determination, there is a risk that we may be required to return all or some portion of prior payments we have received.

Additionally, the Patient Protection and Affordable Care Act of 2010, as amended by the Health Care and Education Reconciliation Act of 2010, collectively the ACA, requires providers and suppliers to report and return any overpayments received from government payors under the Medicare and Medicaid programs within 60 days of identification. Failure to identify and return such overpayments exposes the provider or supplier to liability under federal false claims laws. These billing complexities, and the related uncertainty in obtaining payment for our products, could negatively affect our revenue and cash flow, our ability to achieve sustained profitability, and the consistency and comparability of our results of operations.

If our Lineagen diagnostic testing procedures are subject to unfavorable pricing regulations or third-party payor coverage and reimbursement policies, our business could be harmed.

Our Lineagen-related revenue depends on achieving and maintain broad coverage and adequate reimbursement for our Lineagen products and diagnostic assays from third-party payors, including both government and commercial third-party payors. If third-party payors do not provide coverage of, or do not provide adequate reimbursement for, a substantial portion of the list price of our Lineagen products and diagnostic assays, we may need to seek additional payment from the patient beyond any co-payments and deductibles, which may adversely affect demand for our Lineagen products and diagnostic assays. Coverage determinations by a third-party payor may depend on a number of factors, including, but not limited to, a third-party payor’s determination of whether our products or services are appropriate, medically necessary or cost-effective. If we are unable to provide third-party payors with sufficient evidence of the clinical utility and validity of our Lineagen products and diagnostic assays, they may not provide coverage, or may provide limited coverage, which will adversely affect our revenues and our ability to succeed.

Since each third-party payor makes its own decision as to whether to establish a policy to cover our Lineagen products and diagnostic assays, enter into a contract with us and set the amount it will reimburse for a product, these negotiations are a time-consuming and costly process, and they do not guarantee that the third-party payor will provide coverage or adequate reimbursement for our Lineagen products and diagnostic assays. In addition, the determinations by a third-party payor whether to cover our Lineagen products and diagnostic assays and the amount it will reimburse for them are often made on an indication-by-indication basis.

In cases where there is no coverage policy or we do not have a contracted rate for reimbursement as a participating provider, the patient is typically responsible for a greater share of the cost of the product, which may result in further delay of our revenue, increase our collection costs or decrease the likelihood of collection.

Our claims for reimbursement from third-party payors may be denied upon submission, and we may need to take additional steps to receive payment, such as appealing the denials. Such appeals and other processes are time-consuming and expensive, and may not result in payment. Third-party payors may perform audits of historically paid claims and attempt to recoup funds years after the funds were initially distributed if the third-party payors believe the funds were paid in error or determine that our Lineagen products and diagnostic assays were medically unnecessary. If a third-party payor audits our claims and issues a negative audit finding, and we are not able to overturn the audit findings through appeal, the recoupment may result in a material adverse effect on our revenue. Additionally, in some cases commercial third-party payors for whom we are not a participating provider may elect at any time to review claims previously paid and determine the amount they paid was too much. In these situations, the third-party payor will typically notify us of their decision and then offset whatever amount they determine they overpaid against amounts they owe us on current claims. We cannot predict when, or how often, a third-party payor might engage in these reviews and we may not be able to dispute these retroactive adjustments.

Additionally, coverage policies and third-party payor reimbursement rates may change at any time. Therefore, even if favorable coverage and reimbursement status is attained, less favorable coverage policies and reimbursement rates may be implemented in the future that may adversely affect the coverage and reimbursement of our Lineagen products and diagnostic assays.

If diagnostic procedures that are enabled by our Saphyr technology are subject to unfavorable pricing regulations or third-party payor coverage and reimbursement policies, our business could be harmed.

Currently, our Saphyr product is for research use only, but clinical laboratories may acquire our instrumentation through a capital purchase or capital lease and use the Saphyr and direct label stain chemistry to create their own potentially reimbursable products, such as laboratory developed tests for in vitro diagnostics. Our customers may generate revenue for these testing services by seeking the necessary approval of their product from the FDA or the Centers for Medicare & Medicaid Services, or CMS, along with coverage and reimbursement from third-party payors, including government health programs and private health plans. The ability of our customers to commercialize diagnostic tests based on our technology will depend in part on the extent to which coverage and reimbursement for these tests will be available from such third-party payors.

In the U.S., molecular testing laboratories have multiple options for reimbursement coding, but we expect that the primary codes used will be the genomic sequencing procedure codes, or GSPs. The American Medical Association, or AMA, added GSPs to its clinical laboratory fee schedule in 2015. In addition, CMS recently issued a coverage determination providing for the reimbursement of next-generation sequencing for certain cancer diagnostics using an FDA-approved in vitro diagnostic test. Private health plans often follow CMS coverage and reimbursement guidelines to a substantial degree, and it is difficult to predict what CMS will decide with respect to the coverage and reimbursement of any products our customers try to commercialize.

In Europe, coverage for molecular diagnostic testing is varied. Countries with statutory health insurance (e.g., Germany, France, The Netherlands) tend to be more progressive in technology adoption with favorable reimbursement for molecular diagnostic testing. In countries such as the United Kingdom with tax-based insurance, adoption and reimbursement for molecular diagnostic testing is not uniform and is influenced by local budgets.

Ultimately, coverage and reimbursement of new products is uncertain, and whether laboratories that use our instruments to develop their own products will attain coverage and adequate reimbursement is unknown. In the U.S., there is no uniform policy for determining coverage and reimbursement. Coverage can differ from payor to payor, and the process for determining whether a payor will provide coverage may be separate from the process for setting the reimbursement rate. In addition, the U.S. government, state legislatures and foreign governments have shown significant interest in implementing cost containment programs to limit the growth of government-paid healthcare costs, including price controls and restrictions on reimbursement. We cannot be sure that coverage will be available for any diagnostic tests based on our technology, and, if coverage is available, the level of payments. Reimbursement may impact the demand for those tests. If coverage and reimbursement is not

available or is available only to limited levels, our customers may not be able to successfully commercialize any tests for which they receive marketing authorization.

Healthcare legislative or regulatory reform measures may have a negative impact on our business and results of operations.

In March 2010, the ACA became law. The ACA is a sweeping law intended to broaden access to health insurance, reduce or constrain the growth of healthcare spending, enhance remedies against fraud and abuse, add new transparency requirements for the healthcare and health insurance industries, impose new taxes and fees on the health industry and impose additional health policy reforms. For example, the ACA contained a 2.3% excise tax on certain entities that manufacture or import medical devices offered for sale in the U.S., with limited exceptions, which has been permanently eliminated as part of the 2020 spending package.

There remains judicial and Congressional challenges to certain aspects of the ACA, as well as efforts by the Trump administration to repeal or replace certain aspects of the ACA. Since January 2017, President Trump has signed several Executive Orders and other directives designed to delay the implementation of certain provisions of the ACA or otherwise circumvent some of the requirements for health insurance mandated by the ACA. Concurrently, Congress has considered legislation that would repeal or repeal and replace all or part of the ACA. While Congress has not passed comprehensive repeal legislation, it has enacted laws that modify certain provisions of the ACA such as removing penalties, starting January 1, 2019, for not complying with the ACA's individual mandate to carry health insurance. On December 14, 2018, a Texas U.S. District Court Judge ruled that the ACA is unconstitutional in its entirety because the "individual mandate" was repealed by Congress as part of the Tax Cuts and Jobs Act. Additionally, on December 18, 2019, the U.S. Court of Appeals for the 5th Circuit upheld the District Court ruling that the individual mandate was unconstitutional and remanded the case back to the District Court to determine whether the remaining provisions of the ACA are invalid as well. On March 2, 2020, the United States Supreme Court granted the petitions for writs of certiorari to review this case. It is unclear how such litigation and other efforts to repeal and replace the ACA will impact the ACA and our business.

In addition, other legislative changes have been proposed and adopted since the ACA was enacted. For example, on April 1, 2014, the Protecting Access to Medicare Act of 2014, or PAMA, was signed into law, which, among other things, significantly altered the payment methodology under the Medicare Clinical Laboratory Fee Schedule, or CLFS. PAMA requires certain laboratories performing clinical diagnostic laboratory tests to report to CMS the amounts paid by private payors for laboratory tests. Beginning January 1, 2018, CMS will use reported private payor pricing to periodically revise payment rates under the CLFS.

We expect that the ACA, as well as other healthcare reform measures that may be adopted in the future, may result in more rigorous coverage criteria and additional downward pressure on the price that we or our collaborators will receive for any cleared or approved product. Further, it is possible that additional governmental action is taken in response to the COVID-19 pandemic. Any reduction in payments from Medicare or other government programs may result in a similar reduction in payments from private payors. The implementation of cost containment measures or other healthcare reforms may prevent our customers from successfully commercializing any tests for which they receive approval, which could prevent us from being able to generate revenue and attain profitability.

Complying with numerous regulations pertaining to our business is an expensive and time-consuming process, and any failure to comply could result in substantial penalties.

We are subject to the Clinical Laboratory Improvement Amendment of 1988, or CLIA, which is a federal law regulating clinical laboratories that perform testing on specimens derived from humans for the purpose of providing information for the diagnosis, prevention or treatment of disease. Our clinical laboratory is located in Utah and must be certified under CLIA in order for us to perform testing on human specimens. CLIA is intended to ensure the quality and reliability of clinical laboratories in the United States by mandating specific standards in the areas of personnel qualifications, administration, and participation in proficiency testing, patient test management, quality control, quality assurance and inspections. We have a current certificate of compliance under CLIA to perform cytogenetics. To renew this certificate, we are subject to survey and inspection every two years. Moreover, CLIA inspectors may make periodic inspections of our clinical laboratory outside of the renewal process. The failure to comply with CLIA requirements can result in enforcement actions, including the revocation, suspension, or limitation of our CLIA certificate of compliance, as well as a directed plan of correction, state on-site monitoring, civil money penalties, civil injunctive suit and/or criminal penalties. We must maintain CLIA compliance and certification to be eligible to bill for assays provided to Medicare beneficiaries. If we were to be found out of compliance with CLIA program requirements and subjected to sanctions, our business and reputation could be harmed. Even if it were possible for us to bring our laboratory back into compliance, we could incur significant expenses and potentially lose revenue in doing so.

We hold laboratory licenses from the states of California, Pennsylvania, and Maryland, to test specimens from patients in those states or received from ordering physicians in those states. Other states, such as Rhode Island and New York, may have similar requirements or may adopt similar requirements in the future. Finally, we may be subject to regulation in foreign jurisdictions if we seek to expand international distribution of our assays outside the United States.

If we were to lose our CLIA certification or state laboratory licenses, whether as a result of a revocation, suspension or limitation, we would no longer be able to offer our assays, which would limit our revenues and harm our business. If we were to lose, or fail to obtain, a license in any other state where we are required to hold a license, we would not be able to test specimens from those states. If we were to lose our CAP accreditation, our reputation for quality, as well as our business, financial condition and results of operations, could be significantly and adversely affected.

We are subject to federal and state healthcare fraud and abuse laws and other federal and state laws applicable to our business activities, including our marketing practices. If we are unable to comply, or have not complied, with such laws, we could face substantial penalties.

Our operations are subject to various federal and state fraud and abuse laws, including, without limitation, the federal and state anti-kickback statutes and false claims laws. These laws may impact, among other things, our sales and marketing and education programs, and our financial and business relationships with health care professionals. The laws that may affect our ability to operate include, but are not limited to:

- the federal Anti-Kickback Statute, or the AKS, which prohibits, among other things, any person or entity from knowingly and willfully soliciting, receiving, offering or paying any remuneration, directly or indirectly, overtly or covertly, in cash or in kind, to induce or reward either the referral of an individual for, or the purchase, order or recommendation of an item or service reimbursable, in whole or in part, under a federal healthcare program, such as the Medicare and Medicaid programs. The term ‘‘remuneration’’ has been broadly interpreted to include anything of value. There are a number of statutory exceptions and regulatory safe harbors protecting some common activities from prosecution, however these are drawn narrowly. Additionally, a person or entity does not need to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation. In addition, the ACA codified case law that a claim including items or services resulting from a violation of the AKS constitutes a false or fraudulent claim for purposes of the federal False Claims Act, or the FCA;

- the Stark Law, which prohibits a physician from making a referral for certain designated health services covered by the Medicare or Medicaid program, including laboratory and pathology services, if the physician or an immediate family member of the physician has a financial relationship with the entity providing the designated health services and prohibits that entity from billing, presenting or causing to be presented a claim for the designated health services furnished pursuant to the prohibited referral, unless an exception applies;

- federal civil and criminal false claims laws and civil monetary penalty laws, such as the FCA, which can be enforced by private citizens through civil qui tam actions, prohibits individuals or entities from, among other things, knowingly presenting, or causing to be presented through distribution of template medical necessity language or other coverage and reimbursement information, false, fictitious or fraudulent claims for payment or approval by the federal government, including federal health care programs, such as Medicare and Medicaid, and knowingly making, using or causing to be made or used a false record or statement material to a false or fraudulent claim, or knowingly making a false statement to improperly avoid, decrease or conceal an obligation to pay money to the federal government;

- the Eliminating Kickbacks in Recovery Act of 2018, or EKRA, prohibits payments for referrals to recovery homes, clinical treatment facilities, and laboratories. EKRA’s reach extends beyond federal health care programs to include private insurance (i.e., it is an “all payor” statute). For purposes of EKRA, the term “laboratory” is defined broadly and without reference to any connection to substance use disorder treatment. The law includes a limited number of exceptions, some of which closely align with corresponding federal Anti-Kickback Statute exceptions and safe harbors, and others that materially differ;

- HIPAA, which, among other things, imposes criminal liability for executing or attempting to execute a scheme to defraud any healthcare benefit program, including private third-party payors, knowingly and willfully embezzling or stealing from a healthcare benefit program, willfully obstructing a criminal investigation of a healthcare offense, and knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false, fictitious or fraudulent statement or representation, in connection with the delivery of or payment for healthcare benefits, items or services. Like the AKS, a person or entity does not need to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation;

- HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act, or HITECH, and their implementing regulations, which imposes privacy, security and breach reporting obligations with respect to individually identifiable health information upon entities subject to the law, such as health plans, healthcare clearinghouses and certain healthcare providers, known as covered entities, and their respective business associates, individuals or entities that perform services for them that involve individually identifiable health information as well as their covered subcontractors;

- state laws that prohibit other specified practices, such as billing physicians for tests that they order or providing tests at no or discounted cost to induce physician or patient adoption; insurance fraud laws; waiving coinsurance, copayments, deductibles, and other amounts owed by patients; billing a state Medicaid program at a price that is higher than what is charged to one or more other third-party payors employing, exercising control over or splitting professional fees with licensed professionals in violation of state laws prohibiting fee splitting or the corporate practice of medicine and other professions; and

- federal and state consumer protection and unfair competition laws, which broadly regulate marketplace activities and activities that potentially harm consumers;

- the prohibition on reassignment of Medicare claims, which, subject to certain exceptions, precludes the reassignment of Medicare claims to any other part;

- state and foreign law equivalents of each of the above federal laws, such as anti-kickback and false claims laws, that may impose similar or more prohibitive restrictions, and may apply to items or services reimbursed by any non-governmental third-party payors, including private insurers; and

- federal, state and foreign laws that govern the privacy and security of health information or personally identifiable information in certain circumstances, including state health information privacy and data breach notification laws which govern the collection, use, disclosure, and protection of health-related and other personal information, many of which differ from each other in significant ways and often are not pre-empted by HIPAA, thus complicating compliance efforts.

As a clinical laboratory, our business practices may face additional scrutiny from government regulatory agencies such as the Department of Justice, the U.S. Department of Health and Human Services Office of Inspector General, or OIG, and CMS. Certain arrangements between clinical laboratories and referring physicians have been identified in fraud alerts issued by the OIG as implicating the AKS. The OIG has stated that it is particularly concerned about these types of arrangements because the choice of laboratory, as well as the decision to order laboratory tests, typically are made or strongly influenced by the physician, with little or no input from patients. Moreover, the provision of payments or other items of value by a clinical laboratory to a referral source could be prohibited under the Stark Law unless the arrangement meets all criteria of an applicable exception. The government has been active in enforcement of these laws as they apply to clinical laboratories.

We have entered into consulting and scientific advisory board arrangements, speaking arrangements and clinical research agreements with physicians and other healthcare providers, including some who could influence the use of our products. Although we believe that these have been structured in compliance with applicable laws, because of the complex and far-reaching nature of these laws, regulatory agencies may view these transactions as prohibited arrangements that must be restructured, or discontinued, or for which we could be subject to other significant penalties. We could be adversely affected if regulatory agencies interpret our financial relationships with providers who may influence the ordering of and use of our products to be in violation of applicable laws.

Ensuring that our business arrangements with third parties comply with applicable healthcare laws and regulations is costly. If our operations are found to be in violation of any of these laws, we may be subject to significant penalties, including, without limitation, civil, criminal, and administrative penalties, damages, fines, disgorgement, the curtailment or restructuring of our operations, exclusion from participation in federal and state healthcare programs, additional integrity oversight and reporting obligations, imprisonment, contractual damages, and reputational harm, any of which could adversely affect our ability to operate our business and our results of operations. If any of the physicians or other healthcare providers or entities with whom we do business is found to be not in compliance with applicable laws, they may be subject to criminal, civil or administrative sanctions, including exclusions from government funded healthcare programs.

Additionally, sales of our products outside of the U.S. will subject us to similar foreign regulatory requirements.

Risks Related to Ownership of our Securities

The price of our securities may be volatile, and you could lose all or part of your investment.

The trading price of our securities is likely to be highly volatile and could be subject to wide fluctuations in response to various factors, some of which are beyond our control, including limited trading volume. In addition to the factors discussed in this Part I, Item 1A Risk Factors and elsewhere in this Annual Report, these factors include:

- our commercial progress in marketing and selling our systems, including sales and revenue trends;
- changes in laws or regulations applicable our systems;
- adverse developments related to our laboratory facilities;
- increased competition in the diagnostics services industry;
- the failure to obtain and/or maintain coverage and adequate reimbursement for our Lineagen products and diagnostic assays and patients' willingness to pay out-of-pocket in the absence of such coverage and adequate reimbursement;
- the failure of our customers to obtain and/or maintain coverage and adequate reimbursement for their services using our Saphyr systems;
- adverse developments concerning our manufacturers and suppliers;
- our inability to establish future collaborations;
- additions or departures of key scientific or management personnel;
- introduction of new testing services offered by us or our competitors;
- announcements of significant acquisitions, strategic partnerships, joint ventures or capital commitments by us or our competitors;
- our ability to effectively manage our growth;
- the size and growth, if any, of our targeted markets;
- actual or anticipated variations in quarterly operating results;
- our cash position;
- our failure to meet the estimates and projections of the investment community or that we may otherwise provide to the public;
- publication of research reports about us or our industry or positive or negative recommendations or withdrawal of research coverage by securities analysts;
- changes in the market valuations of similar companies;
- overall performance of the equity markets;
- issuances of debt or equity securities;
- sales of our securities by us or our stockholders in the future;
- trading volume of our securities;
- changes in accounting practices;
- ineffectiveness of our internal controls;

- disputes or other developments relating to proprietary rights, including our ability to adequately protect our technologies;
- significant lawsuits, including patent or stockholder litigation;
- general political and economic conditions; and
- other events or factors, many of which are beyond our control.

In addition, the stock market in general, and diagnostic and biotechnology companies in particular, have experienced extreme price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of these companies. Broad market and industry factors may negatively affect the market price of our securities, regardless of our actual operating performance. In the past, securities class action litigation has often been instituted against companies following periods of volatility in the market price of a company's securities. This type of litigation, if instituted, could result in substantial costs and a diversion of management's attention and resources, which would harm our business, operating results or financial condition.

General Risk Factors

If securities or industry analysts do not publish research or publish inaccurate or unfavorable research about our business, the price of our securities and trading volume could decline.

The trading market for our securities will depend in part on the research and reports that securities or industry analysts publish about us or our business. As a newly public company, we have only limited research coverage on our company by equity research analysts. If securities or industry analysts elect not to initiate or continue to provide coverage of our company, the trading price for our securities would likely be negatively impacted. If one or more of the analysts who covers us downgrades our securities or publishes inaccurate or unfavorable research about our business, the price of our securities may decline. If one or more of these analysts ceases coverage of our company or fails to publish reports on us regularly, demand for our securities could decrease, which might cause the price of our securities and trading volume to decline.

Future sales of substantial amounts of our common stock, or the possibility that such sales could occur, could adversely affect the market price of our common stock.

Future sales in the public market of shares of our common stock, including shares issued upon exercise of our outstanding stock options, or the perception by the market that these sales could occur, could lower the market price of our common stock or make it difficult for us to raise additional capital.

ITEM 2. UNREGISTERED SALES OF EQUITY SECURITIES AND USE OF PROCEEDS

Not applicable

ITEM 3. DEFAULTS UPON SENIOR SECURITIES

None

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable

ITEM 5. OTHER INFORMATION

None

ITEM 6. EXHIBITS

Exhibit Number	Description
3.1 (1)	Amended and Restated Certificate of Incorporation.
3.2 (1)	Amended and Restated Bylaws.
4.1 (2)	Form of Common Stock Certificate
4.2 (2)	Form of Warrant to Purchase Series B-1 Preferred Stock issued to Square 1 Bank.
4.3 (2)	Form of Warrant to Purchase Series D Preferred Stock issued to Western Alliance Bank.
4.4 (2)	Warrant to Purchase Series D-1 Preferred Stock issued to Western Alliance Bank.
4.5 (2)	Form of Warrant to Purchase Series D-1 Preferred Stock issued to Midcap Financial Trust.
4.6 (2)	Form of Warrant to Purchase Common Stock Issued to Underwriters.
4.7 (2)	Form of Warrant Certificate (included in Exhibit 4.8).
4.8 (2)	Form of Warrant Agent Agreement by and between the Registrant and American Stock Transfer & Trust Company LLC, as warrant agent.
4.9 (3)	Form of Warrant to Purchase Common Stock for Service Providers.
4.10 (4)	Form of Warrant to Purchase Common Stock for Innovatus.
4.11 (4)	Registration Rights Agreement, dated March 14, 2019, between the Company and Aspire Capital Fund, LLC.
4.12 (4)	Registration Rights Agreement, dated March 14, 2019, by and among the Company and the Innovatus Investors.
4.13 (5)	Form of Warrant to Purchase Common Stock issued to Investors in October 2019 Public Offering.
4.14 (5)	Form of Pre-Funded Warrant issued to Investors in October 2019 Public Offering.
4.15 (6)	Form of Warrants Amendment and Agreement.
4.16 (6)	Form of New Warrant issued in April 2020.
4.17 (7)	Form of Warrant to Purchase Common Stock issued to Investors in April 2020 Public Offering.
4.18 (7)	Form of Prefunded Warrant issued to Investors in April 2020 Public Offering.
10.1 (8)	At Market Issuance Sales Agreement, dated August 13, 2020, by and between the Company and Ladenburg Thalmann & Co. Inc.
10.2+ (9)	Bionano Genomics, Inc. 2020 Inducement Plan.
10.3+ (9)	Form of Stock Option Grant Notice and Stock Option Agreement under the Bionano Genomics, Inc. 2020 Inducement Plan.
10.4^	Consent and Third Amendment to Loan and Security Agreement, dated August 21, 2020, by and among the Company, Innovatus Life Sciences Lending Fund I, LP and East West Bank.
10.5^	Agreement and Plan of Merger, dated August 21, 2020, by and among the Company, Alta Merger Sub, Inc., Lineagen, Inc. and Michael S. Paul, Ph.D.
10.6+	Employment Agreement, effective as of September 1, 2020, by and between Christopher Stewart and the Company.
10.7+	Employment Agreement, effective as of August 31, 2020, by and between Alka Chaubey and the Company.
31.1*	Certification of Principal Executive Officer pursuant to Rules 13a-14(a) and 15d-14(a) promulgated under the Securities Exchange Act of 1934, as amended.
31.2	Certification of Principal Financial Officer pursuant to Rules 13a-14(a) and 15d-14(a) promulgated under the Securities Exchange Act of 1934, as amended.
32.1*	Certification of Principal Executive Officer and Principal Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101.INS	XBRL Instance Document.
101.SCH	XBRL Taxonomy Extension Schema Document.
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document.
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document.
101.LAB	XBRL Taxonomy Extension Label Linkbase Document.
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document.

(1) Incorporated by reference to the Registrant's Current Report on Form 8-K, filed with the SEC on August 24, 2018.
(2) Incorporated by reference to the Registrant's Registration Statement on Form S-1 (File No. 333-225970), as amended.
(3) Incorporated by reference to the Registrant's Current Report on Form 8-K, filed with the SEC on November 21, 2018.
(4) Incorporated by reference to the Registrant's Current Report on Form 8-K, filed with the SEC on March 14, 2019.
(5) Incorporated by reference to the Registrant's Registration Statement on Form S-1 (File No. 333-233828), as amended.
(6) Incorporated by reference to the Company's Current Report on Form 8-K, filed with the SEC on March 2, 2020.
(7) Incorporated by reference to the Registrant's Registration Statement on Form S-1 (File No. 333-237074), as amended.
(8) Incorporated by reference to the Registrant's Registration Statement on Form S-3 (File No. 333-245762).
(9) Incorporated by reference to the Registrant's Current Report on Form 8-K, filed with the SEC on August 24, 2020.

+ Indicates management contract or compensatory plan or arrangement.
^ Certain exhibits and schedules have been omitted pursuant to Item 601(a)(5) of Regulation S-K. The Registrant hereby undertakes to furnish supplementally a copy of any omitted exhibit or schedule upon request by the SEC.
* This certification is deemed not filed for purpose of section 18 of the Exchange Act or otherwise subject to the liability of that section, nor shall it be deemed incorporated by reference into any filing under the Securities Act or the Exchange Act.

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 thereunto duly authorized.

BIONANO GENOMICS, INC.

Dated: November 12, 2020

By: /s/ R. Erik Holmlin, Ph.D.
R. Erik Holmlin, Ph.D.
President and Chief Executive Officer
(Principal Executive Officer)

Dated: November 12, 2020

By: /s/ Christopher Stewart
Christoper Stewart
Chief Financial Officer
(Principal Financial and Accounting Officer)

CONSENT AND THIRD AMENDMENT TO LOAN AND SECURITY AGREEMENT

THIS CONSENT AND THIRD AMENDMENT to Loan and Security Agreement (this "**Amendment**") is entered into as of August 21, 2020, by and among INNOVATUS LIFE SCIENCES LENDING FUND I, LP, a Delaware limited partnership, as collateral agent (in such capacity, together with its successors and assigns in such capacity, "**Collateral Agent**"), and the Lenders listed on Schedule 1.1 hereof or otherwise a party hereto from time to time, BIONANO GENOMICS, INC., a Delaware corporation ("**Existing Borrower**"), LINEAGEN, INC., a Delaware corporation ("**New Borrower**") (New Borrower and Existing Borrower, individually and collectively, jointly and severally, "**Borrower**").

WHEREAS, Collateral Agent, Borrower and Lenders have entered into that certain Loan and Security Agreement, dated as of March 14, 2019 (as amended, supplemented or otherwise modified from time to time, the "**Loan Agreement**") pursuant to which Lenders have provided to Borrower certain loans in accordance with the terms and conditions thereof;

WHEREAS, Borrower and New Borrower have entered into that certain Agreement and Plan of Merger, by and among Existing Borrower, New Borrower, Alta Merger Sub, Inc., a Delaware corporation, a Delaware corporation ("**Merger Sub**") and Michael S. Paul, Ph.D dated as of August 21, 2020 (the Agreement and Plan of Merger in the form attached hereto as Exhibit A and without any further amendments to the terms thereof, the "**Merger Agreement**") pursuant to which, among other things, the Merger Sub will merge with and into the New Borrower and New Borrower shall become a wholly owned subsidiary of Existing Borrower (the "**Merger**");

WHEREAS, Borrower, Lenders and Collateral Agent desire to amend certain provisions of the Loan Agreement as provided herein and subject to the terms and conditions set forth herein;

NOW, THEREFORE, in consideration of the promises, covenants and agreements contained herein, and other good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, Borrower, Lenders and Collateral Agent hereby agree as follows:

1. **Definitions**. Capitalized terms used herein but not otherwise defined shall have the respective meanings given to them in the Loan Agreement.
2. **Joinder**.

    a. **New Borrower**. New Borrower hereby is added as a "Borrower" under the Loan Agreement. All references in the Agreement to "Borrower" shall hereafter mean and include the Existing Borrower and New Borrower individually and collectively, jointly and severally; and New Borrower shall hereafter have all rights, duties and obligations of "Borrower" thereunder.

    b. **Joinder to Loan Agreement**. New Borrower hereby joins the Loan Agreement and each of the Loan Documents, and agrees to comply with and be bound by all of the terms, conditions and covenants of the Loan Agreement and Loan Documents, as if it were originally named a "Borrower" therein (effective as of the date of this Amendment). Without limiting the generality of the preceding sentence, each New Borrower agrees that it will be jointly and severally liable, together with Existing Borrower, for the payment and performance of all obligations and liabilities of Borrower under the Loan Agreement, including, without limitation, the Obligations. Either

Borrower may, acting singly, request Credit Extensions pursuant to the Loan Agreement. Each Borrower hereby appoints the other as agent for the other for all purposes hereunder, including with respect to requesting Credit Extensions pursuant to the Loan Agreement. Each Borrower hereunder shall be obligated to repay all Credit Extensions made pursuant to the Loan Agreement, regardless

of which Borrower actually receives said Credit Extension, as if each Borrower hereunder directly received all Credit Extensions.

c. **Subrogation and Similar Rights**. Each Borrower waives (a) any suretyship defenses available to

it under the Code or any other applicable law and (b) any right to require Collateral Agent or any Lender to: (i) proceed against any Borrower or any other person; (ii) proceed against or exhaust any security; or (iii) pursue any other remedy. Collateral Agent and any Lender may each exercise or
not exercise any right or remedy it has against any Borrower or any security it holds (including the right to foreclose by judicial or non-judicial sale) without affecting any Borrower's liability. Notwithstanding any other provision of this Amendment, the Loan Agreement, the Loan Documents or any related documents, until the Obligations have been indefeasibly paid in full and at such time as each Lender's obligation to make Credit Extensions has terminated, each Borrower irrevocably waives all rights that it may have at law or in equity (including, without limitation, any law subrogating Borrower to the rights of Collateral Agent and/or Lenders under this Amendment and the Loan Agreement) to seek contribution, indemnification or any other form of reimbursement
from any other Borrower, or any other Person now or hereafter primarily or secondarily liable for any of the Obligations, for any payment made by Borrower with respect to the Obligations in connection with this Amendment, the Loan Agreement or otherwise and all rights that it might have to benefit from, or to participate in, any security for the Obligations as a result of any payment made by Borrower with respect to the Obligations in connection with this Amendment, the Loan Agreement or otherwise. Any agreement providing for indemnification, reimbursement or any other arrangement prohibited under this section shall be null and void. If any payment is made to a Borrower in contravention of this section, such Borrower shall hold such payment in trust for Collateral Agent, for the ratable benefit of Lenders, and such payment shall be promptly delivered to Collateral Agent, for the ratable benefit of Lenders, for application to the Obligations, whether matured or unmatured.

d. **Grant of Security Interest**. To secure the prompt payment and performance of all of the Obligations, New Borrower hereby grants to Collateral Agent, for the ratable benefit of Lenders, a continuing lien upon and security interest in all of New Borrower's now existing or hereafter arising rights and interest in the Collateral, whether now owned or existing or hereafter created, acquired,

or arising, and wherever located. New Borrower further covenants and agrees that by its execution hereof it shall provide all such information, complete all such forms, and take all such actions, and enter into all such agreements, in form and substance reasonably satisfactory to Collateral Agent
and each Lender that are reasonably deemed necessary by Collateral Agent or any Lender in order to grant a valid, perfected first priority security interest to Collateral Agent, for the ratable benefit
of Lenders, in the Collateral. New Borrower hereby authorizes Collateral Agent to file financing statements, without notice to Borrower, with all appropriate jurisdictions in order to perfect or
protect Collateral Agent's and/or any Lender's interest or rights hereunder, including a notice that any disposition of the Collateral, except to the extent such disposition are permitted pursuant to the Loan Agreement, by either Borrower or any other Person, shall be deemed to violate the rights of Collateral Agent and each Lender under the Code. Without limiting the generality of the foregoing, Existing Borrower hereby grants and pledges to Collateral Agent, for the ratable benefit of the Lenders, to secure the prompt payment and performance of all of the Obligations, a perfected
security interest in all of the issued and outstanding shares of capital stock of the New Borrower and shall simultaneously herewith deliver to Collateral Agent one or more original stock certificates, if certificated, representing such shares together with duly executed instruments of transfer or assignment in blank, all in form and substance satisfactory to Collateral Agent.

e. **Representations and Warranties**. New Borrower hereby represents and warrants to Collateral Agent and each Lender that all representations and warranties in the Loan Documents made on the part of Existing Borrower are true and correct in all material respects on the date hereof (as updated

by the Perfection Certificate delivered to Collateral Agent on or around the date of this Amendment, which Perfection Certificate was accepted by Collateral Agent in its discretion) with respect to Existing Borrower and New Borrower, with the same force and effect as if New Borrower were named as "**Borrower**" in the Loan Documents in addition to Existing Borrower.

3. **Consent**. Collateral Agent and the Required Lenders, hereby consent to Existing Borrower, New Borrower and Merger Sub consummating the Merger on the date hereof, strictly in accordance with the terms of the Merger Agreement and, to the extent that any waivers under the Loan Agreement or any other Loan Document, including, without limitations, Section 7.3 of the Loan Agreement, are required for Borrower to enter into the Merger Agreement and consummate the Merger, Collateral Agent and Required Lenders hereby provide such waivers. Furthermore, Collateral Agent and Required Lenders hereby consent to the repayment by Borrower, substantially contemporaneously with the consummation of the Merger, of that certain loan incurred by the New Borrower under 15 U.S.C. 636(a)(36) (the "**SBA New Borrower PPP Loan**") in the aggregate principal amount of up to $1,104,508.47; provided, however, the aggregate payments made by Borrower in connection with the repayment of the SBA New Borrower PPP Loan shall not exceed $1,150,000.00.

4. Section 6.11(b) of the Loan Agreement is hereby amended and restated in its entirety as follows:

   (b) As tested on the last date of each quarter starting with the quarter ending September 30, 2020, (i) actual TTM Revenue for the Existing Borrower for the 12-month period then ended in an amount not less than seventy-five percent (75.00%) of the projections for the same 12-month period as then ended as set forth in the Management Plan and (ii) actual TTM Revenue for the Existing Borrower and New Borrower on a consolidated basis for the 12-month period then ended in an amount not less than seventy-five percent (75.00%) of the projections for the same 12-month period as then ended as set forth in the Management Plan.

5. The following Section 12.14 is hereby added to the Loan Agreement:

   12.14 Borrower Liability. Either Borrower may, acting singly, request Credit Extensions hereunder.

Each Borrower hereby appoints the other as agent for the other for all purposes hereunder, including with respect to requesting Credit Extensions hereunder. Each Borrower hereunder shall be jointly and severally obligated to repay all Credit Extensions made hereunder, regardless of which Borrower actually receives said Credit Extension, as if each Borrower hereunder directly received all Credit Extensions. Each
Borrower waives (a) any suretyship defenses available to it under the Code or any other applicable law, and (b) any right to require Collateral Agent or any Lender to: (i) proceed against any Borrower or any other person; (ii) proceed against or exhaust any security; or (iii) pursue any other remedy. Collateral Agent and or any Lender may exercise or not exercise any right or remedy it has against any Borrower or any security it holds (including the right to foreclose by judicial or non-judicial sale) without affecting any Borrower's liability. Notwithstanding any other provision of this Agreement or other related document, each Borrower irrevocably waives all rights that it may have at law or in equity (including, without limitation, any law subrogating Borrower to the rights of Collateral Agent and the Lenders under this Agreement) to seek contribution, indemnification or any other form of reimbursement from any other Borrower, or any other Person now or hereafter primarily or secondarily liable for any of the Obligations, for any payment made
by Borrower with respect to the Obligations in connection with this Agreement or otherwise and all rights that it might have to benefit from, or to participate in, any security for the Obligations as a result of any payment made by Borrower with respect to the Obligations in connection with this Agreement or
otherwise. Any agreement providing for indemnification, reimbursement or any other arrangement prohibited under this Section shall be null and void. If any payment is made to a Borrower in contravention of this Section, such Borrower shall hold such payment in trust for Collateral Agent and the Lenders and

such payment shall be promptly delivered to Collateral Agent for application to the Obligations, whether matured or unmatured.

6. Section 13 of the Loan Agreement is hereby amended by adding the following definitions thereto in alphabetical order:

"**Existing Borrower**" is BIONANO GENOMICS, INC., a Delaware corporation.

"**New Borrower**" is LINEAGEN, INC., a Delaware corporation.

"**Third Amendment**" means that certain Consent and Third Amendment to Loan and Security Agreement, dated as of August 21, 2020, between Borrower, Collateral Agent and Required Lenders.

7. Section 13 of the Loan Agreement is hereby further amended by amending and restating the following definition therein as follows:

"**Borrower**" is individually and collectively, jointly and severally, New Borrower and the Existing

Borrower.

8. Annex X to the Loan Agreement is hereby amended and restated as set forth on Annex X hereto.

9. Notwithstanding anything herein to the contrary, none of the amendments set forth herein shall be applicable for the purposes of the Revolving Line or any provisions of the Loan Documents related to the Revolving Line unless the Bank becomes a party hereto.

10. Limitation of Amendment.

    a. The amendments and waivers set forth above are effective for the purposes set forth herein and shall be limited precisely as written and shall not be deemed to (a) be a consent to any amendment, waiver or modification of any other term or condition of any Loan Document, or (b) otherwise prejudice any right, remedy or obligation which Lenders or Borrower may now have or may have in the future under or in connection with any Loan Document, as amended hereby.

    b. This Amendment shall be construed in connection with and as part of the Loan Documents and all terms, conditions, representations, warranties, covenants and agreements set forth in the Loan Documents, are hereby ratified and confirmed and shall remain in full force and effect.

11. The Perfection Certificate delivered on the Effective Date of the Loan Agreement is hereby updated by the Perfection Certificate delivered to Collateral Agent on or around the date of this Amendment.

12. To induce Collateral Agent and Lenders to enter into this Amendment, Borrower hereby represents and warrants to Collateral Agent and Lenders as follows:

    a. The Merger Sub had no liabilities, Indebtedness or outstanding litigation immediately prior to the consummation of the Merger and the New Borrower has no material liabilities, Indebtedness or outstanding litigation immediately prior to the consummation of the Merger (this does not take away from any other representation or warranty previously made or being made herein by Borrower).

    b. Immediately after giving effect to this Amendment (a) the representations and warranties contained in the Loan Documents are true, accurate and complete in all respects as of the date hereof (except

to the extent such representations and warranties relate to an earlier date, in which case they are true and correct as of such date), and (b) no Event of Default has occurred and is continuing;

c. Borrower has the power and due authority to execute and deliver this Amendment and to perform

its obligations under the Loan Agreement, as amended by this Amendment;

d. The organizational documents of Borrower delivered to Collateral Agent on the Effective Date, and updated pursuant to subsequent deliveries by the Borrower to the Collateral Agent, remain true, accurate and complete and have not been amended, supplemented or restated and are and continue to be in full force and effect;

e. The execution and delivery by Borrower of this Amendment and the performance by Borrower of

its obligations under the Loan Agreement, as amended by this Amendment, have been duly authorized;

f. The execution and delivery by Borrower of this Amendment and the performance by Borrower of

its obligations under the Loan Agreement, as amended by this Amendment, do not and will not contravene (i) any law or regulation binding on or affecting Borrower, (ii) any contractual restriction with a Person binding on Borrower, (iii) any order, judgment or decree of any court or other governmental or public body or authority, or subdivision thereof, binding on Borrower, or (iv) the organizational documents of Borrower;

g. The execution and delivery by Borrower of this Amendment and the performance by Borrower of

its obligations under the Loan Agreement, as amended by this Amendment, do not require any order, consent, approval, license, authorization or validation of, or filing, recording or registration with, or exemption by any governmental or public body or authority, or subdivision thereof, binding on Borrower, except as already has been obtained or made; and

h. This Amendment has been duly executed and delivered by Borrower and is the binding obligation of Borrower, enforceable against Borrower in accordance with its terms, except as such enforceability may be limited by bankruptcy, insolvency, reorganization, liquidation, moratorium

or other similar laws of general application and equitable principles relating to or affecting creditors' rights.

13. Except as expressly set forth herein, the Loan Agreement shall continue in full force and effect without alteration or amendment. This Amendment and the Loan Documents represent the entire agreement about this subject matter and supersede prior negotiations or agreements.

14. Borrower hereby covenants to the following:

a. On the date hereof, deliver to Collateral Agent, copies of the filed and stamped: certificate of incorporation of Existing Borrower effective as of the Merger, certificate of incorporation and conversion of New Borrower effective as of the Merger and certificate of Merger, certificates of good standing for New Borrower for the State of Delaware and any other state in which it is required to be qualified to do business.

b. On or before five days from the date hereof, deliver a copy of the form W-9 for the New Borrower to Collateral Agent.

c. On or before ten days from the date hereof, deliver to Collateral Agent an original stock certificate representing all outstanding shares of the New Borrower, together with duly executed instrument of transfer or assignment in blank, all in form and substance satisfactory to Collateral Agent.

d. On or before twenty days from the date hereof, deliver to Collateral Agent duly executed original Control Agreements with respect to any Collateral Accounts maintained by New Borrower.

e. On or before thirty days from the date hereof, Borrower shall deliver evidence satisfactory to Collateral Agent that the insurance policies for New Borrower required by Section 6.5 of the Loan Agreement are in full force and effect, together with appropriate evidence showing loss payable and/or additional insured clauses or endorsements in favor of Collateral Agent.

f. On or before thirty days from the date hereof, Borrower shall deliver to Collateral Agent (i) a landlord's consent executed in favor of Collateral Agent in respect of all of New Borrower's leased locations where New Borrower or any Subsidiary (other than Existing Borrower) maintains Collateral having a book value in excess of Two Fifty Thousand Dollars ($250,000.00) or its books or records (including, without limitation, its headquarters); and (ii) a bailee waiver executed in favor of Collateral Agent in respect of each third party bailee where New Borrower or any Subsidiary (other than Existing Borrower) maintains Collateral having a book value in excess of Two Hundred Fifty Thousand Dollars ($250,000.00).

15. The Borrower hereby remises, releases, acquits, satisfies and forever discharges the Lenders and Collateral Agent, their agents, employees, officers, directors, predecessors, attorneys and all others acting or purporting to act on behalf of or at the direction of the Lenders and Collateral Agent ("**Releasees**"), of and from any and all manner of actions, causes of action, suit, debts, accounts, covenants, contracts, controversies, agreements, variances, damages, judgments, claims and demands whatsoever, in law or in equity, which any of such parties ever had, now has or, to the extent arising from or in connection with any act, omission or state of facts taken or existing on or prior to the date hereof, may have after the date hereof against the Releasees, for, upon or by reason of any matter, cause or thing whatsoever relating to or arising out of the Loan Agreement or the other Loan Documents on or prior to the date hereof through the date hereof. Without limiting the generality of the foregoing, the Borrower waives and affirmatively agrees not to allege or otherwise pursue any defenses, affirmative defenses, counterclaims, claims, causes of action, setoffs or other rights they do, shall or may have as of the date hereof, including the rights to contest: (a)

the right of Collateral Agent and each Lender to exercise its rights and remedies described in the Loan Documents; (b) any provision of this Amendment or the Loan Documents; or (c) any conduct of the
Lenders or other Releasees relating to or arising out of the Loan Agreement or the other Loan Documents on or prior to the date hereof.

16. This Amendment shall be deemed effective as of the date hereof upon (a) the due execution and delivery to Collateral Agent of this Amendment by each party hereto, (b) Borrower's payment of all Lenders'

Expenses incurred through the date hereof, which may be debited (or ACH'd) from the Designated Deposit Account in accordance with Section 2.3(d) of the Loan Agreement, (c) fulfillment of all conditions of Section 3.1(d), (e), (f) and (g) of the Loan Agreement (as they may be applicable to the New Borrower) and Section 3.2 of the Loan Agreement (as they may be applicable to New Borrower, (d) delivery of evidence
to Collateral Agent (which evidence must be reasonably acceptable to Collateral Agent) that all Indebtedness of New Borrower to Silicon Valley Bank and pursuant to any promissory notes issued by
New Borrower shall have been fully satisfied and extinguished and any and all Liens with respect to the foregoing shall have been terminated (provided, however, the evidence of termination of Liens may be delivered no later than August 25, 2020) and (e) delivery of evidence to Collateral Agent (which evidence must be reasonably acceptable to Collateral Agent) that the SBA New Borrower PPP Loan has been repaid in full and all obligations with respect thereto have been fully satisfied.

17. This Amendment may be executed in any number of counterparts, each of which shall be deemed an original, and all of which, taken together, shall constitute one and the same instrument.

18. This Amendment and the rights and obligations of the parties hereto shall be governed by and construed in accordance with the laws of the State of New York.

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IN WITNESS WHEREOF, the parties hereto have caused this Consent and Third Amendment to Loan

and Security Agreement to be executed as of the date first set forth above.

BORROWER:

BIONANO GENOMICS, INC.

By /s/ Erik Holmlin
Name: R. Erik Holmlin, Ph.D.
Title: President and Chief Executive Officer

BORROWER:

LINEAGEN, INC.

By /s/ Erik Holmlin
Name: R. Erik Holmlin, Ph.D.
Title: President and Chief Executive Officer

COLLATERAL AGENT AND REQUIRED LENDERS:

INNOVATUS LIFE SCIENCES LENDING FUND I, LP

By: Innovatus Life Sciences GP, LP
Its: General Partner

By
Name:
Title:

IN WITNESS WHEREOF, the parties hereto have caused this Consent and Third Amendment to Loan

and Security Agreement to be executed as of the date first set forth above.

BORROWER:

BIONANO GENOMICS, INC.

By __
Name: __
Title: __

BORROWER:

LINEAGEN, INC.

By __
Name: __
Title: __

COLLATERAL AGENT AND REQUIRED LENDERS:

INNOVATUS LIFE SCIENCES LENDING FUND I, LP

By: Innovatus Life Sciences GP, LP
Its: General Partner

By /s/ Andrew Dym__
Name: Andrew Dym__
Title: Authorized Signatory__

EXHIBIT A

AGREEMENT AND PLAN OF MERGER

PLEASE SEE ATTACHED

ANNEX X

MANAGEMENT PLAN

PLEASE SEE ATTACHED

AGREEMENT AND PLAN OF MERGER

by and among

BIONANO GENOMICS, INC.

ALTA MERGER SUB, INC.

LINEAGEN, INC.

and

MICHAEL S. PAUL PH.D.,

Solely in its capacity as the Representative

Dated as of August 21, 2020

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AGREEMENT AND PLAN OF MERGER

THIS AGREEMENT AND PLAN OF MERGER (this "Agreement"), dated as of August 21, 2020, is entered into by and among Bionano Genomics, Inc., a Delaware corporation (the "Parent"), Alta Merger Sub, Inc., a Delaware corporation and wholly-owned Subsidiary of the Parent (the "Purchaser"), Lineagen, Inc., a Delaware corporation (the "Company"), and Michael S. Paul, Ph.D., solely in his capacity as the Representative. The Parent, the Purchaser, the Company and Representative are collectively referred to herein as the "Parties".

WHEREAS, the Purchaser and the Company desire for the Parent to acquire the Company upon the terms and subject to the conditions set forth in this Agreement;

WHEREAS, to effectuate such acquisition, the Purchaser will be merged with and into the Company, with the Company continuing as the surviving corporation in such merger (the "Merger"); and

WHEREAS, prior to the execution of this Agreement, and as a condition to the willingness of Parent to enter into this Agreement, the Company has obtained and delivered to Parent a true, correct and complete copy of an irrevocable written consent in the form attached hereto as Exhibit A (the "Executed Written Consent") of (i) the holders of at least eighty percent (80%) of the outstanding Company Common Stock and the Company Preferred Stock voting together as a single class on an as converted basis; (ii) a majority of the outstanding Company Preferred Stock (voting together as a single class on an as converted basis); and (iii) the holders of at least sixty-six percent (66%) of the outstanding Series C-1 Preferred Stock (voting as a separate class), adopting, among other things, this Agreement.

NOW, THEREFORE, in consideration of the foregoing and the representations, warranties, covenants and agreements set forth herein, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Parties hereby agree as follows:

Article I.

DEFINITIONS

i.Certain Definitions

. The following terms, when used in this Agreement and the Exhibits, Schedules, and other documents delivered in connection herewith, have the meanings assigned to them in this Section 1.1.

"Affiliate" when used with respect to any party means any person who is an "affiliate" of that party within the meaning of Rule 405 promulgated under the Securities Act of 1933, as amended (the "Securities Act").

"Anti-Corruption/AML Laws" means the U.S. Foreign Corrupt Practices Act of 1977, as amended, the Anti-Kickback Act of 1986, as amended, the U.S. Domestic Bribery Statute (18 U.S.C. § 201), the U.S. Travel Act (18 U.S.C. § 1952), the UK Bribery Act of 2010, the UK Proceeds of Crime Act 2002, the USA PATRIOT Act, and all other applicable anti-bribery, anti-corruption, anti-kickback, anti-money laundering, anti-terrorist financing, anti-fraud, anti-embezzlement, or conflict of interest Laws in all of the jurisdictions in which the Company has operations, including without limitation the Anti-

Bribery Laws of the People's Republic of China or any Laws of similar effect, and the related regulations and published interpretations thereunder.

"Business Day" means any day, other than Saturday, Sunday or any other day on which banks located in the State of Delaware or in the State of Utah are authorized or required to close.

"CARES Act" means the Coronavirus Aid, Relief, and Economic Security Act of 2020, Pub. L. 116-136.

"Closing Assumed Liabilities" means an amount, as determined in accordance with GAAP and without duplication, equal to the sum of (i) all liabilities of the Company, including, but not limited to, all accounts payable, accrued or deferred expenses, payroll liabilities, Tax liabilities, deferred revenue, dividends payable or other similar obligations or current liabilities (excluding (A) Company Transaction Costs, (B) Closing Date Indebtedness, (C) Company Trade Liabilities and (D) liabilities and obligations pursuant to capital leases not classified as current liabilities in accordance with GAAP) as of the Closing Date, (ii) Closing Date Indebtedness, (iii) Company Trade Liabilities, and (iv) Parent Closing Cash Payments, in each case, to the extent not paid at or prior to Closing, including pursuant to Section 3.5(d), and as adjusted for any settlements thereof; provided that, notwithstanding anything to the contrary, all (1) accrued commissions, bonuses, vacation, sick time, paid time off and similar employee entitlements and (2) unpaid Pre-Closing Taxes (other than Transaction Payroll Taxes included in Company Transaction Costs) shall be treated as liabilities taken into account in the calculation of Closing Assumed Liabilities.

"Closing A/R and Cash" means the sum of all cash and cash equivalents of the Company and accounts receivable of the Company as of the Closing, as computed in accordance with GAAP.

"Closing Date Indebtedness" means the Indebtedness of the Company as of the Closing Date.

"Code" means the Internal Revenue Code of 1986, as amended, and the rules and regulations promulgated thereunder.

"Company Convertible Notes" means the Company Series D Convertible Notes and the Company Series E Convertible Notes.

"Company Data" means all data (including Personal Data) collected, generated, received or stored or otherwise Processed by the Company in the operation of its business.

"Company Material Adverse Effect" means any change, occurrence, event, circumstance, development or effect that, individually or in the aggregate with all other changes, occurrences, events, circumstances, developments or effects occurring that has a material adverse effect on the business, assets, liabilities, capitalization, financial condition or results of operations of the Company; provided, however, that none of the following shall be deemed either alone or in combination with any of the following to constitute a Company Material Adverse Effect: (i) any adverse effect that results from general economic, business, financial or market conditions; (ii) any adverse effect that results from conditions in any of the industries or industry sectors in which the Company operates; (iii) any adverse effect resulting from any act of terrorism, war, national or international calamity pandemic, epidemic or disease outbreak (including the COVID-19 Pandemic); (iv) any adverse effect resulting from any changes in GAAP; or (v) any failure to meet internal projections, estimates or forecasts of revenues, earnings, or other measures of financial or operating performance for any period (except that the underlying causes,

facts and circumstances of such failure may, to the extent not otherwise described in clauses (i) through (iv), constitute, or be taken into account in determining whether there is, or has been, a Company Material Adverse Effect); provided, however, that any adverse effect referred to in clauses (i) through (iv) immediately above shall be taken into account in determining whether a Company Material Adverse Effect has occurred to the extent that such adverse effect has a disproportionate effect on the Company compared to companies in the industries in which the Company conducts its businesses. For the avoidance of doubt, the terms "material", "materially" or "materiality" as used in this Agreement with an initial lower case "m" shall have their respective customary and ordinary meanings, without regard to the meanings ascribed to Company Material Adverse Effect in the prior sentence of this paragraph.

"Company Series D Convertible Notes" means the outstanding convertible promissory notes of the Company issued pursuant to the (a) that certain Note and Warrant Purchase Agreement, dated May 25, 2018, by and among Lineagen, Inc. and the persons and entities named on the Schedule of Purchasers attached thereto, (b) that certain Note and Warrant Purchase Agreement, dated July 19, 2018, by and among Lineagen, Inc. and the persons and entities named on the Schedule of Purchasers attached thereto, (c) that certain Note and Warrant Purchase Agreement, dated December 13, 2018, by and among Lineagen, Inc. and the persons and entities named on the Schedule of Purchasers attached thereto and (d) that certain Note and Warrant Purchase Agreement, dated February 12, 2019, by and among Lineagen, Inc. and the persons and entities named on the Schedule of Purchasers attached thereto; as amended by (i) that certain Amendment No. 1 to Convertible Promissory Notes, dated November 20, 2018, (ii) that certain Omnibus Amendment No. 2 to Convertible Promissory Notes, dated February 12, 2019, (iii) that certain Omnibus Amendment No. 3 to Convertible Promissory Notes, dated May 30, 2019, and (iv) that certain Omnibus Amendment No. 4 to Convertible Promissory Notes, dated April 15, 2020.

"Company Series E Convertible Notes" means the outstanding convertible promissory notes of the Company issued pursuant to that certain Note and Warrant Purchase Agreement, dated May 30, 2019, by and among Lineagen, Inc. and the persons and entities named on the Schedule of Purchasers attached thereto; as amended by that certain Amendment No. 1 to Note Purchase Agreement, dated October 9, 2019 and that certain Omnibus Amendment No. 4 to Convertible Promissory Notes, dated April 15, 2020.

"Company Trade Liabilities" means the liabilities, obligations or commitments incurred and payable by the Company (other than Company Transaction Costs, Indebtedness and obligations, liabilities or commitments incurred in connection with the PPP Loan) in the amounts and to the service providers and trade creditors of the Company (the "Trade Creditors") listed on Section 1.1 of the Company Disclosure Schedule.

"Company Transaction Costs" means all costs, fees, expenses, payments, or expenditures of the Company incurred, but not paid, at or prior to the Closing (whether or not invoiced) in connection with this Agreement and the consummation of the transactions contemplated hereby, including: (a)(i) fees and expenses of advisors, investment bankers, lawyers and accountants arising out of, relating to or incidental to the discussion, evaluation, financing, negotiation and documentation of the transactions contemplated hereby; (ii) any broker's, finder's, financial advisor's or other similar fee, bonus or commission; (iii) all payments to current or former directors, officers, employees and consultants arising out of, or in connection with, the transactions contemplated hereby (other than (A) any such amounts that become payable post-Closing due to actions taken with respect to such individuals at or after the Closing by Parent, the Surviving Corporation or any of their respective Affiliates, and/or (B) any and all severance payments that are payable in connection with or as a result of the termination of any employee(s) of the Company on or prior to the Closing who the Parent or the Purchaser requested be terminated on or prior

to the Closing); (iv) Transaction Payroll Taxes or (v) fees and expenses related to the obtaining of any third-party vendor consent to be obtained in connection with the transactions contemplated hereby, and (b) that arise or are expected to arise, are triggered or become due or payable, in whole or in part, as a direct or indirect result of the consummation (whether alone or in combination with any other event or circumstance) of the Merger or any of the other transactions contemplated hereby, other than as a result of actions taken by Parent or its Affiliates following

the Closing; provided, however, "Company Transaction Costs" shall not include (x) any fees or other compensation payable to the Escrow Agent, which shall be paid solely by Parent pursuant to Section 3.4 of the Escrow Agreement, (y) any obligations, liabilities or commitments incurred in connection with the PPP Loan, including, without limitation, repayment obligations that arise or are expected to arise, are triggered or become due or payable, in whole or in part, as a direct or indirect result of the consummation (whether alone or in combination with any other event or circumstance) of the Merger or any of the other transactions contemplated hereby, or (z) any costs, fees or expenses, including audit or accounting costs, incurred or payable by the Surviving Corporation arising from or relating to any statements, reports, schedules, forms or other documents (including exhibits and schedules thereto and all other information incorporated by reference), required to be filed or furnished with the SEC by Parent or any of its Subsidiaries or otherwise comply with SEC rules following the Closing.

"Contract" means any contract, agreement, instrument, license, lease, sublease, note, bond, indenture, deed of trust, mortgage, loan agreement or other legally binding commitment (including any binding plan, arrangement or agreement in principle), whether written or oral.

"COVID-19" means the 2019 Novel Coronavirus or 2019-nCoV.

"COVID-19 Pandemic" means the outbreak of the disease caused by COVID-19 and which was declared a pandemic on March 11, 2020 by the World Health Organization.

"Deferred Payroll Taxes" means the "applicable employment taxes" (as defined in Section 2302(d) of the CARES Act) payable by the Company that (x) relate to the portion of the "payroll tax deferral period" (as defined in Section 2302(d) of the CARES Act) that occurs prior to the Closing and (y) are payable following the Closing as permitted by Section 2302(a) of the CARES Act, calculated without giving effect to any tax credits afforded under the CARES Act, the Families First Coronavirus Response Act or any similar applicable federal, state or local Law to reduce the amount of any such Taxes payable or owned.

"DGCL" means the Delaware General Corporation Law.

"Employee Benefit Plan" means each plan, program, policy, practice, Contract, agreement or other arrangement providing for direct or indirect compensation, severance benefits (including redundancy), notice or termination pay, deferred compensation, performance awards, stock or stock-related options or awards, pension benefits, retirement benefits, profit-sharing benefits, savings benefits, disability benefits, medical insurance, dental insurance, health insurance, life insurance, death benefit, other insurance, repatriation or expatriation benefits, tax gross ups, welfare benefits, part time and early retirement scheme fringe benefits or other employee benefits or remuneration of any kind, whether written, unwritten or otherwise, qualified or nonqualified, funded or unfunded, including, but not limited to, each "employee benefit plan," within the meaning of Section 3(3) of the Employee Retirement Income Security Act of 1974, as amended ("ERISA") which is or has been maintained, sponsored, contributed to, or required to be contributed to, by the Company for the benefit of any for any current or former employees, directors, independent contractors, consultants or other persons engaged by the Company or under which the Company has any liability.

"Entity" means any corporation (including any nonprofit corporation), general partnership, limited partnership, limited liability partnership, joint venture, estate, trust, company (including any

limited liability company or joint stock company), firm or other enterprise, association, organization or other legal entity.

"Environmental Law" means any federal, state or local Law relating to the environment or occupational health and safety, including any statute, regulation, administrative decision or order pertaining to: (a) the treatment, storage, disposal, release, manufacture, use, discharge, emission, generation and transportation of industrial, toxic, infectious, biological, radioactive or Hazardous Materials or substances or solid, medical, mixed or hazardous waste; (b) air, water, soil and noise pollution or contamination; and (c) the protection of wild life, marine life and wetlands, including all endangered and threatened species.

"ERISA Affiliate" means any Entity which is, or at any applicable time was, a member of (a) a controlled group of corporations (as defined in Section 414(b) of the Code), (b) a group of trades or businesses under common control (as defined in Section 414(c) of the Code), or (c) an affiliated service group (as defined under Section 414(m) of the Code or the regulations under Section 414(o) of the Code), any of which includes or included the Company.

"Escrow Agent" means Wilmington Trust, N.A.

"Fraud" means, with respect to any Person, common law fraud under the common law of the State of Delaware against such Person based on a representation or warranty in this Agreement.

"Fundamental Representations" means the representations and warranties set forth in Section 4.1 (Organization, Standing and Power), Section 4.2 (Capitalization), Section 4.4(a)-(c) (Authority; No Conflict; Required Filings and Consents) (other than Section 4.4(b)(ii)), Section 4.26 (Brokers; Schedule of Fees and Expenses), Section 5.1 (Organization, Standing and Power), Section 5.2(a)-(b) (Authority; No Conflict; Required Filings and Consents) (other than Section 5.2(b)(ii)), and Section 5.5 (Brokers).

"GAAP" means generally accepted accounting principles in the United States as in effect from

time to time.

"Governmental Entity" means a foreign or domestic court, arbitrational tribunal, administrative agency or commission or other governmental, regulatory or administrative authority, agency, commission or instrumentality; provided that no Payor acting in its capacity as such shall be deemed a Governmental Entity.

"Hazardous Materials" means any substance that is: (a) listed, classified, regulated or which falls within the definition of a "hazardous substance," "hazardous waste" or "hazardous material" pursuant to any Environmental Law; or (b) any petroleum product or by-product, asbestos-containing material, lead-containing paint, pipes or plumbing, polychlorinated biphenyls, radioactive materials or radon.

"HIPAA" means the Health Insurance Portability and Accountability Act of 1996 and all regulations promulgated hereunder, including the Privacy Standards (45 C.F.R. Parts 160 and 164, Subparts A and E), the Electronic Transactions Standards (45 C.F.R. Parts 160 and 162), the Security Standards (45 C.F.R. Parts 160 and 164, Subparts A and C), and the Breach Notification Standards (45 C.F.R. Part 164 Subpart D), all as amended by the Health Information Technology for Economic and Clinical Health Act of 2009 (HITECH Act).

"Indebtedness" means, without duplication, any obligations of the Company: (a) for borrowed money, whether or not represented by bonds, debentures, notes or other securities (whether or not convertible into any other security), from a financial institution, employee, Affiliate or other Person (including all obligations for principal, interest, premiums, penalties, fees, expenses and breakage costs); (b) evidenced by any note, bond, debenture or other debt security; (c) for or on account of leases required to be capitalized in accordance with GAAP; (d) any obligations of a person other than the Company secured by a Lien (other than Permitted Liens) against any of the assets of the Company, whether or not obligations secured thereby will have been assumed; (e) for the reimbursement of letters of credit, bankers' acceptance or similar credit transactions; (f) under any of its cash accounts, overdraft accounts, currency or interest rate swap, hedge or similar protection device; (g) all deferred indebtedness of the Company for the payment of the purchase price of property or assets purchased (other than accounts payable incurred in the Ordinary Course of Business); (h) all premiums, penalties, fees, expenses, breakage costs and change of control payments required to be paid or payable in respect of any of the foregoing on prepayment, as a result of the consummation of the Merger or any of the other transactions contemplated hereby or in connection with any lender consent and (i) all obligations of the types described in clauses (a) through (h) above of any person other than the Company, the payment of which is guaranteed, directly or indirectly, by the Company. For the avoidance of doubt, "Indebtedness" shall not include obligations of the Company pursuant to the U.S. Small Business Administration Paycheck Protection Program Note, dated April 22, 2020, by and between the Company and Silicon Valley Bank (the "PPP Loan").

"Knowledge" means, with respect to the Company, the actual knowledge, after reasonable investigation, of Michael S. Paul, Ph.D.

"Law" means, with respect to any Person, any federal, state, local, municipal, or foreign laws, statutes, regulations, rules, executive order, injunction, judgment, order, award, decree, ruling, consent agreements, constitutions, treaties, codes, ordinances or other legally binding requirements enacted, adopted, issued, implemented, promulgated or otherwise put into effect by or under the authority of any Governmental Entity that is binding on such Person, including common law.

"Lien" means any charge, claim, encumbrance, community property interest, lien, mortgage, option, pledge, and security interests of any kind or nature whatsoever.

"Open Source Materials" means all Software and other material that is distributed as "free software," "open source software" or under a similar open source licensing or distribution model, including the GNU General Public License (GPL), GNU Lesser General Public License (LGPL), Mozilla Public License (MPL), or any other license described by the Open Source Initiative as set forth on www.opensource.org.

"Ordinary Commercial Agreement" means any customary commercial agreement entered into in the Ordinary Course of Business, such as a credit agreement or property lease, no primary purpose of which is related to the sharing, apportionment or allocation of Taxes.

"Ordinary Course of Business" means (a) prior to March 1, 2020, the ordinary course of business of the Company consistent with past practice; and (b) on or after March 1, 2020, the commercially reasonable operation of the business of the Company, including after taking into consideration the impact of the COVID-19 Pandemic and any quarantine, "shelter in place", "stay at home", workforce reduction,

shut down, closure or any other Law, order or directive having the force of Law by any Governmental Entity in connection with or in response to the COVID-19 Pandemic, including the CARES Act.

"Parent Common Stock" means the Common Stock, $0.0001 par value per share, of Parent.

"Parent Consideration Shares" means (i) the sum of (a) $5,000,000, *minus* (b) the amount (if any) by which the Closing Assumed Liabilities *plus* the Company Transaction Costs (in each case, to the extent not paid at or prior to Closing) *minus* 50% of Closing A/R and Cash exceeds Target Assumed Liabilities, *plus* (c) the amount (if any) by which the Closing Assumed Liabilities plus the Company Transaction Costs (in each case, to the extent not paid at or prior to Closing) *minus* 50% of Closing A/R and Cash is less than Target Assumed Liabilities, *divided* by (ii) the Parent Trading Price, as adjusted pursuant to Section 3.5(c).

"Parent Trading Price" means (a) if the Closing occurs on or before August 21, 2020, $0.8107, which is the volume weighted average price of one share of Parent Common Stock as reported on Nasdaq for the ten consecutive trading day period ending August 14, 2020, or (b) if the Closing does not occur on or before August 21, 2020, the volume weighted average price of one share of Parent Common Stock as reported on Nasdaq for the ten consecutive trading day period ending the third (3rd) trading day prior to the Closing Date, in each case, subject to appropriate adjustment in the event of any reclassification, share subdivision (including a reverse share split), share dividend or distribution, recapitalization, merger, issuer self-tender or exchange offer, or any other similar transaction affecting Parent Common Stock after the date hereof.

"Payor Programs" means all third party payor programs in which the Company participates (including, without limitation, Medicare, Medicaid, CHAMPUS/TRICARE, or any other federal or state health care programs, as well as Blue Cross and/or Blue Shield, managed care plans, or any other private insurance programs).

"Payors" means any third party payors who finance or reimburse the cost of health services provided by the Company pursuant to Payor Programs.

"Permit" means any franchise, license, approval, authorization, certificate of public convenience and necessity, waiver, certification or permit issued or granted by any Governmental Entity.

"Permitted Lien" means (a) carriers', warehouseman's, mechanics', materialmen's and repairmen's liens which have arisen in the Ordinary Course of Business and securing obligations incurred prior to the Closing Date that are not delinquent and that will be paid and discharged in the Ordinary Course of Business, (b) Liens imposed or promulgated by Laws with respect to real property and improvements, including zoning regulations, that, singularly or in the aggregate, will not interfere with the ownership, use or operation of such real property, and (c) Liens for Taxes that (i) are not yet due and delinquent or (ii) are being contested in good faith by appropriate proceedings and for which adequate reserves have been established and maintained on the face of the Company Balance Sheet.

"Personal Data" means information that (a) identifies, directly or indirectly, a natural person; and (b) any other information that is considered "personally identifiable information", "personal information", "protected health information", "individual health information", "personal data" or similar term under applicable Law (including all applicable Privacy and Security Laws).

"Pre-Closing Taxes" means, without duplication, (a) any and all Taxes (or the nonpayment thereof) attributable to the Company for all Pre-Closing Periods (including the portion through the end of the Closing Date for any taxable period that includes (but does not end on) the Closing Date), including any Deferred Payroll Taxes to the extent unpaid as of the Closing Date; (b) any and all Taxes of any member of an affiliated, consolidated, combined or unitary group of which the Company (or any predecessor of the Company) is or was a member on or prior to the Closing Date, including pursuant to Treasury Regulation Section 1.1502-6 or any analogous or similar state, local, or non-U.S. law or regulation; (c) any and all Taxes of any Person imposed on the Company as a transferee or successor, by Contract or pursuant to any applicable Law, which Taxes relate to an event or transaction occurring before the Closing; and (d) any and all Taxes (whether or not arising in a Pre-Closing Period) of Creditors. For purposes of allocating Taxes with respect to any Tax period that includes but does not end on the Closing Date, the portion of any Tax that is allocable to the taxable period that is deemed to end on the Closing Date will be: (i) in the case of property and other ad valorem taxes be deemed to be the amount of such Taxes for the entire Tax period multiplied by a fraction, the numerator of which is the number of calendar days during the portion of such Tax period ending on and including the Closing Date and the denominator of which is the number of calendar days in the entire Tax period, and (ii) in the case of all other Taxes, determined as though the taxable year of the Company terminated at the close of business on the Closing Date.

"Privacy and Security Laws" means each Law applicable to privacy, integrity, availability or security of Personal Data such as the breach, retention, security, protection, disposal, international transfer or other Processing of Personal Data, by the Company, including, as applicable, (a) the EU Data Protection Directive 95/46/EC, the EU General Data Protection Regulation 2016/679, the EU e-Privacy Directive 2002/58/EC as amended by Directive 2009/136/EC or further amended or replaced from time to time, and any relevant national implementing legislation, and any substantially similar local legislation, (b) Laws regarding the Processing of Personal Data in direct marketing, e-mails, text messages or telemarketing, (c) Laws regarding the secure disposal of records containing Personal Data, (d) Laws regarding international data transfers and/or on-soil requirements of Personal Data, (e) Laws regarding incident reporting and data breach notification requirements with respect to Personal Data, (f) the Payment Card Industry Data Security Standard, (g) the California Consumer Privacy Act of 2018, (h) Laws regarding unfair or deceptive practices with respect to the Processing of Personal Data; (i) state consumer protection Laws with respect to the Processing of Personal Data, and (j) HIPAA and any similar state Laws related to the privacy and security of health information.

"Process", "Processed" or "Processing" means, with respect to data (including Personal Data), the use, access, collection, processing, storage, recording, organization, adaption, modification, alteration, transfer, retrieval, consultation, disclosure, dissemination or combination of such data.

"Registrations" means authorizations, approvals, licenses, Permits, franchises, certificates, or exemptions issued by any Governmental Entity held by the Company that are required for the conduct of the business by the Company as now being conducted.

"Subsidiary" means, with respect to any party, any corporation, partnership, trust, limited liability company or other non-corporate business enterprise in which such party (or another Subsidiary of such party) holds stock or other ownership interests representing: (i) more than 50% of the voting power of all outstanding stock or ownership interests of such Entity; or (ii) the right to receive more than 50% of the net assets of such Entity available for distribution to the holders of outstanding stock or ownership interests upon a liquidation or dissolution of such Entity.

"Target Assumed Liabilities" means an amount equal to $4,000,000.

"Tax Returns" means any and all reports, returns, or declarations filed or required to be filed with a Governmental Entity and relating to Taxes, including any schedule or attachment thereto, including any amendment thereof.

"Taxes" means any and all taxes, including, without limitation, income, gross receipts, ad valorem, premium, value-added, net worth, capital stock, capital gains, documentary, recapture, alternative or add-on minimum, disability, estimated, registration, recording, excise, real property, personal property, escheat or unclaimed property, sales, use, license, lease, service, service use, transfer, withholding, employment, unemployment, insurance, social security, business license, business organization, environmental, workers compensation, payroll, profits, severance, stamp, occupation, windfall profits, customs, duties, franchise and other taxes of any kind whatsoever, and any similar charges, fees, levies or other assessments, in each case, in the nature of taxes, imposed by the United States of America or any state, local or foreign government, or any agency or political subdivision thereof, and any interest, fines, penalties, assessments or additions to tax imposed with respect to such items or any contest or dispute thereof.

"Transaction Documents" means this Agreement together with any other agreements, instruments, certificates and documents executed in connection herewith or therewith or in connection with the transactions contemplated hereby or thereby, including the Subscription Agreements and the Escrow Agreement.

"Transaction Payroll Taxes" means any employment or payroll Taxes (whether payable by the Parent, the Purchaser, or any Subsidiary of Parent on behalf of the Company), with respect to any change in control payments or other bonuses or other compensatory payments made in connection with the transactions contemplated by this Agreement.

"Transfer" means, with respect to any security, to sell, offer, pledge, contract to sell, grant any option or contract to purchase, purchase any option or contract to sell, grant any right or warrant to purchase, lend or otherwise transfer (including by gift or operation of law), dispose of, hypothecate or encumber, directly or indirectly, such security, or to enter into any swap, hedging or other arrangement that transfers to another, in whole or in part, any of the economic consequences of ownership of such security.

Article II.

THE MERGER

i. The Merger

. Upon the terms and subject to the conditions set forth in this Agreement, and in accordance with the DGCL, the Purchaser shall merge with and into the Company at the Effective Time. At the Effective Time, the separate corporate existence of the Purchaser shall cease and the Company shall continue as the surviving corporation of the Merger and as a wholly-owned Subsidiary of the Parent (the "Surviving Corporation") and shall succeed to and assume all the rights and obligations of the Purchaser in accordance with the DGCL.

ii. Closing

. Upon the terms and subject to the conditions set forth in this Agreement, the closing of the Merger (the "Closing") shall take place at 12:00 p.m., Pacific Time, on the date hereof, or at such other time or date agreed to in writing by the Parent and the Company. The date on which the Closing occurs is referred to in this Agreement as the "Closing Date." The Parties shall complete the Closing by electronic transfer of signature pages and wire transfer of immediately available funds to avoid the necessity of a physical Closing. To the extent a physical Closing is required, the Closing shall take place at the offices of Bass Berry & Sims PLC, 150 Third Avenue South, Suite 2800, Nashville, Tennessee 37201.

iii. Effective Time

. Upon the terms and subject to the conditions set forth in this Agreement, as soon as practicable on the Closing Date, a certificate of merger (the "Certificate of Merger") shall be duly prepared, executed and acknowledged by the Parties in accordance with the DGCL and filed with the Secretary of State of the State of Delaware. The Merger shall become effective upon the filing of the Certificate of Merger with the Secretary of State of the State of Delaware or at such subsequent time or date as the Parent and the Company shall agree and specify in the Certificate of Merger. The time at which the Merger becomes effective is referred to in this Agreement as the "Effective Time".

iv. Effects of the Merger

. At the Effective Time, the Merger shall have the effects set forth in this Agreement, the Certificate of Merger and the applicable provisions of the DGCL.

v. Certificate of Incorporation and Bylaws

. The Certificate of Incorporation of the Purchaser in effect immediately prior to the Effective Time shall be the Certificate of Incorporation of the Surviving Corporation. The Bylaws of the Purchaser in effect immediately prior to the Effective Time shall be the By-laws of the Surviving Corporation.

vi. Directors and Officers

. The officers and directors of the Purchaser immediately prior to the Effective Time will be the initial officers and directors of the Surviving Corporation. The Company shall cause each member of the Board of Directors of the Company (the "Company Board") and each officer of the Company to execute and deliver a letter effectuating his or her resignation as a director or officer of the Company, as the case may be, effective upon the Effective Time.

Article III.

CONVERSION OF SECURITIES IN THE MERGER

i. Effect of Merger on Capital Stock

. At the Effective Time, by virtue of the Merger and without any action on the part of the Parties, the Surviving Corporation or the holder of any of the following securities:

(1) each share of the Purchaser's capital stock issued and outstanding immediately prior to the Effective Time shall be converted into and become one validly issued, fully paid and nonassessable share of the same class of capital stock of the Surviving Corporation;

(2) each share of Company Capital Stock issued and outstanding immediately prior to the Effective Time that is owned by the Company, including all shares of Company Capital Stock held by the Company as treasury stock, shall automatically be cancelled and retired, and no payment shall be made with respect thereto;

(3) each share of Company Common Stock issued and outstanding immediately prior to the Effective Time (other than shares of Company Common Stock to be cancelled pursuant to Section 3.1(b) above) shall be automatically cancelled and extinguished and (other than, if applicable, with respect to any Dissenting Shares) no payment shall be made with respect thereto; and

(4) each share of Company Preferred Stock issued and outstanding immediately prior to the Effective Time (other than shares of Company Preferred Stock to be cancelled pursuant to Section 3.1(b) above) shall be automatically cancelled and extinguished and (other than, if applicable, with respect to any Dissenting Shares) no payment shall be made with respect thereto.

ii. Treatment of Company Stock Options, Company Warrants and Company Convertible Notes.

(1) Subject to the terms and conditions of this Agreement, at the Effective Time, by virtue of the Merger and without any action on the part of the Parties, the Surviving Corporation or any holder of any Company Stock Option that is outstanding immediately prior to the Effective Time, each Company Stock Option whether vested or unvested shall be cancelled and no payment shall be made with respect thereto.

(2) Subject to the terms and conditions of this Agreement, at the Effective Time, by virtue of the Merger and without any action on the part of the Parties, the Surviving Corporation or any holder of any Company Warrant that is outstanding immediately prior to the Effective Time, each Company Warrant shall be cancelled and no payment shall be made with respect thereto.

(3) Subject to the terms and conditions of this Agreement, at the Effective Time, by virtue of the Merger and without any action on the part of the Parties, the Surviving Corporation or any holder of any Company Series D Convertible Note that is outstanding immediately prior to the Effective Time, each Company Series D Convertible Note shall be cancelled and no payment shall be made with respect thereto.

(4) Subject to the terms and conditions of this Agreement, at the Effective Time, by virtue of the Merger and without any action on the part of the Parties, the Surviving Corporation or any holder of any Company Series E Convertible Note that is outstanding immediately prior to the Effective Time, each Company Series E Convertible Note shall be treated in accordance with the Estimated Closing Statement, the Closing Payment Schedule and applicable Subscription Agreement.

(5) All dividends or other distributions declared and not paid at the Effective Time on or with respect to any shares of Company Capital Stock shall be deemed to have been cancelled at the Effective Time.

iii. Dissenting Shares

. Notwithstanding anything in this Agreement to the contrary, shares (the "Dissenting Shares") of the Company Capital Stock that are issued and outstanding immediately prior to the Effective Time and that are held by any holder who is entitled to demand and properly demands appraisal of such shares pursuant

to, and who has complied in all respects with, the provisions of Section 262 of the DGCL shall not be subject to the treatment set forth in Sections 3.1(c) and (d), as the case may be, but instead such holder shall be entitled to payment of the fair value of such Dissenting Shares in accordance with the provisions of Section 262 of the DGCL. At the Effective Time, all Dissenting Shares shall no longer be outstanding and shall automatically be cancelled and shall cease to exist, and each holder of Dissenting Shares shall cease to have any rights with respect thereto, except the right to receive the fair value of such shares in accordance with the provisions of Section 262 of the DGCL. Notwithstanding the foregoing, if any such holder shall fail to perfect or otherwise shall waive, withdraw or lose the right to appraisal under Section 262 of the DGCL or a court of competent jurisdiction shall determine that such holder is not entitled to the relief provided by Section 262 of the DGCL, then the right of such holder to be paid the fair value of such holder's Dissenting Shares under Section 262 of the DGCL shall cease and such Dissenting Shares shall be deemed to have been cancelled as provided in Sections 3.1(c) and (d), as the case may be.

iv.Purchase Price

. The aggregate merger consideration to be paid or issued hereunder shall be an amount equal to the Parent Consideration Shares, the Parent Closing Cash Payments and any Closing Assumed Liabilities in excess of the Parent Closing Cash Payments (but up to the Target Assumed Liabilities) (the "Purchase Price").

v.Payments at Closing.

(1) The Company has delivered to Parent a written schedule (the "Estimated Closing Statement") setting forth (i) the name of each Creditor immediately prior to the Effective Time, (ii) the amount of Closing Date Indebtedness or other amount owed each Creditor, (iii) the amount of Indebtedness or other liability each Creditor shall have settled pursuant to a Subscription Agreements, (iv) the amount of Closing Assumed Liabilities (other than pursuant to clause "(iii)") settled as of the Closing, (v) itemized cash payments in the aggregate of One Million Five Hundred Thousand Dollars and wire transfer instructions for the applicable payments of certain Indebtedness, Company Trade Liabilities and Company Transaction Costs by Parent on behalf of the Company at Closing (the "Parent Closing Cash Payments"), and (vi) the calculation of the Parent Consideration Shares, including in reasonable detail the Company's good faith estimates of the (a) Company Transaction Costs, (b) Closing Assumed Liabilities, and (c) Closing A/R and Cash. The estimates of the Company Transaction Costs, Closing Assumed Liabilities and Closing A/R and Cash, in each case as set forth in the final Estimated Closing Statement delivered by the Company to Parent prior to the Closing, shall be referred to as the "Estimated Company Transaction Costs," "Estimated Assumed Liabilities," and "Estimated Closing A/R and Cash," respectively.

(2) Within 120 calendar days following the Closing, Parent shall prepare and deliver to the Representative a written schedule (the "Closing Statement") setting forth in reasonable detail its calculation of (i) the Company Transaction Costs, (ii) the Closing Assumed Liabilities and (iii) the Closing A/R and Cash, in each case, as determined pursuant to the applicable definitions set forth in this Agreement. The Closing Statement shall include such schedules and data with respect to the determinations set forth therein as may be appropriate to support the calculations set forth therein. Parent shall provide the Representative reasonable access, during regular business hours, in such a manner as to not interfere with the normal operation of Parent or the Surviving Corporation (subject to the execution of customary work paper access letters, if requested) to work papers and books and records relating to the preparation of the Closing Statement solely for the purpose of assisting the Representative in its review of

the Closing Statement and the calculations contained therein. If the Representative disagrees with, which may be based on the Representative's good faith determination that it does not have sufficient information to verify, the calculations in the Closing Statement, the Representative shall notify Parent of such disagreement or deficiency in writing (the "Dispute Notice") within 45 days after delivery of the Closing Statement. The Dispute Notice must, to the extent known, set forth in reasonable detail (A) any item on the Closing Statement which the Representative believes in good faith has not been prepared in accordance with this Agreement which may be based on the Representative's determination that it does not have sufficient information to verify such item, and (B) the Representatives' alternative calculation of the Company Transaction Costs, the Closing Assumed Liabilities and/or Closing A/R and Cash, as the case may be, if the Representative determines in good faith that it has sufficient information to calculate such amounts, together with all relevant supporting documentation. Any item or amount that Representative does not dispute as provided above in the Dispute Notice within such 45-day period shall be final, binding and conclusive for all purposes hereunder. In the event any such Dispute Notice is timely provided, Parent and the Representative shall use commercially reasonable efforts for a period of 30 days (or such longer period as they may mutually agree) to resolve any disagreements with respect to the calculations included in the Closing Statement that were disputed in the Dispute Notice. If, at the end of such period, the Representative and Parent remain unable to resolve the dispute in its entirety, then the unresolved items and amounts thereof in dispute shall be submitted to a nationally recognized independent accounting firm, mutually acceptable to Parent and Representative, which shall not be the independent accountants of Parent or the Company (the "Dispute Auditor"). The Dispute Auditor shall determine, based solely on the written presentations by the Representative and Parent, and not by independent review, only those items and amounts that remain then in dispute as set forth in the Dispute Notice. In rendering its decision, the Dispute Auditor shall adhere to and be bound by the provisions of this Section 3.5(b) and the applicable definitions set forth in this Agreement. The Dispute Auditor's determination of the Company Transaction Costs, the Closing Assumed Liabilities and/or the Closing A/R and Cash, as applicable, shall be made within 45 days after the dispute is submitted for its determination and shall be set forth in a written statement delivered to the Representative and Parent. A judgment of a court of competent jurisdiction selected pursuant to

Section 9.11 hereof may be entered upon the Dispute Auditor's determination. The Dispute Auditor shall have exclusive jurisdiction over, and resorting to the Dispute Auditor as provided in this Section 3.5(b) shall be the only recourse and remedy of the Parties against one another with respect to, those items and amounts that remain in dispute under this Section 3.5(b), and no Parent Indemnitee or Creditor Indemnitee shall be entitled to seek indemnification or recovery of any Losses, including attorneys' fees or other professional fees incurred by Parent or the Representative, as applicable, in connection with any dispute governed by this Section 3.5(b). The Dispute Auditor shall allocate its fees and expenses between the Parent and the Representative according to the degree to which the positions of the respective Parties are not accepted by the Dispute Auditor. The Representative and Parent shall, and shall cause their respective Affiliates and representatives to, cooperate in good faith with the Dispute Auditor, and shall give the Dispute Auditor access to all data and other information (or, in the case of data or other information not in the possession of such Party, use commercially reasonable efforts to cause such access to be provided) it reasonably requests for purposes of such resolution. In no event shall the decision of the Dispute Auditor assign a value to any item greater than the greatest value for such item claimed by either Parent or the Representative or lesser than the smallest value for such item claimed by either Parent or the Representative. Any determinations made by the Dispute Auditor pursuant to this Section 3.5(b) shall be final, non-appealable and binding on the Parties hereto, absent manifest error or fraud. Notwithstanding any provision herein to the contrary and for the avoidance of doubt, in no event shall Company

Transaction Costs, Closing Date Indebtedness or Closing Assumed Liabilities include (and the adjustments and payments contemplated by this Section 3.5 shall be determined without regard to) any obligations, liabilities or commitments incurred in connection with or relating to the PPP Loan, including, without limitation, repayment obligations that arise or are expected to arise, are triggered or become due or payable, in whole or in part, as a direct or indirect result of the consummation (whether alone or in combination with any other event or circumstance) of the Merger or any of the other transactions contemplated hereby.

(3) "Adjustment Amount" means the net amount, which may be positive or negative, equal to: (i) (A) the Estimated Company Transaction Costs; *minus* (B) the Company Transaction Costs (as finally determined in accordance with Section 3.5(b)); *plus* (ii) (A) the Estimated Assumed Liabilities *minus* (B) the Closing Assumed Liabilities (as finally determined in accordance with Section 3.5(b)); *plus* (iii) (A) 50% of the Closing A/R and Cash *minus* (B) 50% of the Estimated Closing A/R and Cash (as finally determined in accordance with Section 3.5(b)). "Adjustment Shares" means a number of shares of Parent Common Stock equal to (i) the absolute value of the Adjustment Amount, *divided* by (ii) the Parent Trading Price. If the Adjustment Amount is a positive number, then the Parent Consideration Shares shall be increased by a number of shares of Parent Common Stock equal to the Adjustment Shares, and if the Adjustment Amount is a negative number, the Parent Consideration Shares shall be decreased by a number of shares of Parent Common Stock equal to the Adjustment Shares. If the Adjustment Amount is a positive number, then within five (5) Business Days after the final determination of the amount pursuant to Section 3.5(b), Parent shall issue a number of shares of Parent Common Stock equal to the Adjustment Shares to the Escrow Beneficiaries and deliver such shares to the Escrow Beneficiaries based on each such Escrow Beneficiary's Pro Rata Portion. In furtherance of the foregoing payments, if the Adjustment Amount is a positive number, the Representative shall, not later than five (5) Business Days after the final determination of such amount pursuant to Section 3.5(b), deliver to Parent an updated Closing Payment Schedule (which need not be certified by an officer of the Company) setting forth the portion of such Adjustment Amount payable to each Escrow Beneficiary. If the Adjustment Amount is a negative number, Parent shall be entitled to recover a number of shares of Parent Common Stock equal to the Adjustment Shares solely from the Escrowed Shares, and, within five (5) Business Days after the final determination of such amount pursuant to Section 3.5(b), the Representative and Parent shall jointly instruct the Escrow Agent to either cancel or transfer to Parent (at Parent's election) a number of the Escrowed Shares equal in value to such amount. Subject to the second to last sentence of Section 3.5(b), the Adjustment Amount, as finally determined pursuant to this Section 3.5, shall be final, non-appealable and binding on the Parties.

(4) At the Closing, the Parent shall:

(a) issue the Parent Consideration Shares (less the Escrowed Shares) to the holders of Closing Date Indebtedness and other service providers, vendors and suppliers of the Company (collectively, the "Creditors") as set forth on and in accordance with the Estimated Closing Statement pursuant to the terms of subscription agreements executed and delivered by the Creditors (other than Silicon Valley Bank) and Parent concurrently herewith (the "Subscription Agreements"); and

(b) deposit 15% of the Parent Consideration Shares (the "Escrowed Shares") with the Escrow Agent (the "Escrow Account") under the terms of the escrow agreement executed and delivered by Parent, the Representative and the Escrow Agent concurrently herewith (the "Escrow Agreement") as security for certain obligations of the holders, as of immediately prior to the Closing, of Company Series E Convertible Notes (the "Escrow Beneficiaries") pursuant to Article VIII.

(5) At the Closing, the Parent shall pay, by wire transfer of immediately available funds the Parent Closing Cash Payments by wire transfer of immediately available funds in accordance with the Estimated Closing Statement and the payoff letters, settlement letters, invoices or other documentary evidence thereof from each of the applicable service providers, holders of Closing Date Indebtedness and Trade Creditors, as applicable.

(6) Promptly following Closing, Parent shall cause (a) evidence of book entry shares representing the Escrowed Shares to be delivered to the Escrow Agent pursuant to the Escrow Agreement and (b) evidence of book entry shares representing the Parent Consideration Shares (less the Escrowed Shares) to be delivered to the Escrow Beneficiaries, duly registered in the name of the Escrow Beneficiaries in accordance with the Closing Statement.

vi. Withholding

. The Parent, the Surviving Corporation, the Escrow Agent, and their respective agents, shall be entitled to deduct and withhold from the consideration otherwise payable pursuant to this Agreement such amounts as any of them reasonably determines that it is required to deduct and withhold with respect to the making of such payment under the Code or any other applicable Law; provided that unless the conditions of Section 7.1(g) or Section 7.1(f) have not been properly satisfied or the Closing Payment Schedule specifies that Taxes are required to be withheld, (a) before making any such deduction or withholding with respect to any consideration payable pursuant to the Subscription Agreement to a Creditor, Parent or the Surviving Corporation, as applicable, shall give the Representative notice of the intention to make such deduction or withholding, (b) Parent or the Surviving Corporation, as applicable, shall cooperate with each such Creditor (at such Creditor's sole cost and expense) to the extent commercially reasonable in efforts to obtain reduction of or relief from such deduction or withholding and (c) Parent or the Surviving Corporation, as applicable, shall timely remit to the appropriate Governmental Entity any and all amounts so deducted or withheld. To the extent that amounts are so withheld, such 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.

vii. Escrow.

(1) On the Closing Date, Parent shall deposit the Escrowed Shares with the Escrow Agent. The Escrowed Shares shall be available to (i) satisfy the indemnification obligations of the Escrow Beneficiaries to the Parent Indemnitees under Article VIII and (ii) make the adjustments contemplated by Section 3.5. The Escrowed Shares shall be held by the Escrow Agent under the Escrow Agreement pursuant to the terms thereof. The Escrowed Shares shall be held as a trust fund and shall not be subject to any Lien, attachment, trustee process or any other judicial process of any creditor of any person, and shall be held and disbursed solely for the purposes and in accordance with the terms of the Escrow Agreement. Each Escrow Beneficiaries shall contribute its Pro Rata Portion of the Escrowed Shares.

(2) The adoption of this Agreement and the approval of the Merger by the Company Stockholders, and the execution of the Subscription Agreements, shall constitute approval of the Escrowed Agreement and of all of the arrangements related thereto, including the placement of the Escrowed Shares into escrow.

Article IV.

REPRESENTATIONS AND WARRANTIES OF THE COMPANY

Except as set forth herein or in the disclosure schedule delivered by the Company to the Parent on the date of this Agreement (the "Company Disclosure Schedule"), the Company represents and warrants to the Parent and the Purchaser as follows:

i. Organization, Standing and Power

. The Company is a corporation duly organized, validly existing and in good standing under the Laws of the jurisdiction of its incorporation, has all requisite corporate power and authority to own, lease and operate its properties and assets and to carry on its business as now being conducted, and is duly qualified to do business and is in good standing as a foreign corporation in each jurisdiction listed in Section 4.1 of the Company Disclosure Schedule, which jurisdictions constitute the only jurisdictions in which the character of the properties it owns, operates or leases or the nature of its activities makes such qualification necessary, except for such failures to be so organized, qualified or in good standing that have not had, and would not reasonably be expected to result in, a material adverse effect on the Company. The Company has made available to the Parent copies of the Amended and Restated Certificate of Incorporation (as amended, the "Company Certificate of Incorporation") and the Bylaws of the Company (the "Company Bylaws") each as amended to date. The Company is not in material violation of any of the provisions of the Company Certificate of Incorporation or Company Bylaws or equivalent organizational documents.

ii. Capitalization.

(1) As of the date of this Agreement, the authorized capital stock of the Company consists of 70,000,000 shares of common stock, par value $0.001 per share ("Company Common Stock") and 45,657,339 shares of preferred stock, $0.001 par value per share, 1,000 of which have been designated as "Series A Preferred Stock" ("Series A Preferred Stock"), 12,656,339 of which have been designated as "Series B Preferred Stock" ("Series B Preferred Stock"), and 33,000,000 of which have been designated as "Series C-1 Preferred Stock" ("Series C-1 Preferred Stock" and, collectively with the Series A Preferred Stock and the Series B Preferred Stock, the "Company Preferred Stock"). The Company Preferred Stock, together with the Company Common Stock, shall be referred to herein as the "Company Capital Stock". As of the date of this Agreement: (i) 589,030 shares of Company Common Stock were issued and outstanding; (ii) no shares of Series A Preferred Stock were issued and outstanding; (iii) 12,576,339 shares of Series B Preferred Stock were issued and outstanding; (iv) 26,409,832 shares of Series C-1 Preferred Stock were issued and outstanding; and (v) no shares of Company Capital Stock were held in the treasury of the Company. The outstanding shares of Company Capital Stock are all duly and validly authorized and issued, fully paid and nonassessable. The rights and privileges of each class of the Company Capital Stock are as set forth in the Company Certificate of Incorporation. The stockholders listed in Section 4.2(a) of the Company Disclosure Schedule are the record and beneficial owners and holders of the outstanding shares of Company Capital Stock identified therein free and clear of all Liens other than restrictions on the Transfer of securities arising under federal and state securities Laws (the "Company Stockholders").

(2) Section 4.2(b) of the Company Disclosure Schedule sets forth a complete and accurate list, as of the date of this Agreement, of: (i) all plans or other arrangements under which Company Stock Options were granted (collectively, the "Company Stock Plans"), indicating for each Company Stock Plan, as of the close of business on the Business Day prior to the date of this Agreement,

the number of shares of Company Common Stock issued to date under such Company Stock Plan, the number of shares of Company Common Stock subject to outstanding options under such Company Stock Plan (such outstanding options, the "Company Stock Options") and the number of shares of Company Common Stock reserved for future issuance under such Company Stock Plan; and (ii) all outstanding Company Stock Options, indicating with respect to each such Company Stock Option the name of the holder thereof, the Company Stock Plan under which it was granted, the number of shares of Company Common Stock subject to such Company Stock Option, the exercise price, the date of grant, and the vesting schedule. The Company has made available to the Parent copies of all Company Stock Plans and the forms of all stock option agreements evidencing Company Stock Options. Section 4.2(b) of the Company Disclosure Schedule shows the type and number of shares of Company Capital Stock reserved for future issuance pursuant to warrants or other outstanding rights to purchase shares of Company Capital Stock outstanding as of the date of this Agreement (such outstanding warrants or other rights, the "Company Warrants") and the agreement or other document under which such Company Warrants were granted and sets forth a list of all holders of Company Warrants indicating the number and type of shares of Company Capital Stock subject to each Company Warrant, and the exercise price, the date of grant and the expiration date thereof. The Company has made available to the Parent copies of the forms of agreements evidencing all Company Warrants. For purposes of this Agreement, the Company Stockholders, the holders of Company Stock Options, Company Warrants and Company Convertible Notes shall be collectively referred to as the "Company Equityholders."

(3) Section 4.2(c) of the Company Disclosure Schedules lists each of holder of a Company Convertible Note and the amount (principal and interest) owed to each holder under such Company Convertible Note. The Company has made available to the Parent copies of the forms of agreements evidencing all Company Convertible Notes.

(4) Except (x) as set forth in Sections 4.2(a), (b), (c) or (d) of the Company Disclosure Schedule and (y) as reserved for future grants under Company Stock Plans: (i) there are no equity securities of any class of the Company, or any security exchangeable into or exercisable for such equity securities, issued, reserved for issuance or outstanding; and (ii) there are no options, warrants, debt or equity securities, calls, rights, commitments or agreements of any character (other than this Agreement) to which the Company is a party or by which the Company is bound obligating the Company to issue, exchange, Transfer, deliver or sell, or cause to be issued, exchanged, transferred, delivered or sold, additional shares of capital stock or other equity interests of the Company or any security or rights convertible into or exchangeable or exercisable for any such shares or other equity interests, or obligating the Company to grant, extend, accelerate the vesting of, otherwise modify or amend or enter into any such option, warrant, equity security, call, right, commitment or agreement. Except as set forth in Section 4.2(d) of the Company Disclosure Schedule, neither the Company nor any of its Affiliates is a party to or is bound by any, and to the Knowledge of the Company, there are no agreements or understandings with respect to the voting (including voting trusts and proxies) or sale or Transfer (including agreements imposing Transfer restrictions) of any shares of capital stock or other equity interests of the Company. Except as set forth in Section 4.2(d) of the Company Disclosure Schedule and as contemplated by this Agreement, there are no registration rights agreement or understanding to which the Company is a party or by which it is bound with respect to any equity security of any class of the Company.

(5) Except as set forth in Section 4.2(e) of the Company Disclosure Schedule, all outstanding shares of Company Capital Stock are, and all shares of Company Capital Stock subject to issuance as specified in Sections 4.2(b), (c) and (d) above, upon issuance on the terms and conditions specified in the instruments pursuant to which they are issuable, will be, duly authorized, validly issued,

fully paid and nonassessable and not subject to or issued in violation of any purchase option, call option, right of first refusal, preemptive right, subscription right or any similar right under any provision of the DGCL, the Company Certificate of Incorporation or Company Bylaws or any agreement to which the Company is a party or is otherwise bound.

(6) Except as set forth in Section 4.2(f) of the Company Disclosure Schedule, there are no obligations, contingent or otherwise, of the Company to repurchase, redeem or otherwise acquire any shares of Company Capital Stock or to provide funds to or make any investment (in the form of a loan, capital contribution or otherwise) in the Company or any other Entity.

(7) As of the Closing, all Company Stock Options, Company Warrants, Company Convertible Notes or other rights to acquire shares of Company Capital Stock pursuant to any Contract (other than this Agreement) to which the Company is a party or is otherwise bound, if any, shall have been terminated and of no further force or effect. The treatment of the Company Stock Options, Company Warrants, Company Convertibles Notes and Company Capital Stock in accordance with Article III complies with the Company Certificate of Incorporation and Company Bylaws and terms of the applicable Company Stock Options, Company Warrants and Company Convertible Notes (including compliance or valid waiver of notice provisions therein).

iii.No Subsidiaries; Officers and Directors

. The Company does not have, and has never had, any Subsidiaries. The Company does not presently own or control, directly or indirectly, any interest in any other corporation, association, or other business Entity. The Company is not a participant in any joint venture, partnership, or similar arrangement. Section 4.3 of the Company Disclosure Schedule sets forth a list of all officers and directors of the Company.

iv.Authority; No Conflict; Required Filings and Consents.

(1) The Company has all requisite corporate power and authority to enter into this Agreement and the Transaction Documents to which it is a party, and to perform its obligations hereunder and to consummate the transactions contemplated by this Agreement. The execution and delivery of this Agreement and the Transaction Documents to which the Company is a party and the consummation of the transactions contemplated by this Agreement by the Company have been duly authorized by all necessary corporate action on the part of the Company, subject only to the acceptance of the Certificate of Merger by the Secretary of State of the State of Delaware. This Agreement has been duly executed and delivered by the Company and, assuming due authorization, execution and delivery of this Agreement by Parent and Purchaser, constitutes the valid and binding obligation of the Company, enforceable in accordance with its terms except: (i) as enforcement may be limited by applicable bankruptcy, insolvency, reorganization, moratorium and other Laws affecting creditors' rights generally; and (ii) insofar as the availability of equitable remedies may be limited by applicable Law.

(2) The execution and delivery of this Agreement and the Transaction Documents to which the Company is a party and the consummation of the transactions contemplated by this Agreement by the Company do not, and shall not: (i) conflict with, or result in any violation or breach of, any provision of the Company Certificate of Incorporation or Company Bylaws; (ii) conflict with, or result in any violation or breach of, or constitute (with or without notice or lapse of time, or both) a default (or give rise to a right of termination, revocation, invalidation, cancellation or acceleration of any obligation or loss of any material benefit) under, require a consent, approval or waiver under, constitute a change in

control under, require the payment of a penalty under or result in the imposition of any Liens, other than Permitted Liens, on the assets of the Company under any of the terms, conditions or provisions of any Company Material Contract; or (iii) conflict with or violate in any material respect any Permit, judgment, injunction, order, decree, or other Law applicable to the Company or any of its properties or assets.

(3) No consent, approval, license, Permit, order or authorization of, or Registration, declaration, notice or filing with, any Governmental Entity, including with respect to any federal or state laboratory license or accreditation, is required by or with respect to the Company in connection with the execution and delivery of this Agreement by the Company or the consummation by the Company of the transactions contemplated by this Agreement, except for: (i) the filing of the Certificate of Merger with the Secretary of State of the State of Delaware and appropriate corresponding documents with the appropriate authorities of other states in which the Company is qualified as a foreign corporation to transact business; and (ii) such other consents, licenses, Permits, orders, authorizations, filings, approvals and Registrations which, if not obtained or made, have not had, and would not reasonably be expected to result in, a Company Material Adverse Effect.

(4) The affirmative vote for adoption of the Agreement and the Merger by the holders of: (i) a majority of the outstanding Company Common Stock and the Company Preferred Stock voting together as a single class on an as converted basis; (ii) a majority of the outstanding Company Preferred Stock (voting together as a single class on an as converted basis); and (iii) the holders of at least sixty-six percent (66%) of the outstanding Series C-1 Preferred Stock (voting as a separate class), are the only votes of the holders of any class or series of the Company Capital Stock or other securities necessary for the adoption of this Agreement and for the consummation by the Company of the other transactions contemplated by this Agreement. The Company Board has unanimously (i) approved this Agreement and the transactions contemplated hereby, (ii) determined that in its opinion the Merger is advisable to and in the best interest of the Company, and (iii) recommended that the Company Stockholders approve this Agreement and the Merger, all in accordance with the DGCL. There are no bonds, debentures, notes or other Indebtedness of the Company having the right to vote (or convertible into, or exchangeable for, securities having the right to vote) on any matters on which stockholders of the Company may vote.

v.Financial Statements.

(1) Section 4.5 of the Company Disclosure Schedule contains true and correct copies of: (i) the audited balance sheet of the Company as of December 31, 2019, and the related statements of income, changes in stockholders equity and cash flows (including related notes and schedules, if any) for the year ending December 31, 2019; and (ii) the unaudited balance sheet of the Company as of May 31, 2020 (the "Company Balance Sheet" and such date, the "Company Balance Sheet Date"), and the related statements of income, changes in stockholders' equity, and cash flows (including related notes and schedules, if any) for the five (5) month period ended May 31, 2020. The financial statements described in this Section 4.5 are collectively referred to as the "Company Financial Statements". Except as set forth in Section 4.5 of the Company Disclosure Schedule, such Company Financial Statements: (x) fairly present in all material respects the financial condition and the results of operations of the Company as of the respective dates of and for the periods referred to in such Company Financial Statements, all in accordance with GAAP applied on a consistent basis throughout the periods involved and at the dates involved; and (y) reflect all adjustments, consisting only of normal recurring adjustments, necessary to present fairly the financial condition of the Company at the respective dates of the balance sheets contained in the Company Financial Statements and the results of operations for the periods ended on

each balance sheet date, subject, in each case to normal and recurring year-end adjustments (the effect of which will not be materially adverse) and the absence of notes.

(2) The Company maintains a system of internal accounting controls designed in all material respects to provide reasonable assurance that (i) transactions are executed with management's general or specific authorizations; (ii) transactions are recorded as necessary to permit preparation of financial statements in conformance with GAAP and to maintain accountability for assets; (iii) access to the Company's assets is permitted only in accordance with management's authorization; and (iv) the recorded accountability for assets is compared with existing assets at reasonable intervals and appropriate action is taken with respect to any differences. The Company is not party to or otherwise involved in any "off-balance sheet arrangements" (as defined in Item 303 of Regulation S-K under the Securities Exchange Act of 1934, as amended (the "Exchange Act")).

vi. No Undisclosed Liabilities.

(1) Except for matters reflected or reserved against in the Company Financial Statements or otherwise disclosed in Section 4.6 of the Company Disclosure Schedule, the Company has no obligations or liabilities of any nature that would have been required to be disclosed on the face of the Company Balance Sheet in accordance with GAAP, except for: (a) liabilities incurred in the Ordinary Course of Business since the date of the Company Balance Sheet; (b) the Indebtedness listed on Section 4.9 of the Company Disclosure Schedule, (c) obligations and liabilities pursuant to the PPP Loan, and (d) the Company Trade Liabilities and the Company Transaction Costs listed on Section 4.6(a) of the Company Disclosure Schedule and any other payment listed on the Estimated Closing Statement or the Closing Statement.

(2) The Company's application for the PPP Loan, including all representations and certifications contained therein, was true, correct and complete in all material respects and was otherwise completed in accordance with all applicable Laws and guidance issued in respect of the Paycheck Protection Program in all material respects. The Company has used the proceeds of the PPP Loan solely for the purposes permitted by the CARES Act, all applicable Laws and guidance, and has complied in all material respects with all requirements of the CARES Act and Paycheck Protection Program in connection therewith.

vii. Absence of Certain Changes or Events

. Since the Company Balance Sheet Date, the Company has conducted its business only in the Ordinary Course of Business and, since such date, (a) there has not been any change, event, circumstance, development or effect that has resulted in, or would reasonably be expected to result in, a Company Material Adverse Effect and (b) the Company has not:

(1) amended the Company Certificate of Incorporation or the Company Bylaws or authorized the same;

(2) split, combined or reclassified any Company Capital Stock; issued or authorized the issuance of any other securities in respect of, in lieu of or in substitution for shares of Company Capital Stock not reflected on Section 4.2 of the Company Disclosure Schedule; declared, set aside, or paid any dividend or made any distribution (whether in cash or in kind) with respect to any Company

Capital Stock or redeemed, purchased, or otherwise acquired, directly or indirectly, any Company Capital Stock;

(3) issued, delivered, transferred or sold, or authorized to issue, deliver, Transfer or sell, any shares of Company Capital Stock or securities convertible into, or subscriptions, rights, calls, conversion rights, warrants or options to acquire, or other agreements or commitments of any character obligating it to issue any such shares or other convertible securities, or authorized or proposed any change in its equity capitalization or capital structure not reflected on Section 4.2 of the Company Disclosure Schedule;

(4) entered into or adopted any plan or agreement (other than this Agreement) of complete or partial liquidation, restructuring, recapitalization or dissolution, or filed a voluntary petition in bankruptcy or commenced a voluntary legal procedure for reorganization, arrangement, adjustment, release or composition of Indebtedness in bankruptcy or other similar Laws;

(5) incurred any Indebtedness for borrowed money, or guaranteed any such Indebtedness, or issued or sold any debt securities or guarantee any debt securities of others;

(6) made any capital expenditures, capital additions or capital improvements, in excess of $100,000 per fiscal quarter;

(7) knowingly waived any material right of the Company under any Company Material Contract;

(8) acquired or agreed to acquire by merging with, or by purchasing a portion of the stock or material assets of, or by any other manner, any business or any Entity;

(9) (i) initiated any new line of business, or (ii) made any loan or capital contribution to any person (other than business-related advances to its employees in the Ordinary Course of Business);

(10) terminated, cancelled or failed to maintain or renew any material Permit;

(11) sold, assigned or otherwise disposed of, leased or exclusively licensed any properties or assets of the Company which are material to the Company;

(12) (i) sold, assigned, transferred, licensed, abandoned or otherwise disposed of any Owned Company Intellectual Property, or (ii) acquired, in-licensed or otherwise obtained any right, title or interest in or to any pending or issued patents, inventions, patent disclosures or other material Intellectual Property from any other person (other than, with respect to each of clauses (i) and (ii), non-exclusive licenses or other non-exclusive grants of rights entered into in the Ordinary Course of Business or Intellectual Property acquired, in-licensed or otherwise obtained pursuant to licenses or agreements identified in Section 4.11(b) of the Company Disclosure Schedules);

(13) except as disclosed on Section 4.12(a) of the Company Disclosure Schedule, entered into any Company Material Contract, amended or modified in any material respect any Company Material Contract or terminated any Company Material Contract;

(14) (i) entered into or amended in any material respect the terms of any employment agreement, consulting agreement, or independent contractor agreement, or (ii) entered into or amended

the terms of any Contract providing for severance, retention payment, change of control, bonus, or other similar payment to any employee, consultant, or independent contractor, or otherwise promised, made, or granted any such severance, retention payment, change of control, bonus, or other similar payment;

(15) hired any employee or engaged any consultant or independent contractor, or terminated the employment or engagement of any employee, consultant, or independent contractor;

(16) increased or modified the compensation of any employee, consultant, or independent contractor, or otherwise altered the terms and conditions of employment for any current employee;

(17) recognized, or entered into, any Contract or other agreement with any labor organization, except as otherwise required by Law;

(18) made any material election in respect of Taxes (other than any such election made as part of a Tax Return filing in the Ordinary Course of Business and consistent with past practice), revoked or changed any material election in respect of Taxes, changed an annual Tax accounting period, adopted or changed any material accounting method in respect of Taxes, filed any amended Tax Return, entered into any Tax allocation, sharing or indemnity agreement (other than an Ordinary Commercial Agreement), settled any claim or assessment in respect of Taxes, surrendered or abandoned any right to claim a material refund of Taxes, or consented to any extension or waiver of the limitation period applicable to any material claim or assessment in respect of Taxes; or

(19) except as contemplated by this Agreement, including settlements and releases with Creditors and other persons receiving Parent Consideration Shares or any portion of the Parent Closing Cash Payments, as applicable, waived or released in writing, assigned, commenced, settled or agreed to settle any legal proceeding against the Company, other than waivers, releases, compromises or settlements (i) in the Ordinary Course of Business (ii) that involved only the payment of monetary damages not in excess of $25,000 in the aggregate and (iii) that did not include the imposition of equitable relief on, or the admission of wrongdoing by, the Company.

viii.Taxes.

(1) The Company has filed all income and other material Tax Returns that the Company was required to file, and all such Tax Returns were true, correct and complete in all material respects. The Company has paid all Taxes that were due and payable. All Taxes that the Company was required to withhold or collect in connection with any amounts paid or owing to any employee, independent contractor, customer, creditor, stockholder or other third party, including but not limited to under any Company Employee Plan, have been duly withheld or collected and, to the extent required, have been properly paid to the appropriate Governmental Entity. Since the Company Balance Sheet Date, the Company has not incurred any liability for Taxes outside the Ordinary Course of Business.

(2) The Company has made available to the Parent: (i) complete and correct copies of all income and other material Tax Returns of the Company for all taxable periods ending on or after December 31, 2016; and (ii) complete and correct copies of all private letter rulings, revenue agent reports, information document requests, notices of proposed deficiencies, deficiency notices, protests, petitions, closing agreements, settlement agreements, pending ruling requests and any similar documents submitted by, received by, or agreed to by or on behalf of the Company relating to Taxes for all taxable periods for which the statute of limitations has not yet expired.

(3) There is no dispute or claim concerning any Tax liability of the Company pending with or, to the Knowledge of the Company, threatened by, any Governmental Entity. No examination or audit of any Tax Return of the Company by any Governmental Entity is currently in progress or, to the Knowledge of the Company, threatened. The Company has not been informed in writing by any jurisdiction that the jurisdiction believes that the Company is or may be required to file any Tax Return or pay Taxes that were not filed or paid. The Company has not: (i) waived any statute of limitations with respect to Taxes or agreed to extend the period for assessment or collection of any Taxes; or (ii) requested any extension of time within which to file any Tax Return (other than an automatic extension obtained in the Ordinary Course of Business not exceeding six months), which Tax Return has not yet been filed. The Company is not subject to Tax in any jurisdiction outside of the United States.

(4) The Company is not a party to or bound by any Tax indemnity, Tax sharing, Tax allocation or similar agreement or any agreement obligating, or purporting to obligate, the Company to pay the Taxes of any other person (in each case, other than an Ordinary Commercial Agreement). The Company is not, and never has been, a member of an affiliated group filing a U.S. federal income Tax Return. The Company has no liability for the Taxes of any other Person (i) under Treasury Regulation Section 1.1502-6 (or any similar provision of state, local, or non-U.S. Law); (ii) as a transferee or successor; or (iii) otherwise. The Company is not a party to any joint venture, partnership or other Contract or arrangement, in each case, that could reasonably be treated as a partnership for Tax purposes.

(5) There are no Liens with respect to Taxes upon any of the assets or properties of the Company, other than Liens for Taxes that are not yet due and payable.

(6) The Company has not made any payment, is not obligated to make any payment, and is not a party to any agreement (including this Agreement) that could obligate it to make any payment, in each case, that would constitute an "excess parachute payment" under Section 280G of the Code (without regard to Sections 280G(b)(4) and 280G(b)(5) of the Code). For purposes of this representation, it shall be assumed that any payments made by the Parent, the Purchaser or, for any period beginning after the Effective Time, the Surviving Corporation are not described in Section 280G(b)(2)(A)(i).

(7) The Company will not be required to include any item of income in, or exclude any item of deduction from, taxable income for any Tax period ending after the Closing Date as a result of any: (i) change in method of accounting for a Tax period ending on or prior to the Closing Date; (ii) closing agreement as described in Section 7121 of the Code (or any corresponding or similar provision of U.S. state, local or non-U.S. income Tax law) executed on or prior to the Closing Date; (iii) intercompany transactions or any excess loss account described in Treasury Regulations under Section 1502 of the Code (or any corresponding or similar provision of U.S. state, local or non-U.S. income Tax Law); (iv) installment sale or open transaction disposition made prior to the Closing; (v) election under Section 108(i) of the Code (or similar provision of U.S. state, local or non-U.S. Tax Law) made prior to the Closing Date; (vi) prepaid amount received or deferred revenue accrued on or prior to the Closing Date; or (vii) forgiveness of a loan entered into on or prior to the Closing Date as described in IRS Notice 2020-32 or any successor guidance. The Company uses the accrual method of accounting for income Tax purposes.

(8) The Company does not, and never has had, any direct or indirect interest in any trust, partnership, corporation, limited liability company, or other business Entity for U.S. federal income

Tax purposes. The Company is and always has been a domestic corporation taxable under subchapter C of the Code for U.S. federal income tax purposes.

(9) The Company is not, and never has been, a United States real property holding corporation within the meaning of Section 897(c)(2) of the Code during the. None of the Company nor any of its predecessors has been a party to any transaction intended to qualify under Section 355 of the Code.

(10) The Company has not participated in any "reportable transaction" as defined in Section 6707A(c) of the Code or the Treasury Regulations promulgated thereunder.

(11) The Company has not availed itself of relief pursuant to Sections 2301 or 2302 of the CARES Act or any similar federal, state, local or foreign Law.

(12) The Company has made available to Parent complete and accurate copies of any written memoranda prepared by, or on behalf of, the Company regarding whether any of the tax attribute carryforwards of the Company (including, but not limited to, net operating losses and tax credits) are subject to limitation pursuant to Sections 382, 383 or 384 of the Code.

(13) Notwithstanding any provision herein to the contrary, nothing in this Section 4.8 or otherwise in this Article IV shall be construed as a representation or warranty, including for purposes of Section 8.1(a), with respect to (i) the amount or availability of any net operating loss, capital loss, Tax credits, Tax basis or other Tax asset or attribute of the Company in any taxable period (or portion thereof) beginning after the Closing Date or (ii) except for the representations in Sections 4.8(d), 4.8(f), 4.8(g), 4.8(h), 4.8(i), 4.8(j) and 4.8(k), any Taxes with respect to taxable periods (or portions thereof) beginning after the Closing Date.

ix.Indebtedness

. Section 4.9 of the Company Disclosure Schedule sets forth a list and description of all outstanding Indebtedness of the Company as of the date of this Agreement.

x.Owned and Leased Real Properties.

(1) The Company does not own and never has owned any real property.

(2) Section 4.10(b) of the Company Disclosure Schedule sets forth a complete and accurate list of all real property leased, subleased or licensed by the Company (collectively "Company Leases") and the location of the premises. Neither the Company nor, to the Knowledge of the Company, any other party to any Company Lease, is in material default under any of the Company Leases. Each of the Company Leases is in full force and effect and is valid, binding and enforceable in accordance with its terms and shall not cease to be in full force and effect as a result of the transactions contemplated by this Agreement. The Company does not sublease or license any real property to any person. The Company has made available to Parent copies of all Company Leases. The Company's quiet enjoyment of the real property under the Company Leases has not been disturbed in any material respect. As of the date of this Agreement, the Company has not received written notice of (a) default under, or intention to terminate or not renew, any Company Lease or (b) any eminent domain, condemnation or similar proceeding pending or threatened, against all or any portion of any of the real property under the Company Leases.

xi.Intellectual Property.

(1) For purposes of this Agreement, the term "Intellectual Property" means any and all intellectual and industrial property, including all rights therein, thereto and tangible embodiments thereof, in any jurisdiction throughout the world, whether registered or unregistered, including the following and all rights and interests pertaining to or deriving therefrom: (i) patents, patent rights, patent applications (including all provisionals, reissues, reexaminations, revisions, divisions, continuations, continuations-in-part and extensions of any patent or patent application), inventions, discoveries, improvements, innovations, industrial designs, and all applications for registration of the foregoing and all rights to claim priority arising from or related to any of the foregoing; (ii) copyrights, works of authorship (whether or not copyrightable), Registrations and applications for copyrights, works, derivative works, software and firmware (including, without limitation, all executables, libraries, data files, controls, object code and source code), software specifications and documentation, database rights, mask works, domain names, domain name Registrations, web sites, web pages, moral rights, rights of privacy and publicity, and all applications for registration of the foregoing; (iii) trade secrets, know-how, processes, methods, data, formula, non-public information, and confidential information; (iv) trademarks, service marks, trade names, logos, designs, brand names, trade dress, and slogans (including, without limitation, company names and fictitious names used by companies) and all goodwill associated with any of the foregoing, and all applications for registration and renewals of the foregoing; and (v) computer programs and systems, whether embodied in software, firmware or otherwise, including, software compilations, software implementations of algorithms, software tool sets, compilers, and software models and methodologies (regardless of the stage of development or completion), all databases and compilations, and including any and all forms in which any of the foregoing is embodied (whether in source code, object code, executable code or human readable form) (collectively, "Software"). Section 4.11(a) of the Company Disclosure Schedule contains a complete and accurate list of all Intellectual Property owned by the Company which is subject to any issuance, registration, application or other filing by, to or with any Governmental Entity, including any regulatory authority or authorized private registrar in any jurisdiction (collectively, "Registered Intellectual Property"), specifying as to each such item, as applicable, the owner(s) of record (and, in the case of domain names, the registrar), jurisdiction of application or registration, the application or registration number, the date of application or registration, and the status of application or registration.

(2) Section 4.11(b) of the Company Disclosure Schedule contains a complete and accurate list of all licenses, sublicenses and other agreements to which the Company is a party: (i) pertaining to any Intellectual Property of a third party used or held for use by the Company in the conduct of its business, excluding generally commercially available, off-the-shelf Software programs, software as a service, or web or hosted services; or (ii) by which the Company licenses or otherwise authorizes a third party (other than customers or service providers in the Ordinary Course of Business) to use the Owned Company Intellectual Property (collectively, the "IP Contracts"). The Company has not granted any material sublicense under or otherwise authorized any third party to use (other than in the Ordinary Course of Business) any of the Company Intellectual Property licensed to the Company. The Company is not and, to the Knowledge of the Company, the other contracting parties are not in breach of or default under any IP Contract, and except as set forth on Section 4.11(b) of the Company Disclosure Schedule, each IP Contract is now and will be immediately following the Closing in full force and effect.

(3) Except as set forth in Section 4.11(c) of the Company Disclosure Schedule, the execution and delivery of this Agreement or any other agreements referred to in this Agreement by the Company and the consummation by the Company of the Merger, with or without notice or lapse of time,

will not result in, or give any other third party the right or option to cause or declare: the release, disclosure or delivery of any Company Intellectual Property by or to any escrow agent or other person.

(4) All items of Registered Intellectual Property are in compliance with the formal legal requirements of the U.S. Patent and Trademark Office or other applicable similar office or agency anywhere in the world (including, as applicable, timely payment of filing, examination and maintenance fees, inventor declarations, proofs of working or use, timely post-registration filing of affidavits of use and incontestability and renewal applications), are subsisting and have not expired or been cancelled or abandoned, and are valid and, to the Knowledge of the Company, enforceable. Except as set forth in Section 4.11(d) of the Company Disclosure Schedule, all items of Registered Intellectual Property are in full force, and are not the subject of any cancellation or reexamination proceeding or any other claim, action, suit or proceeding of any nature by or before any Governmental Entity, including any regulatory authority or before any arbitrator, challenging their enforceability or validity. Except as set forth in Section 4.11(d) of the Company Disclosure Schedule, the Company is the owner of record in all items of Registered Intellectual Property, and no opposition, extension of time to oppose, interference, rejection, re-examination, or refusal to register has been received in connection with any such application or registration. The Company, and, to the Knowledge of the Company, each of its agents and current and former emloyees and independent contractors, has complied with its duty of candor and disclosure as required under 37 C.F.R. 1.56 and complied with analogous Law outside the United States requiring disclosure of references or other information material to the patentability in each case requested from any Governmental Entity with respect to all patent and trademark applications filed by or on behalf of the Company and has not made any material misrepresentation in such applications. Each inventor named on the patents or patent applications listed in Section 4.11(a) of the Company Disclosure Schedule that were filed by the Company has executed an agreement assigning his or her entire right, title and interest in and to such patent or patent application, and the inventions embodied and claimed therein, to the Company, which assignment further obligates the inventor to cooperate and support the continued prosecution of such patents or patent applications, and any enforcement and/or defense thereof. To the Knowledge of the Company, no such inventor has any contractual or other obligation that precludes or renders void or voidable any such assignment or otherwise conflicts with the obligations of such inventor to the Company.

(5) Except as set forth in Section 4.11(e) of the Company Disclosure Schedule, the Company exclusively owns, or is licensed to use, all Intellectual Property held for use or used in the operation of the business of the Company (the "Company Intellectual Property"), provided that the foregoing shall not be construed to be a representation or warranty regarding infringement, misappropriation or violation of the Intellectual Property rights of any third party, which are addressed solely by Section 4.11(f). Each item of the Company Intellectual Property will be owned or available for use by the Parent or a Subsidiary of the Parent (including the Surviving Corporation) immediately following the Closing on substantially identical terms and conditions as it was immediately prior to the Closing. Except as set forth in Section 4.11(e) of the Company Disclosure Schedule, the Company is the sole and exclusive owner of all right, title and interest in and to the Owned Company Intellectual Property, free and clear of any Liens. Except for the Company Intellectual Property and any intellectual property in the public domain, no other Intellectual Property is, to the Knowledge of the Company, necessary to conduct the business of the Company in the manner currently conducted. The Company has the sole and exclusive right to bring actions for infringement, unauthorized use, or misappropriation of the Owned Company Intellectual Property.

(6) To the Knowledge of the Company, the conduct of the business of the Company, as currently conducted, does not infringe, violate or constitute a misappropriation of any Intellectual Property of any third party. During the four (4) years prior to the date of this Agreement, the Company has not received any written claim or notice from any person that the use by the Company of the Company Intellectual Property infringes upon or misappropriates any Intellectual Property of any person. During the four (4) years prior to the date of this Agreement, there have been no actions pending, the Company has not been threatened in writing with respect to any action, or, to the Knowledge of the Company, no action has otherwise been threatened against the Company alleging that: (i) the business of the Company infringes, violates or constitutes a misappropriation of (or in the past constituted a misappropriation of) the rights of any person in or to its intellectual property; or (ii) any of the Registered Intellectual Property is invalid or unenforceable.

(7) The Company has entered into written agreements with every current and former employee of the Company and with every current and former independent contractor who has contributed to or participated in the creation or development of, for or on behalf of the Company any Owned Company Intellectual Property, whereby such employees and independent contractors assign to the Company any interest, right and title they may have in any Owned Company Intellectual Property developed or created by such employee or independent contractor and to the Knowledge of the Company, all such agreements are binding on the parties thereto. During the four (4) years prior to the date of this Agreement, the Company has implemented commercially reasonable measures designed to protect and maintain the confidentiality of Owned Company Intellectual Property of a nature that the Company intends to keep confidential.

(8) To the Company's Knowledge, no third party is infringing, violating or misappropriating in any material respect any of the Company Intellectual Property owned or purported to be owned by the Company, including any Company Software (the "Owned Company Intellectual Property").

(9) Section 4.11(i) of the Company Disclosure Schedule contains a complete and accurate list of all Software that is owned by the Company and sold, licensed, leased or otherwise distributed by the Company or authorized resellers to end user customers of the Company's products or services in connection with the business (the "Company Software").

(10) All Company Software is free from any defect or programming that would reasonably be expected to have a material adverse effect on the Company, including major bugs, logic errors or failures of such Software to operate in all material respects as described in the related documentation and specifications for such Company Software. Except for any components of the source code licensed from third parties, the Company has actual and sole possession and control of the complete source code of the Company Software. To the Knowledge of the Company, no event has occurred, and no circumstance or condition exists, that (with or without notice or lapse of time) will, or could reasonably be expected to, result in the disclosure or delivery to any third party of the source code for the Company Software other than to employees, contractors and service providers who have access to the source code in the Ordinary Course of Business for purposes of the hosting, support, development and maintenance of the Company Software. Except as set forth in Section 4.11(j) of the Company Disclosure Schedule, the Company has not entered into any agreement requiring that the Company Software source code or related know-how be place in escrow so that a licensee or other person might obtain access to it upon the occurrence of any release condition. To the Knowledge of the Company, the Company Software (as used or distributed by the Company) does not contain any "back door," "time bomb," "Trojan horse," "worm,"

"drop dead device," "virus" (as these terms are commonly used in the computer software industry), or other Software routines or hardware components intentionally designed to permit unauthorized access, to disrupt, disable or erase Software, hardware or data, or to perform any other similar type of unauthorized activities.

(11) Except as set forth in Section 4.11(k) of the Company Disclosure Schedule, no Company Software or Owned Company Intellectual Property is, in whole or in part, subject to the provision of any license for Open Source Materials that: (i) requires the distribution or making available of the source code for the Company Software to the general public; (ii) prohibits or limits the Company from charging a fee or receiving consideration in connection with sublicensing or distributing any Company Software; (iii) except as specifically permitted by applicable Law, grants any right to any third party or otherwise allows any such third party to decompile, disassemble or otherwise reverse-engineer any Company Software; or (iv) requires the licensing of any Company Software to the general public for the purpose of permitting others to make derivative works of Company Software (any such open source or other type of license agreement or distribution model described in clause (i), (ii), (iii) or (iv) above, a "Limited License"). Except as set forth in Section 4.11(k) of the Company Disclosure Schedule, no Company Software is distributed with any Software that is subject to a Limited License, nor does any Company Software statically link with any such Software or constitute a derivate work of any such Software.

(12) Except as would not reasonably be expected to have a material adverse effect on the Company, the computer systems, computer software and hardware, telecommunications systems, network infrastructure and related equipment used by the Company in the conduct of its business (collectively, "Systems") are of sufficient quality, capacity and processing power to carry out the current data processing and telecommunications requirements of the business of the Company as currently conducted. During the four (4) years prior to the date of this Agreement, the Company has reasonable procedures in place designed to ensure the security of the Company's Systems and the data stored on them. To the Knowledge of the Company, none of the Company's Systems contain any viruses or any code calculated to adversely affect any Software or data Processed by the Company.

(13) Except with respect to the IP Contracts, there are no milestones, royalties, fees, commissions and other amounts payable by the Company to any other person upon or for the use of any Company Intellectual Property.

(14) Except as set forth in Section 4.11(n) of the Company Disclosure Schedule, no Owned Company Intellectual Property was developed by the Company, in whole or in part (i) under an agreement with or using the resources of any Governmental Entity, academic institution or other Entity that would subject any Owned Company Intellectual Property to the rights of, or payment or other

obligations to, any Governmental Entity, academic institution or other Entity or (ii) under any grants or other funding arrangements with third parties.

xii. Agreements, Contracts and Commitments; Government Contracts.

(1) Section 4.12(a) of the Company Disclosure Schedule sets forth a list of each Contract that is in effect, and that has not expired or been terminated in accordance with its terms, as of the date of this Agreement, to which the Company is a party or by which the Company is bound of the following categories (collectively with the IP Contracts and the Company Leases, the "Company Material Contracts"):

(a) any Contract (or group of related Contracts) that requires future payments by or to the Company in excess of $100,000 in any calendar year, including any such Contract (or group of such Contracts that are related) for the purchase, lease or sale of real property, raw materials, goods, commodities, utilities, equipment, supplies, products or other personal property, or for the provision or receipt of services, in each case to the extent the Contract is not terminable without penalty on 90 days' or shorter notice;

(b) (A) any Contract relating to the acquisition or disposition by the Company of any operating business or material assets (other than pursuant to non-exclusive licenses or grants of rights); or (B) any Contract under which the Company have any indemnification obligations, other than any such Contracts entered into in the Ordinary Course of Business;

(c) (A) any guaranty, surety or performance bond or letter of credit issued or posted, as applicable, by the Company; (B) any Contract evidencing or relating to Indebtedness of the Company or providing for the creation of or granting any Lien upon any of the property or assets of the Company (excluding Permitted Liens); (C) any Contract (1) relating to any loan or advance to any Person which is outstanding as of the date of this Agreement (other than immaterial advances to employees and consultants in the Ordinary Course of Business) or (2) obligating or committing the Company to make any such loans or advances; and (D) any currency, commodity or other hedging or swap Contract;

(d) (A) any Contract creating or purporting to create any partnership or joint venture or any sharing of profits or losses by the Company with any third party (other than ordinary course commercial contracts entered into with third parties); or (B) any Contract that provides for "earn-outs" or similar milestone payments by or to the Company that have not yet been paid to the Company (excluding any contingent payments arising pursuant to recruiting agreements for service providers to the Company entered in into in the Ordinary Course of Business);

(e) any employment agreement, offer letter, independent contractor agreement, or other Contract for the employment or engagement of any current director, officer, employee, or individual independent contractor of the Company that: (1) provides for annual compensation or payments in excess of $100,000 or (2) is not immediately terminable by the Company without penalty, severance, or other cost or liability;

(f) any Contract with any Person that provides for retention payments, change of control payments, accelerated vesting or any other payment or benefit that will become due as a result of the Merger or any other transaction contemplated by this Agreement;

(g) any collective bargaining agreement or similar Contract with any labor union, works council, or other labor organization;

(h) any separation agreement or settlement agreement with any Person, including any settlement agreement, consent decree, or other similar agreement with any Governmental Entity, in each case, under which the Company has any current actual or potential liability;

(i) any Contract to which any Governmental Entity is a party;

(j) (A) any Contract containing covenants restricting or purporting to restrict competition which, in either case, have, would have or purport to have the effect of prohibiting the Company or, after the Closing, Parent or the Surviving Corporation from engaging in any business or

activity in any geographic area or other jurisdiction, other than any such covenant set forth in this Agreement or the agreements ancillary hereto; (B) any Contract in which the Company has granted "exclusivity" or that requires the Company to deal exclusively with, or grant exclusive rights or rights of first refusal to, any customer, vendor, supplier, distributor, contractor or other Person or that is a requirements contract; (C) any Contract that includes minimum purchase conditions or other requirements, in either case that exceed $100,000 in any calendar year to the extent the Contract is not terminable without penalty on 90 days' or shorter notice; or (D) any Contract containing a "most-favored-nation," "best pricing" or other similar term or provision by which another party to such Contract or any other Person is, or could become, entitled to any benefit, right or privilege which, under the terms of such Contract, is required to be at least as favorable to such party as those offered to another Person;

(k) any Contract involving a sales agent, representative, middleman, marketer, broker, or similar Person who is entitled to receive commissions, fees or markups related to the provision or resale of services of the Company;

(l) any Contract with a Payor or involving a Payor Program pursuant to which the Company received payments in excess of $100,000 during the calendar year ended December 31, 2019;

(m) any Contract with any Affiliate of the Company; and

(n) any Contract not otherwise listed or required to be listed in Section 4.12(a) of the Company Disclosure Schedule that, if terminated, or if such Contract expired without being renewed, would have a Company Material Adverse Effect.

(2) With respect to each Company Material Contract listed or required to be listed in Section 4.12(a) of the Company Disclosure Schedule: (i) such Company Material Contract is, to the Knowledge of the Company, binding and enforceable against the Company and, to the Knowledge of the Company, against each party thereto other than the Company, in accordance with its terms, subject to

(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; and (ii) the Company is not in material breach or material default of such Company Material Contract, nor with the giving of notice or the giving of notice and passage of time without a cure would the Company be in material breach or material default of such Company Material Contract, and, to the Knowledge of the Company, no other party to such Company Material Contract is in material breach or material default of such Company Material Contract. The Company has made available to Parent true and complete copies of each such Company Material Contract in all material respects (including all modifications, amendments and supplements thereto and waivers thereunder, but not including purchase orders and similar confirmatory documents not specific to provisions that make such Contract a Company Material Contract). Since January 1, 2019, the Company has not received any written notice or, to the Knowledge of the Company, other communication regarding any actual or possible violation or breach of, or default under, any Company Material Contract by the Company.

(3) As of the date of this Agreement, no third party to any Company Material Contract has indicated to the Company in writing or, to the Knowledge of the Company, orally that it desires to materially modify, terminate or cancel any Company Material Contract to which it is a party.

(4) The Company is not, and has never been, suspended or debarred from bidding on contracts or subcontracts with any Governmental Entity; no such suspension or debarment has been initiated or, to the Knowledge of the Company, threatened in writing; to the Knowledge of the Company, there is no valid basis for suspension or debarment, and the consummation of the transactions contemplated by this Agreement will not result in any such suspension or debarment. The Company has not been audited or investigated and is not now being audited or, to the Knowledge of the Company's, investigated by any Governmental Entity nor, to the Company's Knowledge, has any such audit or investigation been threatened in writing. The Company has no agreements, Contracts or commitments which require it to obtain or maintain a security clearance with any Governmental Entity.

xiii.Litigation

. Except as set forth in Section 4.13 of the Company Disclosure Schedule, there is no private or governmental action, suit, proceeding, claim, arbitration or, to the Knowledge of the Company, investigation pending before any Governmental Entity or, to the Knowledge of the Company, threatened against or affecting the Company or any of its properties. There are no judgments, orders or decrees by any Governmental Entity outstanding against the Company.

xiv.Environmental Matters.

(1) The Company: (i) has at all times during the past four (4) years complied with, and is currently in compliance with, all applicable Environmental Laws; (ii) holds all Permits required under Environmental Laws to operate and conduct its business as currently operated and conducted; (iii) is in compliance in all respects with such Permits; and (iv) has not released or discharged on any real property leased or otherwise operated by the Company any Hazardous Materials in the conduct of its business, except in each case as has not had, and would not reasonably be expected to result in, a Company Material Adverse Effect.

(2) The Company has not received any written notice, demand, letter, claim or request for information, and has no Knowledge of any pending or threatened notice, demand, letter, or claim or request for information, alleging that the Company may be in violation of, liable under or have obligations under any Environmental Law.

xv.Employee Benefit Plans.

(1) Section 4.15(a) of the Company Disclosure Schedule sets forth a complete and accurate list of all Employee Benefit Plans maintained, or contributed to, by the Company (the "Company Employee Plans").

(2) With respect to each Company Employee Plan, the Company has made available to the Parent, a complete and accurate copy of: (i) such Company Employee Plan including all amendments thereto (or a written summary of any unwritten plan); (ii) if applicable, the most recent annual report (Form Series 5500 and all schedules and financial statements attached thereto) filed with the Internal Revenue Service (the "IRS"); (iii) each trust agreement, group annuity Contract and summary plan description with the summary of material modifications thereto, if any, relating to such Company Employee Plan; (iv) all material written agreements and Contracts relating to each Company Employee Plan, including administrative service agreements and group insurance Contracts, (v) the most recent financial statements for each Company Employee Plan that is funded; (vi) all correspondence to or from

any governmental agency relating to any Company Employee Plan, (vii) all model Consolidated Omnibus Budget Reconciliation Act of 1985, as amended, forms and related notices, (viii) all HIPAA privacy notices and all business associate agreements to the extent required under HIPAA, (ix) the most recent IRS determination, advisory or opinion letter issued with respect to or relating to each Company Employee Plan and any pending request for such determination, advisory or opinion letter, (x) all rulings or notices issued by a governmental agency with respect to each Company Employee Plan, (xi) all personnel, payroll and employment manuals and policies; (xii) all employee handbooks; and (xiii) if applicable, the most recent report regarding the satisfaction of the nondiscrimination requirements of Sections 410(b), 401(k) and 401(m) of the Code.

(3) No Company Employee Plan provides or is obligated to provide health, life insurance, or other welfare benefits to any former employee of the Company (or dependent thereof), except as may be required by applicable Law (and for which the cost of such welfare benefit is fully paid by such former employee). No Company Employee Plan provides or is obligated to provide health, life insurance, or other welfare benefits to any Person who is not a current or former employee of the Company (or dependent thereof).

(4) Each Company Employee Plan has been administered in all respects in accordance with ERISA, the Code and all other applicable Laws and the regulations thereunder including the applicable tax qualification requirements under the Code and Section 409A of the Code and in accordance with its terms and the Company have met their financial obligations with respect to such Company Employee Plan and have made all required contributions thereto (or reserved such contributions on the Company Balance Sheet), in each case, except as would not have, and would not reasonably be expected to result in, a material adverse effect on the Company.

(5) The assets of each Company Employee Plan which is funded are reported at their fair market value on the books and records of such Employee Benefit Plan, except as would not have, and would not reasonably be expected to result in, a material adverse effect on the Company.

(6) All the Company Employee Plans that are intended to be qualified under Section 401(a) of the Code have received determination letters or is entitled to rely on an advisory or opinion letters from the IRS to the effect that the form of such Company Employee Plans are qualified and the plans and trusts related thereto are exempt from federal income Taxes under Sections 401(a) and 501(a), respectively, of the Code, and no such letter has been revoked and, to the Knowledge of the Company, revocation has not been threatened.

(7) The Company or ERISA Affiliate has not, within the past four (4) years, maintained, been a participating employer, contributed to, or had any liability with respect to: (i) a Company Employee Plan which is subject to Section 412 of the Code or Section 302 or Title IV of ERISA; or (ii) a "Multiemployer Plan" (as defined in Section 3(37) or 4001(a)(3) of ERISA or Section 413(c) of the Code). No Company Employee Plan is funded by, associated with or related to a "voluntary employee's beneficiary association" within the meaning of Section 501(c)(9) of the Code. No Company Employee Plan holds securities issued by the Company.

(8) Each Company Employee Plan that is a "nonqualified deferred compensation plan" (as defined in Code Section 409A(d)(1)) has been operated since January 1, 2005 in good faith compliance with Code Section 409A and applicable IRS guidance, except as would not have, and would not reasonably be expected to result in, a material adverse effect on the Company.

(9) The Company has not made any plan or commitment to establish any new Company Employee Plan, modify any Company Employee Plan (except to the extent required by Law or to conform any such Company Employee Plan to the Law, in each case, as previously disclosed to Parent in writing, or as required by this Agreement), or to enter into any Company Employee Plan.

(10) Neither the execution, delivery or performance of this Agreement, nor the consummation of the Merger or any of the other transactions contemplated by this Agreement, will or may (either alone or in connection with any other event) create or otherwise result in any liability with respect to a Company Employee Plan. The Company does not have any obligation to make, nor does any Contract contemplate making, a "gross-up" or similar payment in respect of any Taxes that may become payable under Section 4999 or 409A of the Code.

xvi. Compliance With Laws; Registrations; Healthcare Compliance.

(1) During the four (4) year period prior to the date hereof, the Company has been compliance with and is not in violation of any applicable provisions of any Law applicable to the conduct of its business, or the ownership or operation of its properties or assets, except for any such failure to be in compliance that has not had, and would not reasonably be expected to be material to the Company. During the four (4) year period prior to the date hereof, the Company has not received any written notice alleging any material violation with respect to any applicable provisions of any Law with respect to the conduct of its business, or the ownership or operation of its properties or assets. To the Knowledge of the Company, no investigation or review by any Governmental Entity with respect to the Company is pending or is being threatened. To the Knowledge of the Company, no material change is required in any of the Company's processes, properties or procedures in order to bring them into compliance in all material respects with any applicable Law. The Company has not received any written or, to the Knowledge of the Company, oral notice or communication of any material noncompliance with any applicable Law that has not been cured as of the date hereof.

(2) Section 4.16(b) of the Company Disclosure Schedule lists all Registrations required to conduct the business of the Company as currently conducted and the Company has all Registrations from any applicable Governmental Entity required to conduct its business as currently conducted, other than Registrations the failure of which to be held has not had, and would not reasonably be expected to be material to the Company.

(3) The Company is presently in compliance in all material respects with all applicable Laws related to the provision of health care services ("Health Laws"), including, but not limited to, the Clinical Laboratory Improvement Amendments of 1988, 42 U.S.C. 263a; Title XVIII of the Social Security Act, 42 U.S.C. §§ 1395-1395lll (the Medicare statute), including specifically, the Ethics in Patient Referrals Act, as amended, or "Stark Law," 42 U.S.C. § 1395nn; Title XIX of the Social Security Act, 42 U.S.C. §§ 1396-1396w-5 (the Medicaid statute); the Federal Health Care Program Anti-Kickback Statute, 42 U.S.C. § 1320a-7b(b); the False Claims Act, as amended, 31 U.S.C. §§ 3729 et seq.; the Civil Monetary Penalties Law, 42 U.S.C. §§ 1320a-7a; Criminal False Statements Law 1320a-7b(a); the Exclusions Law, 42 U.S.C. § 1320a-7; The Genetic Information Nondiscrimination Act of 2008; state laboratory licensing Laws; and any similar state and local Laws that address the subject matter of the foregoing; and as each of the foregoing may be amended from time to time. None of the Company or, to the Knowledge of the Company, its employees or agents has received, with respect to the Company: (i) written notice of any violation, alleged violation of, or liability under, any such Health Laws; or (ii)

written notice of any actual, alleged, or potential obligation on the part of the Company to undertake, or to bear all or any portion of the cost of, any remedial action related to such Health Laws.

(4) Neither the Company nor, to the Knowledge of the Company, any of its officers, directors, employees, or independent contractors have been convicted of or are being investigated for, or have engaged in conduct that would constitute, an offense related to Medicare or any other Federal Health Care Program (as defined in 42 U.S.C. § 1320a-7b(f)). No current officer, director, employee or independent contractor of the Company (whether an individual or Entity), has been excluded from participating in any Federal Health Care Program, subject to sanction pursuant to 42 U.S.C. § 1320a-7a or § 1320a-8, or been convicted of a crime described at 42 U.S.C. § 1320a-7b, nor, to the Knowledge of the Company, are any such exclusions, sanctions or charges threatened or pending. Neither the Company nor any of its officers, directors, employees, and, to the Knowledge of the Company, independent contractors is a party to or has any ongoing reporting obligations pursuant to any corporate integrity agreements, deferred prosecution agreements, monitoring agreements, consent decrees, settlement orders, plans of correction or similar agreements with, or imposed by, any Governmental Entity.

xvii.Privacy; Security Measures.

(1) The Company has at all times during the past four (4) years complied with: (i) all Privacy and Security Laws and (ii) all Company Privacy Commitments (as defined below), except as would not reasonably be expected to result in liability material to the Company.

(2) The Company has at all times during the past four (4) years: (i) obtained or received consents, if any, from data subjects required for the Company to comply with Privacy and Security Laws, (ii) abided by any privacy choices (including opt-out preferences) of data subjects relating to Personal Data exercised pursuant to Privacy and Security Laws or Company Privacy Commitments described in Section 4.17(b)(iii), and (iii) complied with all (A) Company privacy policies; (B) applicable industry self-regulatory obligations and commitments of the Company regarding the collection, retention, storage, disposal, use, disclosure, transfer, protection, security, distribution or other Processing of Personal Data, (C) obligations of the Company under Contracts relating to the Processing of Company Data, (D) policies and obligations applicable to the Company as a result of any certification by the Company under the EU-U.S. and Switzerland-U.S. Privacy Shield frameworks; and (E) third party access program agreements to which the Company is a party, in each case, as required by applicable Privacy and Security Laws or by the terms of any Contract by which the Company is bound, or by the terms of the applicable Company privacy policy (collectively, Sections 4.17(b)(i) through 4.17(b)(iii), the "Company Privacy Commitments").

(3) The Company has made available to the Parent accurate and complete copies of the Company privacy policies and privacy notices of the Company published and relating to Privacy and Security Laws including, without limitation, the current Notices of Privacy Practices adopted by the Company pursuant to HIPAA. All workforce (as such term is defined in 45 C.F.R. § 160.103) members of the Company have received training with respect to compliance with Privacy and Security Laws.

(4) The Company has entered into valid business associate agreements with all third parties acting as a business associate or subcontractor, as applicable, and, each as defined in 45 C.F.R. § 160.103, of the Company, and with each covered Entity for which the Company is a business associate, if any, each of which business associate agreements is and has been valid during which Company and such third party were in a business associate relationship as defined by HIPAA. The Company (i) to the

Knowledge of the Company, is not under investigation by any Governmental Entity for a violation or alleged violation of any Privacy and Security Law or Company Privacy Commitments; (ii) has not received any written inquiry, notice of, or request for any investigation or subpoena from the United States Department of Health and Human Services Office for Civil Rights, Department of Justice, FTC, the Attorney General of any state or territory of the United States or any Governmental Entity relating to any such violations; and (iii) during the past four (4) years, has received no notices of, and has no Knowledge of any, claims, actions, suits, investigations, inquiries or proceedings asserted or threatened, against the Company related to any such violations. The Company has made available to the Parent accurate and complete copies of any written complaint(s) delivered to the Company alleging a violation of any Privacy and Security Laws. To the Knowledge of the Company, no "breaches" (as such terms are defined in

HIPAA) have occurred with regard to any Company assets or locations.

(5) Except as would not reasonably be expected to result in liability material to the Company, in the past four (4) years, (i) the Company has at all times taken commercially reasonable steps (including implementing and maintaining security systems and technologies in compliance with all Privacy and Security Laws and Company Privacy Commitments) designed to preserve and protect Company Data against (A) loss; (B) theft; and (C) accidental, unauthorized, or unlawful Processing in a manner appropriate to the risks represented by the Processing of such data by the Company and for the Company by its data processors or service providers; and (ii) the Company has taken commercially reasonable steps designed to ensure the reliability of the employees and contractors that have access to Company Data and designed to ensure that all employees and contractors with the right to access such data are subject to confidentiality obligations. At all times during the past four (4) years, to the extent required by applicable Privacy and Security Laws or Company Privacy Commitments, the Company has contractually obligated third parties that service, host, manage, access or otherwise Process Company Data to comply with applicable Privacy and Security Laws and applicable obligations under Company Privacy Commitments. The Company has no Knowledge that any such third parties that service, host, manage, access or otherwise Process Company Data, in their provision of services to the Company, have failed to comply in any material respect with applicable Privacy and Security Laws or applicable Company Privacy Commitments.

(6) To the Knowledge of the Company, in the four (4) years prior to the date of this Agreement, except as would not reasonably be expected to result in liability material to the Company, (i) no unauthorized access to any Company Systems used by the Company to maintain Company Data, or any Company Data in the possession, custody or control of any data processor or service provider of the Company, and (ii) no loss, theft, unauthorized access to, or unauthorized use, acquisition, handling, disclosure, or other Processing of, any Company Data or Personal Data maintained by or otherwise in the possession, custody or control of the Company (each, a "Security Incident") has occurred. The Company has taken commercially reasonable actions to address, and where applicable, remedy the cause of, all Security Incidents that, to the Knowledge of the Company, have occurred in the four (4) years prior to the date of this Agreement. The Company has made all notifications to Persons, Governmental Entities, media, customers or other third parties required under Privacy and Security Laws or Company Privacy Commitments arising out of or relating to any Security Incident that, to the Knowledge of the Company, has occurred in the four (4) years prior to the date of this Agreement.

(7) The Company employs and during the four (4) years prior to the date of this Agreement has employed commercially reasonable security measures that materially comply with applicable Privacy and Security Laws that are designed to ensure the security of all Personal Data. The Company has provided all requisite notices and obtained all required consents, if any, required by the

Privacy and Security Laws necessary in connection with the consummation of the transactions contemplated hereunder. To the Knowledge of the Company, the execution and delivery of this Agreement and any and all related documents and the consummation of the transactions contemplated hereby and thereby will not cause, constitute, or result in a material breach or violation by the Company of any Company Privacy Commitments or Privacy and Security Laws.

(8) The Company has regularly conducted, or retained a third party to conduct on its behalf, security risk assessments and privacy impact assessments, in each case to the extent required by applicable Privacy and Security Laws. The Company has used reasonable efforts to address and remediate all material threats and deficiencies in each assessment.

xviii.Labor Matters.

(1) The Company has provided to the Parent a list, complete and accurate as of the date of this Agreement, of the following information for each current employee and individual independent contractor, advisor, and consultant of the Company, as applicable: (i) name; (ii) status as an employee or independent contractor; (iii) job title, position, or a description of their contracted services rendered to the Company; (iv) start date; (v) location of employment or where such individual provides serves to the Company: (vi) full-time, part-time, or temporary status; (vii) base salary or base hourly wage or contract rate; (viii) target bonus rate or target commission rate; (ix) accrued but unused vacation time and/or paid time off; (x) whether the individual is currently on a leave of absence, and if so, anticipated return date; (xi) visa status and type, if applicable, and visa expiration date; (xii) exempt or non-exempt classification (as applicable) under the Fair Labor Standards Act ("FLSA") or any other similar state Laws.

(2) The Company is not a party to or otherwise bound by any collective bargaining agreement, Contract or other agreement with a labor union or labor organization. No labor union or other collective bargaining unit represents or, to the Knowledge of the Company, claims to represent any of the Company's employees and, to the Knowledge of the Company, there is no union campaign being conducted to solicit cards from employees to authorize a union to request a National Labor Relations Board certifications election with respect to the Company's employees. The Company has never experienced any union organization campaigns, labor disputes, work stoppages, lockouts, or slowdowns due to labor disagreements. To the Company's Knowledge, there is no labor strike, dispute, work stoppage, lockout slowdown, or organization campaign pending or threatened against the Company.

(3) The Company is in material compliance with all Laws pertaining to employment and employment practices, including, but not limited to, Laws respecting payment of wages, hours of work, fringe benefits, paid sick leave, employment or termination of employment, leave of absence rights, employment policies, immigration, terms and conditions of employment, child labor, labor or employee relations, affirmative action, government contracting obligations, equal employment opportunity and fair employment practices, disability rights or benefits, workers' compensation, unemployment compensation and insurance, health insurance continuation, whistle-blowing, privacy rights, harassment, discrimination, retaliation, and working conditions or employee safety or health. The Company is in material compliance with all public health orders applicable to it pertaining to COVID-19 and the COVID-19 Pandemic. All current and former employees of the Company have provided documentation to the Company reflecting their authorization under applicable United States immigration Laws to work for the Company. There are no actions, suits, claims, charges, complaints, grievances, arbitrations, investigations or other legal proceedings against the Company pending, or to the Company's Knowledge, threatened to be brought or

filed, by or with any Governmental Entity or arbitrator in connection with the employment or engagement of any current or former employee, applicant, contractor, or other individual service provider of the Company, including, without limitation, any claim relating to unfair labor practices, employment discrimination, harassment, retaliation, equal pay, wage or hours violations, unpaid wages, unpaid commissions, wrongful termination or any other employment related matter arising under applicable Laws. The Company has never effectuated a "mass layoff," "plant closing," partial "plant closing," "relocation," "termination," or similar action (each as defined in the Worker Adjustment and Retraining Notification Act or any similar state Law).

(4) (i) All employees of the Company are employed on an "at-will" basis and their employment can be terminated at any time for any reason without notice or payment of severance or other compensation or consideration being owed to such individual other than amounts owed as of the date of termination from employment based on service before that date or as required under applicable Law; (ii) the Company's relationships with all individuals who act as contractors or other service providers to the Company can be terminated at any time for any reason without notice or any amounts being owed to such individual other than with respect to compensation or payments accrued before the termination; (iii) no employee is unable to perform services for the Company as a result of a leave of absence; (iv) each individual who has rendered services to the Company who was classified by the Company as having the status of an independent contractor or other non-employee status for any purpose (including for purposes of taxation and Tax reporting and under any Company Employee Plans or prior employee benefit plans) was properly so characterized; (v) all employees have been correctly classified as exempt or non-exempt for purposes of the FLSA and any similar state law, and overtime has been properly paid for all such employees classified as non-exempt; and (vi) the Company has withheld and paid to the appropriate Governmental Entity or is holding for payment not yet due to such Governmental Entity all amounts required to be withheld from all payments to its employees and independent contractors and is not liable for any arrears of wages, Taxes, penalties or other sums for failure to comply with any of the foregoing.

(5) (i) No allegations of sexual harassment or misconduct have been made against (A) any executive, officer, or director of the Company in his/her capacity as an employee of the Company or, to the Knowledge of the Company, otherwise or (B) any employee of the Company in his/her capacity as an employee of the Company who, directly or indirectly, supervises other employees of the Company, and (ii) the Company has not entered into any settlement agreement or conducted any investigation related to allegations of sexual harassment or sexual misconduct by an employee, contractor, director, officer or other representative of the Company.

(6) All employees of the Company who are not citizens or permanent residents of the country in which they work have provided documentation to the Company, as applicable, reflecting their authorization under applicable United States or foreign immigration laws to work in his or her current position.

(7) No executive or officer of the Company or other group of employees has provided notice to the Company of their intent to terminate their employment with the Company, and to the Company's Knowledge, no executive or officer of the Company or other group of employees intends to terminate their employment with the Company. To the Knowledge of the Company, no employee or independent contractor of the Company is in breach of any non-competition agreement or restrictive covenant to a former employer or other Entity relating to the right of any such employee or independent contractor to be employed or engaged by the Company because of the nature of the business currently

conducted or proposed to be conducted by the Company or to the use of trade secrets or proprietary information of the former employer or other Entity.

xix.Insurance

. Section 4.19 of the Company Disclosure Schedule contains a list of all insurance policies maintained by the Company as of the date hereof in connection with its business (the "Insurance Policies"). Each Insurance Policy is in full force and effect and is valid, outstanding and enforceable, and all premiums due thereon have been paid in full. None of the Insurance Policies shall terminate or lapse (or be affected in any other adverse manner) by reason of the transactions contemplated by this Agreement. The Company has complied in all material respects with the provisions of each Insurance Policy under which it is the insured party. No insurer under any Insurance Policy has cancelled or generally disclaimed liability under any such policy or indicated any intent to do so or not to renew any such policy. The Company has complied in all material respects with the provisions of each such insurance policy under which it is the insured party. All claims pending as of the date hereof under the Insurance Policies have been filed in a timely fashion. Copies or certificates of coverage in respect of all Insurance Policies set forth in Section 4.19 of the Company Disclosure Schedule have been made available to the Parent.

xx.Assets

. The Company has good and marketable title to all of its properties, interests in properties and assets, real and personal, reflected in the Company Balance Sheet or acquired after the Company Balance Sheet Date (except properties, interests in properties and assets sold or otherwise disposed of since the Company Balance Sheet Date in the Ordinary Course of Business), or with respect to leased properties and assets, valid leasehold interests therein, free and clear of all Liens except Permitted Liens. The plants, property and equipment of the Company that are used in the operations of the Company's business are free from material defects, have been maintained in accordance with normal industry practice, are in good operating condition and repair (subject to normal wear and tear), are suitable for the purpose for which they are presently used.

xxi.Payors

. Section 4.21 of the Company Disclosure Schedule sets forth a list of all Payors during the fiscal year ended December 31, 2019 which accounted for more than One Hundred Thousand Dollars ($100,000) in revenues during either such period, and the amount of revenues accounted for by such Payor during each such period. In the last four (4) years, the Company has not received any written notice of any existing, announced or anticipated changes in the policies of any such Payor which has had, or would reasonably be expected to result in, a material adverse effect on the Company. The billing and collection practices of the Company are, and in the last four (4) years have been, in material compliance with the written reimbursement policies of all Payors. The Company has not in the last four (4) years (i) submitted to any Payor any abusive or improper claim for payment or (ii) received and retained any payment or reimbursement from any Payor in excess of the proper amount allowed by any applicable Payor agreements. There are no material appeals or audits outstanding with, or any material outstanding overpayments or refunds due to, any Payor Program. To the Knowledge of the Company, there is no investigation, audit, claim review, or other action pending or threatened, which could result in a suspension, revocation, termination, restriction, limitation, modification or nonrenewal of any Payor agreement, or result in the exclusion of Company from any Payor Program.

xxii.Books and Records

. The minute books, stock record books, and all other corporate and financial records of the Company are complete and correct in all material respects, have been maintained in all material respects in accordance with sound business practices and legal requirements, and to the Knowledge of the Company, there are no material inaccuracies or discrepancies of any kind contained therein. The minute books of the Company, all of which have been made available to the Parent, contain records of all corporate action taken by the stockholders, the Company Board, and committees of the Company Board and are accurate and complete in all material respects, and no meeting of any such shareholders, board of directors, or committee has been held at which any corporate action was taken for which minutes have not been prepared and are not contained in such minute books. At the Closing, all of such books and records will be in the possession of the Company.

xxiii.No Illegal Payments

. None of the Company or, to the Knowledge of the Company, any director or officer of the Company or any other person acting on behalf of any of the aforementioned (i) has been convicted of, or, to the Knowledge of the Company, has been accused, charged or investigated by any Governmental Entity with any violation of, any Anti-Corruption/AML Law or other applicable Law related to fraud, theft, embezzlement, bribery, breach of fiduciary responsibility, financial misconduct, obstruction of an investigation or sanctioned violations; (ii) has used any funds (whether of the Company or otherwise) for unlawful contributions, gifts, entertainment or other unlawful expenses relating to political activity; (iii) has with a corrupt or improper intention directly or indirectly (through third parties) paid, provided, promised, offered, or authorized the payment or provision of money, a financial advantage, or anything else of value to (a) an official, employee, or agent of any government, military, public international organization, state-owned or affiliated Entity (including, but not limited to, sovereign wealth funds or public hospitals, universities, or research labs), political party, or any instrumentality thereof (collectively "Government Officials"), (b) a political party or candidate for political office, or (c) any other person, for purposes of obtaining, retaining, or directing permits, licenses, favorable tax or court decisions, special concessions, Contracts, business, or any other improper advantage; (iv) has otherwise offered, promised, authorized, provided, or incurred any bribe, kickback, or other corrupt or unlawful payment, expense, contribution, gift, entertainment, travel or other benefit or advantage (collectively, "Restricted Benefits") to or for the benefit of any Government Official, political party or candidate, or any other person; (v) has solicited, accepted, or received any Restricted Benefits from any person; (vi) has established or maintained any slush fund or other unlawful or unrecorded fund or account; (vii) has inserted, concealed, or misrepresented corrupt, illegal, or improper payments, expenses or other entries in their books and records; (viii) has concealed or disguised the existence, illegal origins, and/or illegal application of criminally derived income/assets or otherwise caused such income or assets to appear to have legitimate origins or constitute legitimate assets; (ix) has used any funds to finance terrorist, drug-related, or other illegal activities; (x) has violated, caused other parties to violate, or is currently in violation of any provision of any Anti-Corruption/AML Laws or any Laws of similar effect; or (xi) has received any communication that alleges any of the foregoing. The Company has not conducted any internal or government-initiated investigation, or made a voluntary or involuntary disclosure to any Governmental Entity with respect to any alleged act or omission arising under or relating to any noncompliance with any Anti-Corruption/AML Laws. There are no pending or, to the Knowledge of the Company, threatened claims against the Company with respect to violations of any Anti-Corruption/AML Laws.

xxiv.Affiliated Transactions.

(1) Other than (a) employment agreements or offer letters entered into in the Ordinary Course of Business, (b) Company Stock Options or other equity rights covering Company Capital Stock, (c) reimbursement of customary and reasonable expenses incurred on behalf of the Company, (d) Company Employee Plan disclosed on Section 4.15(a) of the Company Disclosure Schedule, (e) indemnification and other rights under any agreement with the Company, the Company Certificate of Incorporation and/or the Company Bylaws or (f) as otherwise set forth in Section 4.24(a) of the Company Disclosure Schedule, there are no loans, leases or other agreements or transactions between the Company on the one hand and any respective director, officer or employee of the Company, or to the Knowledge of the Company, any member of such officer's, director's or employee's immediate family, or any person controlled by such officer, director, or employee or his or her immediate family on the other hand. No director or officer of the Company or, to the Knowledge of the Company, any of their immediate family, owns directly or indirectly, on an individual or joint basis, any interest in, or serves as an officer or director or in another similar capacity of, any competitor, customer or supplier of the Company, or any organization which has a contract or arrangement with the Company, except that directors and officers of the Company may own stock in (but not exceeding two percent (2%) of the outstanding capital stock of) publicly traded companies that may compete with the Company.

(2) Section 4.24(b) of the Company Disclosure Schedule sets forth a list of 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.

xxv. Suppliers

. Except for ongoing discussions relating to current and past due amounts payable by the Company, the Company has no outstanding material disputes concerning products and/or services provided by any supplier or partner who either (i) in the year ended December 31, 2019, was one of the 10 largest suppliers of products and/or services to or partner of the Company, based on amounts paid by the Company with respect to such periods (a "Top 10 Supplier"), or (ii) is a sole-source supplier of significant goods or services (other than electricity, gas, telephone, water or other utilities) to the Company with respect to which alternative sources of supply are not reasonably available (each of (i) or (ii), a "Significant Supplier"). Each Top 10 Supplier is listed on Section 4.25 of the Company Disclosure Schedule. As of the date of this Agreement, the Company has not received any written or, to the Knowledge of the Company, other notice from any Significant Supplier that such supplier intends to terminate its business relationship with the Company (or the Surviving Corporation) after the Closing or that such Significant Supplier intends to terminate or materially modify existing Contracts with the Company (or the Surviving Corporation) other than communications regarding Contract negotiations and renegotiations in the Ordinary Course of Business.

xxvi. Brokers; Schedule of Fees and Expenses

. Other than Evolution Life Science Partners LLC doing business as Gordian Investments, no agent, broker, investment banker, financial advisor or other firm or person is or shall be entitled, as a result of any action, agreement or commitment of the Company or any of its Affiliates, to any broker's, finder's, financial advisor's or other similar fee or commission in connection with any of the transactions contemplated by this Agreement.

xxvii.Accounts Receivable

. Subject to any reserves set forth therein, the accounts receivable included in the Closing A/R and Cash and set forth on Section 4.27 of the Company Disclosure Schedule, are valid and genuine, have arisen solely out of bona fide sales and deliveries of goods, performance of services, and other business transactions in the Ordinary Course of Business, are not subject to any prior assignment, Lien or security interest, and are not subject to known valid defenses, set-offs or counter claims.

xxviii.Non Reliance.

(1) The Company has conducted its own independent investigation, review and analysis of the business, results of operations, prospects, condition (financial or otherwise) or assets of Parent, and acknowledges that it has been provided adequate access to the personnel, properties, assets, premises, books and records, and other documents and data of Parent for such purpose. The Company acknowledges and agrees that: (i) in making its decision to enter into this Agreement and to consummate the transactions contemplated hereby, the Company has relied solely upon its own investigation and the express representations and warranties of Parent set forth in Article V and disclaims reliance on any other representations and warranties of any kind or nature express or implied (including, except as expressly set forth in Article V or in the Subscription Agreements, any relating to the future or historical financial condition, results of operations, assets or liabilities or prospects of Parent); and (ii) none of Parent, its equityholders, lenders or any other person has made any representation or warranty as to Parent or the accuracy or completeness of any information regarding Parent made available to the Company and its representatives, except as expressly set forth in Article V and in the Subscription Agreements.

(2) In connection with the due diligence investigation of Parent, the Company and its Affiliates, securityholders, lenders and representatives have received from Parent and its Affiliates and representatives certain estimates, projections, forecasts and other forward-looking information, as well as certain business plan information, regarding Parent and its businesses and operations. The Company hereby acknowledges and agrees that, except for the representations and warranties expressly set forth in Article V and in the Subscription Agreements, neither Parent, nor any of its Affiliates, equityholders, lenders or representatives has made or is making any express or implied representation or warranty with respect to such estimates, projections, forecasts, forward-looking statements or business plans.

xxix.No Other Representations

. Except for the representations and warranties expressly made by the Company in this Article IV, as modified by the Company Disclosure Schedule, neither the Company nor any other person makes any representation or warranty of any kind, express or implied, at law or in equity, written or oral, on behalf of or with respect to the Company or otherwise, or with respect to any information provided to the Parent. All other representations or warranties are hereby disclaimed by the Company.

Article V.

REPRESENTATIONS AND WARRANTIES OF THE PARENT AND THE PURCHASER

Parent and Purchaser each represents and warrants to Company, except as disclosed in the Parent SEC Documents, in each case, prior to the date of this Agreement, and 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, as follows:

i.Organization, Standing and Power

. Each of the Parent and the Purchaser is a corporation duly organized, validly existing and in good standing under the Laws of its jurisdiction of its incorporation, has all requisite corporate power and authority to own, lease and operate its properties and assets and to carry on its business as now being conducted, and is duly qualified to do business and is in good standing as a foreign corporation in each jurisdiction in which the character of the properties it owns, operates or leases or the nature of its activities makes such qualification necessary, except where the failure to be so qualified or in good standing, individually or in the aggregate, would not reasonably be expected to materially impair the ability of the Parent or the Purchaser to consummate the transactions contemplated hereunder.

ii.Authority; No Conflict; Required Filings and Consents.

(1) Each of the Parent and the Purchaser has all requisite corporate power and authority to enter into this Agreement, perform its obligations hereunder and to consummate the transactions contemplated by this Agreement. The execution and delivery of this Agreement by the Parent and the Purchaser and the consummation by the Parent and the Purchaser of the transactions contemplated by this Agreement have been duly authorized by all necessary corporate action on the part of each of the Parent and the Purchaser, subject only to the acceptance of the Certificate of Merger by the Secretary of State of the State of Delaware. This Agreement has been duly executed and delivered by each of the Parent and the Purchaser and, assuming due authorization, execution and delivery of this Agreement by the Company, constitutes the valid and binding obligation of each of the Parent and the Purchaser, enforceable in accordance with its terms except: (i) as enforcement may be limited by applicable bankruptcy, insolvency, reorganization, moratorium and other Laws affecting creditors’ rights generally; and (ii) insofar as the availability of equitable remedies may be limited by applicable Law.

(2) Except as set forth on Schedule 5.2(b), the execution and delivery of this Agreement by each of the Parent and the Purchaser do not, and the consummation by the Parent and the Purchaser of the transactions contemplated by this Agreement shall not: (i) conflict with, or result in any violation or breach of, any provision of the certificate of incorporation or bylaws of the Parent or the Purchaser; (ii) conflict with, or result in any violation or breach of, or constitute (with or without notice or lapse of time, or both) a default (or give rise to a right of termination, revocation, invalidation, cancellation or acceleration of any obligation or loss of any material benefit) under, or require a consent or waiver under, any of the terms, conditions or provisions of any material note, bond, mortgage, indenture, lease, license, contract or other agreement, instrument or obligation to which the Parent or the Purchaser is a party or by which either of them or any of their properties or assets may be bound; or (iii) conflict with or violate any material Permit, judgment, injunction, order, decree, or other material Law applicable to the Parent or the Purchaser or any of their properties or assets, except in the case of clauses (ii) and (iii) of this Section 5.2(b) for any such conflicts, violations, breaches, defaults, terminations, cancellations, accelerations or losses which, individually or in the aggregate, would not reasonably be expected to materially impair the ability of the Parent or the Purchaser to consummate the transactions contemplated hereunder.

(3) No consent, approval, license, Permit, order or authorization of, or registration, declaration, notice or filing with any Governmental Entity is required by or with respect to the Parent or the Purchaser in connection with the execution and delivery of this Agreement or the consummation by the Parent or the Purchaser of the transactions contemplated by this Agreement, except for: (i) the filing of the Certificate of Merger with the Secretary of State of the State of Delaware and appropriate corresponding documents with the appropriate authorities of other states in which the Company is qualified as a foreign corporation to transact business; (ii) required filings under the Securities Act and the Exchange Act; and (iii) such consents, approvals, licenses, Permits, orders, authorizations, Registrations, declarations, notices and filings, the failure of which to make or obtain would not, individually or in the aggregate, reasonably be expected to materially impair the ability of the Parent or the Purchaser to consummate the transactions contemplated hereunder.

iii.Interim Operations of the Purchaser

. The Purchaser was formed solely for the purpose of engaging in the transactions contemplated by this Agreement, has not engaged in any other business activities and has conducted its operations only as contemplated hereby.

iv.Financing

. At the Effective Time, the Parent and the Purchaser will have available all the funds necessary to consummate the transactions contemplated by this Agreement and to pay the Parent Closing Cash Payments payable by the Parent or the Purchaser related to the transactions contemplated by this Agreement.

v.Brokers

. No broker, finder or investment banker is entitled to any brokerage, finder's or other fee or commission in connection with the Merger based upon arrangements made by or on behalf of the Parent, the Purchaser or any of their respective Subsidiaries or Affiliates.

vi.SEC Documents.

(1) Parent has timely filed with or furnished to (as applicable) all reports, schedules, forms, statements and other documents required to be filed or furnished (as applicable) by Parent with the SEC pursuant to the Exchange Act and the Securities Act on or prior to the date of this Agreement (collectively, the "Parent SEC Documents"). True, correct, and complete copies of all the Parent SEC Documents are publicly available on Electronic Data Gathering Analysis and Retrieval. As of their respective dates or, if amended prior to the date of this Agreement, as of the date of the last such amendment, the Parent SEC Documents (i) were prepared in all material respects in accordance with the requirements of the Exchange Act or the Securities Act, as the case may be, applicable to such Parent SEC Documents and (ii) did not, at the time they were filed, or, if amended prior to the date of this Agreement, as of the date of such amendment, contain any untrue statement of a material fact or omit 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. None of the Parent SEC Documents is the subject of ongoing SEC review or outstanding SEC investigation and there are no outstanding or unresolved comments received from the SEC with respect to any of the Parent SEC Documents.

(2) The consolidated financial statements (including all related notes thereto) of Parent included in the Parent SEC Documents (if amended, as of the date of the last such amendment filed prior to the date of this Agreement) (the "Parent SEC Financial Statements") comply in all material respects as to form with applicable accounting requirements and the published rules and regulations of the SEC with respect thereto. The Parent SEC Financial Statements fairly present, in all material respects, the consolidated financial position of Parent and its consolidated Subsidiaries, as at the respective dates thereof, and the consolidated results of their operations and their consolidated cash flows for the respective periods then ended (subject, in the case of the unaudited statements, to normal year-end audit adjustments and to the absence of information or notes not required by GAAP to be included in interim financial statements), all in conformity with GAAP (except as permitted by Regulation S-X or, with respect to pro forma information, subject to the qualifications stated therein) applied on a consistent basis during the periods involved (except as may be indicated therein or in the notes thereto).

(3) Except for matters reflected or reserved against in the unaudited balance sheet of Parent dated as of March 31, 2020 contained in the Parent SEC Documents filed prior to the date hereof (including in the notes thereto) (the "Parent Balance Sheet"), neither Parent nor any of its Subsidiaries has any material obligations or liabilities of a nature that would have been required to be disclosed on the face of the Parent Balance Sheet in accordance with GAAP, except for obligations and liabilities that: (i) were incurred since the date of the Parent Balance Sheet in the Ordinary Course of Business consistent with past practice; (ii) are incurred in connection with the transactions contemplated by this Agreement; or (iii) would not reasonably be expected to materially impair the ability of Parent or the Purchaser to consummate the transactions contemplated hereunder.

vii. Non-Reliance.

(1) The Parent has conducted its own independent investigation, review and analysis of the business, results of operations, prospects, condition (financial or otherwise) or assets of the Company, and acknowledges that it has been provided adequate access to the personnel, properties, assets, premises, books and records, and other documents and data of the Company for such purpose. The Parent acknowledges and agrees that: (i) in making its decision to enter into this Agreement and to consummate the transactions contemplated hereby, the Parent has relied solely upon its own investigation and the express representations and warranties of the Company set forth in Article IV (including the related portions of the Company Disclosure Schedule) and disclaims reliance on any other representations and warranties of any kind or nature express or implied (including, except as expressly set forth in Article IV, any relating to the future or historical financial condition, results of operations, assets or liabilities or prospects of the Company); and (ii) none of Company Equityholders, the Creditors, the Company or any other person has made any representation or warranty as to a Company Equityholder, a Creditor, the Company or the accuracy or completeness of any information regarding the Company made available to the Parent and its representatives, except as expressly set forth in Article IV (including the related portions of the Company Disclosure Schedule); provided, however, as between the parties to the Subscription Agreements, nothing in this Agreement is intended limit or restrict the rights or obligations of any Person with respect to any representation or warranty made pursuant to any Subscription Agreement to which such Person is or becomes a party.

(2) In connection with the due diligence investigation of the Company by Parent and its Affiliates, securityholders, or representatives, the Parent and its Affiliates, securityholders, and representatives have received from the Company and its Affiliates and Representatives certain estimates, projections, forecasts and other forward-looking information, as well as certain business plan information,

regarding the Company and its businesses and operations. Parent hereby acknowledges and agrees that, except for the representations and warranties expressly set forth in Article IV, neither the Company, nor any of its Affiliates, Company Equityholders, Creditors or representatives has made or is making any express or implied representation or warranty with respect to such estimates, projections, forecasts, forward-looking statements or business plans.

viii.No Other Representations

. Except for the representations and warranties expressly made by Parent in this Article V or pursuant to the Subscription Agreements, neither Parent nor any other person makes any representation or warranty of any kind, express or implied, at law or in equity, written or oral, on behalf of or with respect to Parent or otherwise, or with respect to any information provided to the Company or the Creditors. All other representations or warranties are hereby disclaimed by Parent.

Article VI.

ADDITIONAL AGREEMENTS

i.Public Disclosure

. Except as may be required by Law or stock market regulations, any press release announcing the execution of this Agreement or the consummation of the transactions contemplated by this Agreement, including the Merger shall only be issued by the Parent but shall be in such form as mutually agreed upon by the Representative and the Parent. For the avoidance of doubt, nothing in this Section 6.1 shall prevent or limit any Company Equityholder that is a venture capital fund, private equity fund or other institutional investor, Evolution Life Science Partners LLC (doing business as Gordian Investments) or any of their respective Affiliates from publishing a customary "tombstone" or similar announcement containing general information with respect to the transaction, or providing information regarding internal rate of return and multiple of invested capital, or other customary information made in confidence to limited partners, members or other current or prospective equity investors regarding the transactions contemplated hereby.

ii.Employee Matters.

(1) Each employee of the Company who continues in employment with Parent or any Affiliate thereof (including the Surviving Corporation) after the Closing will be a "Continuing

Employee." During the period beginning as of the Effective Time and ending on no earlier than the first (1st) anniversary of the Effective Time, Parent shall provide, or cause to be provided, each Continuing Employee with (i) at least the same level of base wages or base salary, as applicable, as well as bonus and incentive compensation targets or opportunities, in each case as were provided to the Continuing Employee immediately prior to the Effective Time and (ii) employee benefits that are no less favorable than those that are provided to similarly situated employees of Parent.

(2) 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 use commercially reasonable efforts to, 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.

(3) Nothing contained herein, express or implied, (x) 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, (y) 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 (z) 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.

iii.Equity Incentive Plan and 401(k) Plan Terminations

. Prior to the Effective Time, the Company Board or, if appropriate, any committee administering the Company's Stock Plans, shall have adopted such resolutions or taken such other actions as are required to: (i) cancel all options granted under such Company Stock Plans and (ii) terminate such Company Stock Plans prior to the Effective Time. The Company has provided to Parent evidence that such plans have been terminated pursuant to resolutions of the Company Board. Prior to the Effective Time, the Company Board or, if appropriate, any committee administering the Company's 401(k) Plan, shall have adopted such resolutions or take such other actions as are required to terminate such plan on or prior to the Effective Time. The Company has provided Parent with a copy of any resolutions or other corporate action evidencing that the Company's 401(k) Plan has been terminated prior to the Effective Time.

iv.Tax Matters.

(1) Preparation and Filing of Returns. The Surviving Corporation shall prepare, or cause to be prepared, and file, or cause to be filed, all Tax Returns of the Company that have an initial filing date (taking into account any automatic extensions of time to file) after the Closing Date. Each such Tax Return that relates to a taxable period (or portion thereof) ending on or before the Closing Date (a "Pre-Closing Period") shall be prepared in a manner consistent with the past practice and custom of the Company unless otherwise required by applicable Law (as reasonably determined by Parent). If the Company is permitted but not required under applicable state, local, or foreign income tax Laws to treat the Closing Date as the last day of a taxable period, then the Parties shall treat that day as the last day of a taxable period.

(2) Payment of Transfer Taxes and Fees. The Parent and the Surviving Corporation shall be responsible for all sales and transfer Taxes arising out of or in connection with the transactions effected pursuant to the Merger. The Surviving Corporation shall file all necessary documentation and Tax Returns with respect to such sales or transfer Taxes.

(3) Termination of Tax Sharing Agreements. Any and all Tax allocation or sharing agreements or other similar agreements or arrangements binding the Company shall be terminated with respect to the Company as of the day before the Closing Date and, from and after the Closing Date, the Surviving Corporation shall not be obligated to make any payment to any person pursuant to any such agreement or arrangement for any period.

(4) Tax Contests. Until the later of (i) the expiration of the General Survival Period and (ii) the release of all Escrowed Shares retained under the Escrow Agreement for claims for indemnification asserted under Article VIII of the Merger Agreement with respect to Taxes, Parent and the Surviving Corporation, on the one hand, and Representative, on the other hand, shall promptly notify each other upon receipt of written notice of any inquiries, claims, assessments, audits or similar events with respect to Taxes relating to a Pre-Closing Period (or portion thereof) (any such inquiry, claim, assessment, audit or similar event, a "Tax Matter"). Any failure to so notify the other Party of any Tax Matter shall not relieve such other party of any liability with respect to such Tax Matters except to the extent such party was actually and materially prejudiced as a result thereof. Parent shall control of the conduct of all Tax Matters; provided that, until the later of (i) the expiration of the General Survival Period and (ii) the release of all Escrowed Shares retained under the Escrow Agreement for claims for indemnification asserted under Article VIII of the Merger Agreement with respect to Taxes, to the extent the outcome of the Tax Matter would reasonably be expected to give rise to an indemnification obligation of the Escrow Beneficiaries under this Agreement, then (i) Parent shall control such Tax Matter diligently and in good faith; (ii) Parent shall keep the Representative reasonably informed regarding the status of such Tax Matter and shall provide to the Representative copies of any and all material correspondence received from the Governmental Entity related to such Tax Matter; (iii) the Representative, at its sole cost and expense, shall have the right to participate in such Tax Matter and in connection therewith, Parent shall provide the Representative with the opportunity to attend conferences with the Governmental Entity and to review and provide comments with respect to written responses provided to the Governmental Entity and (iv) Parent shall not settle, resolve, compromise or abandon (and shall not allow the Surviving Corporation to settle, resolve, or abandon) such Tax Matter without the prior written consent of the Representative (which shall not be unreasonably withheld, conditioned or delayed).

(5) Cooperation. The Parties agree to furnish or cause to be furnished to each other, upon request, as promptly as practicable, such reasonable information and assistance relating to Taxes, including, without limitation, access to books and records, as is reasonably necessary for the filing of all Tax Returns by the Parties, the making of any election relating to Taxes, the preparation for any audit by any taxing authority and the prosecution or defense of any claim, suit or proceeding relating to any Tax.

(6) Post-Closing Actions. After the Closing and until the later of (i) the expiration of the General Survival Period and (ii) the release of all Escrowed Shares retained under the Escrow Agreement for claims for indemnification asserted under Article VIII of the Merger Agreement with respect to Taxes, without the prior written consent of the Representative (which consent shall not be unreasonably withheld, conditioned or delayed), Parent shall not, and shall not cause or permit the Surviving Corporation to: (i) amend, supplement or refile any Tax Returns of the Company for a Pre-Closing Period, (ii) make, change or revoke any Tax election with respect to the Company for a Pre-Closing Period, or (iii) file or submit any voluntary disclosure or similar agreements with any Governmental Entity relating to Taxes of the Company for a Pre-Closing Period, (iv) cause the Surviving Corporation to take any action on the Closing Date after the Closing outside the Ordinary Course of Business that is not expressly contemplated by this Agreement or any Transaction Document, (v) compromise or settle any Tax liability relating to a Pre-Closing Period, in each case to the extent the

foregoing could reasonably be expected to increase the Pre-Closing Taxes for which the Escrow Beneficiaries are responsible for indemnification under Section 8.1, or (vi) agree to the waiver or any extension of the statute of limitations relating to any Taxes of the Companies for any Pre-Closing Period. For the avoidance of doubt, it shall be unreasonable for the Representative to withhold, condition or delay its consent to any action in this Section 6.4(f) that is required by Law or reasonably determined by Parent's accountants to be necessary (a) to avoid the filing of a Schedule UTP (Form 1120) (or similar Tax disclosure under state, local or non-U.S. Law), (b) to avoid or mitigate the imposition of penalties under Section 6662 of the Code or any comparable provisions of state, local or non-U.S. applicable Law, or (c) to avoid maintaining a reserve on Parent's financial statements with respect to the applicable Tax liability.

v. Directors and Officers Indemnification

. For a period of six (6) years following the Closing, Parent agrees that all rights to indemnification and all limitations on liability existing in favor of the directors and officers of the Company (the "Company Indemnitees") as provided in the Company Certificate of Incorporation and Company Bylaws as in effect as of the date of this Agreement, and otherwise pursuant to the agreements set forth on Section 6.5 of the Company Disclosure Schedule, with respect to matters occurring prior to the Closing Date shall continue in full force and effect and shall be honored by the Company without any amendment thereto. In the event the Parent or the Company or their respective successors or assigns (a) consolidates with or merges into any other person and shall not be the surviving or continuing Entity in such consolidation or merger or (b) transfers all or substantially all of its properties and assets to any person, then, in either such case, Parent or its respective successors or assigns shall cause such person to assume all of the obligations set forth in this Section 6.5.

vi. Consents

. Parent acknowledges that certain consents, authorizations, approvals and/or waivers to the transactions contemplated by this Agreement may be required from parties to contracts, leases, licenses or other agreements to which the Company is a party (including the contracts set forth on the Company Disclosure Schedule) and, except for the consents set forth in Schedule 7.1(j), such consents, authorizations, approvals and/or waivers are not a condition to the Closing and have not, or may not have, been obtained at or prior to Closing.

Article VII.

CONDITIONS

i. Conditions to the Parent's and the Purchaser's Obligation to Effect the Merger

. The obligation of the Parent and the Purchaser to consummate the Merger shall be further subject to the fulfillment at or prior to the Effective Time of each of the following additional conditions:

(1) The Parent shall have received the resignations of the officers of the Company and the members of the Company Board;

(2) The Parent shall have received written confirmation reasonably satisfactory to the Parent that the Company has canceled all options granted under the Company Stock Plans and terminated its 401(k) Plan at least one (1) day prior to the Closing Date;

(3) The Company shall have delivered a good standing certificate for the Company from the Secretary of State of the State of Delaware dated as of a date not earlier than three (3) days prior to the Closing;

(4) The Company shall have delivered the Escrow Agreement to Parent, duly executed by the Representative;

(5) The Company shall have delivered the Subscription Agreements to Parent, duly executed by the Creditors and payoff letters, invoices or other documentary evidence of the amounts owed for any unpaid Indebtedness, Company Trade Liabilities, Company Transaction Costs, Parent Closing Cash Payments and other Closing Assumed Liabilities that are to be settled at Closing in a form reasonably satisfactory to Parent;

(6) The Company shall have delivered (i) a statement conforming with the requirements of Treasury Regulation Sections 1.897-2(h) and 1.1445-2(c)(3) and reasonably satisfactory to Parent, certifying that shares of capital stock of the Company do not constitute "United States real property interests" under Section 897(c) of the Code and (ii) a form of notice to the IRS conforming with the requirements of Treasury Regulation 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;

(7) The Company shall have delivered an original properly executed IRS Form W-9 or appropriate IRS Form W-8, as applicable, from each payee of Parent Closing Cash Payments;

(8) Parent shall have received a certificate executed by the Chief Executive Officer of the Company attaching and certifying as to matters customary for a transaction of this sort, including, without limitation, (i) the true and correct copies of the Company Certificate of Incorporation and Company Bylaws, (ii) copies of resolutions duly adopted by the Company Board and Company Stockholders evidencing the taking of all corporate and stockholder action necessary to authorize the execution, delivery and performance of this Agreement, and the consummation of the transactions contemplated hereby, including the Executed Written Consent; and (iii) certificates of good standing issued by the Delaware Secretary of State and for each other state in which the character of the properties the Company owns, operates or leases or the nature of its activities makes it necessary to be qualified to do business as a foreign corporation, in each case dated as of a date no more than two Business Days prior to the Closing Date;

(9) Parent shall have received the Estimated Closing Statement;

(10) The Company shall have delivered consents by third parties under the Company Material Contracts listed on Schedule 7.1(j), confirming that such Company Material Contract will remain in full force and effect as of immediately following the Effective Time;

(11) Company shall have delivered documents evidencing its purchase and payment in full of a D&O "tail" insurance policy on terms reasonably acceptable to Parent;

(12) Parent shall have received a spreadsheet (the "Closing Payment Schedule"), setting forth: (i) each Escrow Beneficiary's Pro Rata Portion, (ii) the number of Parent Consideration Shares each Creditor is eligible to receive at Closing (minus, with respect to each Escrow Beneficiaries, its Pro Rata Portion of the Escrow Account), (iii) the number of Escrowed Shares each such Escrow Beneficiaries is eligible to receive, (iv) the name, address and email address (if available) of each

Creditor, (v) the number of shares of Company Capital Stock held by each holder thereof immediately prior to the Effective Time (including the number of shares of Company Capital Stock for which Company Stock Options, Company Warrants and Company Convertible Notes are exercisable or convertible, as applicable), (vi) a calculation of the Parent Consideration Shares which each holder of Company Capital Stock, Company Warrants, Company Convertible Notes and Company Stock Options is eligible to receive and (vii) for each Creditor and any other Person to whom payments are payable in connection with the Closing, whether any Taxes are required to be withheld (and what type of withholding applies), assuming for this purpose that the conditions of Section 7.1(g) and Section 7.1(f) have been properly satisfied;

(13) Each of the agreements identified on Schedule 7.1(m) shall have been terminated and the parties to the agreements identified on such Schedule 7.1(m) shall have waived all of their respective rights thereunder, in each case effective prior to or as of the Effective Time, and the Company shall have delivered evidence of such termination and waiver in form and substance reasonably acceptable to Parent;

(14) The Company shall have delivered reasonable evidence that cash and cash equivalents of the Company, determined in accordance with GAAP, plus Closing A/R and Cash shall equal at least $500,000.

ii.Conditions to the Company's Obligation to Effect the Merger

. The obligation of the Company to consummate the Merger shall be further subject to the fulfillment at or prior to the Effective Time of each of the following additional conditions:

(1) Parent shall have made the payments and issued and deposited the Parent Consideration Shares as contemplated by Section 3.5, the Estimated Closing Statement and the Closing Payment Schedule;

(2) Parent shall have delivered the Escrow Agreement to the Representative, duly executed by Parent and the Escrow Agent; and

(3) Parent shall have delivered the Subscription Agreements to the Representative, duly executed by Parent.

Article VIII.

INDEMNIFICATION

i.Indemnity Obligations of Escrow Beneficiaries

. Subject to the limitations set forth in this Article VIII, each Escrow Beneficiary, severally and not jointly in proportion to the portion of the Purchase Price received by such Escrow Beneficiary (the "Pro Rata Portion"), shall defend, indemnify and hold harmless Parent, Purchaser and their respective Affiliates (including, after the Closing, the Surviving Corporation and its Subsidiaries), officers, directors, employees, successors and assigns (the "Parent Indemnitees"), from and against, and pay or reimburse Parent Indemnitees for, any and all claims, liabilities, penalties, settlement payments, awards, obligations, losses, fines, costs, proceedings, expenses or damages, including all reasonable attorneys' fees, other professionals' and experts' fees, costs of investigation and court or arbitration costs incurred in the

investigation or defense of any of the same or in asserting any of their respective rights hereunder (collectively, "Losses"), based on, resulting from, arising out of or relating to, directly or indirectly:

(1) any breach of any representation or warranty of the Company contained in this Agreement;

(2) any Pre-Closing Taxes;

(3) any failure of the Company (prior to the Closing) or the Representative to perform any covenant or agreement of the Company or the Representative made or contained in this Agreement;

(4) any inaccuracy in the Estimated Closing Statement, in each case to the extent not taken into account in any final adjustment pursuant to Section 3.5;

(5) any inaccuracy in the Closing Payment Schedule;

(6) the exercise by any holder of Dissenting Shares of dissenters' rights under Delaware Law or other applicable Law;

(7) any Fraud; or

(8) any claim asserted by: any current or former securityholder of the Company alleging any ownership of or interest in or right to acquire any shares or other securities of the Company that is not specifically disclosed in the Estimated Closing Statement or Closing Payment Schedule, relating to any actual or alleged breach of fiduciary duties.

ii.Indemnity Obligations of Parent

. From and after the Closing, Parent and the Surviving Corporation, jointly and severally, covenant and agree to defend, indemnify and hold harmless the Escrow Beneficiaries and their respective Affiliates, officers, directors, employees, successors and assigns (the "Creditor Indemnitees") from and against any and all Losses based on, resulting from, arising out of or relating to, directly or indirectly:

(1) any breach of any representation or warranty of Parent or Purchaser contained in this Agreement; or

(2) any failure of Parent or Purchaser to perform any covenant or agreement of such Party made or contained in this Agreement, or fulfill any other obligation in respect thereof.

iii.Procedures.

(1) Third Party Claims. Except with respect to Tax Matters, which shall be governed by Section 6.4(d), in the case of any claim asserted by a third party (a "Third Party Claim") against a party entitled to indemnification under this Agreement (the "Indemnified Party"), notice shall be given by the Indemnified Party to the party required to provide indemnification (which, for purposes of the Creditor Indemnitees, such notice shall be given to the Representative) (the "Indemnifying Party") promptly after such Indemnified Party has knowledge of any claim as to which indemnity may be sought provided that any failure on the part of Indemnified Party to so notify the Indemnifying Party shall not

limit any of the obligations of the Indemnifying Parties under this Article VIII (except to the extent such failure materially prejudices the Indemnifying Parties or materially increases the Losses indemnifiable by the Indemnifying Parties in connection with such Third Party Claim). The Indemnified Party shall have the right in its sole discretion to defend or settle any such Third Party Claim. Representative (if the Indemnified Party is a Parent Indemnitee) and Parent (if the Indemnified Party is a Creditor Indemnitee) shall be entitled, on behalf of the Indemnifying Parties, at their expense, to participate in, but not to determine or conduct, the defense of such Third Party Claim (the party controlling such defense the "Controlling Party" and, the other party the "Non-Controlling Party"). In the event of settlement or other resolution by the Controlling Party of any Third Party Claim, the amount paid in such settlement or resolution (the "Settlement Amount") shall not be determinative and binding upon the Indemnifying Parties as to the amount of Losses recoverable pursuant to this Article VIII with respect thereto unless the Representative (if the Indemnified Party is a Parent Indemnitee) and the Parent (if the Indemnified Party is a Creditor Indemnitee) has consented (or been deemed to have consented) to any such settlement or resolution (in which case the Settlement Amount for such settlement or resolution shall, subject to the limitations set forth in this Article VIII, be Losses for which the affected Indemnified Party are entitled to be indemnified, compensated and reimbursed hereunder), it being understood and agreed that, to the extent the Indemnified Party is entitled to indemnification hereunder for the matters underlying such Third Party Claim, the reasonable attorneys' fees, other professionals' and experts' fees, costs of investigation and court or arbitration costs with respect to such settlement or resolution are Losses recoverable pursuant to this Article VIII regardless of whether the Representative or Parent, as applicable, consents (or is deemed to have consented) to the Settlement Amount. The Representative's (if the Indemnified Party is a Parent Indemnitee) or Parent's (if the Indemnified Party is a Creditor Indemnitee) consent to any such settlement or resolution shall be deemed to have been given unless the Representative (if the Indemnified Party is a Parent Indemnitee) or Parent (if the Indemnified Party is a Creditor Indemnitee) shall have objected in a writing delivered to Parent (if the Indemnified Party is a Parent Indemnitee) or Representative (if the Indemnified Party is a Creditor Indemnitee) within fifteen (15) days after a written request for such consent is delivered. The consent of the Non-Controlling Party shall not be unreasonably, withheld, conditioned or delayed.

(2) Non-Third Party Claims. With respect to any claim for indemnification hereunder which does not involve a Third Party Claim, the Indemnified Party will give the Indemnifying Party written notice of such claim. The Indemnifying Party may acknowledge and agree by notice to the Indemnified Party in writing to satisfy such claim within fifteen (15) days of receipt of notice of such claim from the Indemnified Party. If the Indemnifying Party shall dispute such claim, the Indemnifying Party shall provide written notice of such dispute to the Indemnified Party within such fifteen (15) day period. If after such fifteen (15) day period there remains a dispute as to any claims, the Representative and Parent shall attempt in good faith for thirty (30) days to agree upon the rights of the respective Parties with respect to each of such claims (the "Claims Period"). If the Representative and Parent should so agree, a memorandum setting forth such agreement shall be prepared and signed by Parent and the Representative, which memorandum shall be delivered to the Escrow Agent if recovery is from the Escrowed Shares. If no agreement can be reached after good faith negotiation between the Parties during the Claims Period, either Parent or the Representative may initiate formal legal action with the applicable court in accordance with Section 9.9 to resolve such dispute. The decision of the court as to the validity and amount of any claim for indemnification shall be binding and conclusive upon the Parties to this Agreement, the Parties and the Escrow Agent shall be entitled to act in accordance with such decision.

(3) If the Indemnifying Party shall fail to provide written notice to the Indemnified Party within fifteen (15) days of receipt of notice from the Indemnified Party that the Indemnifying Party

either acknowledges and agrees to pay such claim or disputes such claim, the Indemnifying Party shall be deemed to have acknowledged and agreed to pay such claim in full, subject to the limitations set forth herein, and to have waived any right to dispute such claim.

iv. Expiration of Representations and Warranties

. All representations and warranties contained in this Agreement shall survive the Closing until the date which is one (1) year after the Closing Date (the "General Survival Period"). All of the covenants and agreements and related indemnification obligations contained in this Agreement shall survive the Closing until the first to occur of (i) the expiration by their terms of the obligations of the applicable Party under such covenant or agreement or (ii) such covenant or agreement being fully performed or fulfilled, unless non-compliance with such covenants or agreements is expressly waived in writing by the party entitled to such performance (the "Covenant Survival Period" and, together with the General Survival Period, as applicable, the "Survival Period"). Each Party's indemnification obligations pursuant to this Article VIII shall terminate at the expiration of the applicable Survival Period; provided, however, that the Survival Period shall not affect the Parties' rights and obligations with respect to any claim thereunder (a) if written notice of a breach thereof is made in accordance with this Article VIII on or prior to 11:59 p.m. Pacific Time on the expiration date of the applicable Survival Period and (b) such claim is made in respect of Losses incurred prior to the expiration date of the applicable Survival Period, and any such claim may thereafter be pursued until such claim is resolved in full.

v. Certain Limitations; Calculation of Losses; Mitigation

. The indemnification provided for in Sections 8.1 and 8.2 shall be subject to the following limitations:

(1) Escrow Beneficiaries shall not be liable to Parent Indemnitees for indemnification pursuant to Section 8.1(a) until the aggregate amount of all Losses in respect of indemnification under Section 8.1(a) exceeds $50,000 (the "Basket"), in which event Escrow Beneficiaries shall be required to pay or be liable for all such Losses regardless of the Basket, subject to the other limitations set forth herein. Escrow Beneficiaries shall not be liable to Parent Indemnitees for indemnification pursuant to Section 8.1 after the aggregate amount of all Losses in respect of indemnification under Section 8.1 exceeds the value of the Escrowed Shares held in the Escrow Account (valued at the Parent Trading Price) (the "Cap"); provided that the Basket shall not apply with respect to any Losses arising from, or directly or indirectly related to, breaches of Fundamental Representations or Fraud and the Cap shall not apply with respect to any Losses arising from, or directly or indirectly related to Fraud, but in no event shall any Escrow Beneficiary who has not committed or has no actual knowledge of Fraud be liable to Parent Indemnitees for indemnification in excess of their Pro Rata Portion of the Parent Consideration Shares.

(2) Parent shall not be liable to the Creditor Indemnitees for indemnification pursuant to Section 8.2 until the aggregate amount of all Losses in respect of indemnification under Section 8.2 exceeds the Basket, in which event Parent shall be required to pay or be liable for such Losses solely in excess of the amount of the Basket, subject to the other limitations set forth herein. Parent shall not be liable to Creditor Indemnitees for indemnification pursuant to Section 8.2 after the aggregate amount of all Losses in respect of indemnification under Section 8.2 exceeds the Cap; provided that the Basket and Cap shall not apply with respect to any Losses arising from, or directly or indirectly related to, breaches of Fundamental Representations or Fraud.

(3) For the purposes of calculating Losses to which Parent Indemnitees are entitled under this Article VIII (i) such Losses shall not include any punitive or exemplary damages (except to the extent such damages are awarded to a third party or in the case of Fraud) or repayment and other obligations that arise or are expected to arise, are triggered or become due or payable, in whole or in part, as a direct or indirect result of the consummation (whether alone or in combination with any other event or circumstance) of the Merger or any of the other transactions contemplated hereby and, except in connection with a breach of the representations and warranties in Sections 4.6(b), 4.8(g)(vii), 4.8(k), 4.12 and 4.16(a), any other obligations, liabilities or commitments, in each case, incurred in connection with the PPP Loan; (ii) Parent Indemnitees shall not be entitled to multiple recovery for the same Losses (and, for the avoidance of doubt, shall not be entitled to indemnification pursuant to this Article VIII for Losses to the extent included in Company Transaction Costs, the Closing Assumed Liabilities, or the Closing A/R and Cash in each case as finally determined pursuant to Section 3.5); (iii) such Losses shall be reduced by the amount of any proceeds that any Parent Indemnitee actually receives pursuant to the terms of any insurance policies; provided, however, such Parent Indemnitee shall promptly reimburse the Escrow Beneficiaries for any subsequent recoveries for such sources if previously indemnified hereunder so as to avoid a double recovery; and (iv) such Losses shall be reduced by the amount of any actual prior or subsequent recovery by a Parent Indemnitee from any other source with respect to such Losses; provided, however, such Parent Indemnitee shall promptly reimburse the Escrow Beneficiaries for any subsequent recoveries for such sources if previously indemnified hereunder so as to avoid a double recovery.

vi. Indemnification Payments to Parent Indemnitees

. Except in the event of Fraud, any indemnification to which Parent Indemnitees are entitled under this Article VIII as a consequence of any Losses they may suffer shall be made as a payment to Parent Indemnitees solely from the Escrow Account in accordance with the terms of the Escrow Agreement and, to the extent that the Escrow Account is depleted or otherwise insufficient to satisfy such Losses, the Escrow Beneficiaries shall have no further liability pursuant to this Article VIII. The Parent Consideration Shares shall be valued at the Parent Trading Price for purposes of satisfying the Escrow Beneficiaries' indemnification obligations hereunder.

vii. Treatment of Indemnification Payments

. All distributions or cancellations of the Escrowed Shares made pursuant to this Article VIII shall be treated by the Parties as an adjustment to the Purchase Price to the extent permitted by applicable Law.

viii. Materiality

. Notwithstanding anything herein to the contrary, "material" and "Company Material Adverse Effect" or similar materiality type qualifications contained in the representations and warranties of the Company set forth in this Agreement shall be ignored under this Article VIII for purposes of determining the amount of any Losses (but not whether a breach of any representations and warranty has occurred).

ix. Sole Remedy

. Subject to Section 3.5(b) and the right to seek specific performance or injunctive relief pursuant to Section 9.9 and except for claims under Transaction Documents (other than this Agreement), the indemnification provided for in this Article VIII and Section 3.5 shall be the sole remedy of the Parent Indemnitees for monetary damages with respect to breaches of this Agreement or otherwise arising out of,

or related to, this Agreement and the transactions contemplated hereby, and the Parent Indemnitees hereby waive, and covenant and agree not to bring, any claims for monetary damages in connection therewith other than pursuant to this Article VIII. Except in the case of Fraud (against the Person who committed or who had actual knowledge of the Fraud) and claims under Transaction Documents (other than this Agreement), in no event shall any Escrow Beneficiary have any liability respect to breaches of this Agreement or otherwise arising out of, or related to, this Agreement and the transactions contemplated hereby in excess of the aggregate Parent Consideration Shares (including the Escrowed Shares) actually received by or, in the case of Escrowed Shares, payable to such Escrow Beneficiary. Subject to the right to seek specific performance or injunctive relief pursuant to Section 9.9 and claims under Transaction Documents (other than this Agreement), the indemnification provided for in this Article VIII and Section 3.5 shall be the sole remedy of the Creditor Indemnitees for monetary damages with respect to breaches of this Agreement or otherwise arising out of, or related to, this Agreement and the transactions contemplated hereby, and the Creditor Indemnitees hereby waive, and covenant and agree not to bring, any claims for monetary damages in connection therewith other than pursuant to this Article VIII.

x.Subrogation

. With respect to any indemnification claims against the Escrow Beneficiaries under this Agreement, the Creditor shall not be entitled to exercise, nor shall any Creditors be entitled to subrogate to, any rights and remedies (including rights of indemnity, rights of contribution and other rights of recovery) that Parent, the Surviving Corporation or any Affiliate of Parent or the Surviving Corporation may have against any other Person with respect to any Losses, circumstances or matter to which such indemnification is directly or indirectly related; provided, however, the foregoing shall not limit any right to subrogate to any rights and remedies pursuant to the terms of any insurance policies providing coverage therefor, including the D&O "tail" insurance policy described in Section 7.1(k).

Article IX.

MISCELLANEOUS

i.Notices

. All notices, consents, waivers and deliveries under this Agreement must be in writing and will be deemed to have been duly given when: (i) delivered by hand (against receipt); (ii) when received by the addressee, if sent by a nationally recognized overnight delivery service (receipt requested); (iii) when received by the addressee, if sent by e-mail (against receipt confirmation by the recipient, including a valid read receipt); or (iv) two (2) Business Days after being sent registered or certified mail, return receipt requested, in each case to the appropriate addresses set forth below (or to such other addresses as a Party may hereafter designate by similar notice in accordance with this Section 9.1 to the other Parties); provided that that if a Party refuses to accept delivery, such notice, consent, waiver or other communication shall be deemed to have been given on the date of such refusal of delivery:

(1) If to the Parent or the Purchaser:

Bionano Genomics, Inc.
9540 Towne Centre Drive, Suite 100 San Diego, California 92121 Attention: R. Erik Holmlin, Ph.D.

with a copy, which shall not constitute notice, to:

Cooley LLP
4401 Eastgate Mall
San Diego, California 92121
Attention: Thomas A. Coll and Rama Padmanabhan

(2) If to the Representative:

Michael S. Paul, Ph.D.

with a copy to:

Bass Berry & Sims PLC
150 Third Avenue South, Suite 2800
Nashville, Tennessee 37201
Attention: Ryan D. Thomas and Michael R. Kuffner

ii.Entire Agreement; Amendment

. This Agreement (including the Company Disclosure Schedule and Exhibits hereto and the other Transaction Documents) constitutes the entire agreement among the Parties and supersedes any prior understandings, agreements or representations by or among the Parties, or any of them, written or oral, with respect to the subject matter hereof. This Agreement may not be amended except by a written agreement signed by Parent and the Representative. Any waiver of any of the terms or conditions of this Agreement must be in writing and must be duly executed by or on behalf of the Party to be charged with such waiver. The failure of a Party to exercise any of its rights hereunder or to insist upon strict adherence to any term or condition hereof on any one occasion shall not be construed as a waiver or deprive that Party of the right thereafter to insist upon strict adherence to the terms and conditions of this Agreement at a later date. Further, no waiver of any of the terms and conditions of this Agreement shall be deemed to or shall constitute a waiver of any other term of condition hereof (whether or not similar).

iii.No Third Party Beneficiaries

. This Agreement is not intended, and shall not be deemed, to confer any rights or remedies upon any other person other than the Parties and their respective successors and permitted assigns, to create any agreement of employment with any person or to otherwise create any third-party beneficiary hereto; except that the Creditors and the recipients of Parent Closing Cash Payments are third party beneficiaries of their rights to receive the amounts due under Section 3.5 of this Agreement and Article VIII of this Agreement, the Company Indemnitees are intended third party beneficiaries of their rights under Section 6.5 and Bass Berry & Sims PLC is an intended third party beneficiary of Section 9.12.

iv.Assignment

. Neither this Agreement nor any of the rights, interests or obligations under this Agreement may be assigned or delegated, in whole or in part, by operation of law or otherwise by any of the Parties without the prior written consent of the other Parties, and any such assignment without such prior written consent shall be null and void, except that the Parent and/or the Purchaser may assign this Agreement so long as Parent and/or the Purchaser, as the case may be, shall remain liable for all of its obligations under this Agreement. Subject to the preceding sentence, this Agreement shall be binding upon, inure to the benefit of, and be enforceable by, the Parties and their respective successors and permitted assigns.

v.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 hereof or the validity or enforceability of the offending term or provision in any other situation or in any other jurisdiction. If the final judgment of a court of competent jurisdiction declares that any term or provision hereof is invalid or unenforceable, the Parties agree that the court making such determination shall have the power to limit the term or provision, to delete specific words or phrases, or to replace any invalid or unenforceable 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 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.

vi.Counterparts and Signature

. This Agreement may be executed (including by electronic transmission in .PDF or .TIF format) in two or more counterparts, each of which shall be deemed an original but all of which together shall be considered one and the same agreement and shall become effective when counterparts have been signed by each of the Parties and delivered to the other Parties, it being understood that all Parties need not sign the same counterpart.

vii.Interpretation

. Each of the Parties acknowledges that it has been represented by independent counsel of its choice throughout all negotiations that have preceded the execution of this Agreement and that it has executed the same with consent and upon the advice of said independent counsel. Each Party and its counsel cooperated in the drafting and preparation of this Agreement and the documents referred to herein, and any and all drafts relating thereto shall be deemed the work product of the Parties and may not be construed against any party by reason of its preparation. Accordingly, any rule of Law or any legal decision that would require interpretation of any ambiguities in this Agreement against any party that drafted it is of no application and is hereby expressly waived. When reference is made in this Agreement to an Article or a Section, such reference shall be to an Article or a Section of this Agreement unless otherwise indicated. The table of contents, table of defined terms and headings contained in this Agreement are for convenience of reference only and shall not affect in any way the meaning or interpretation of this Agreement. The language used in this Agreement shall be deemed to be the language chosen by the Parties to express their mutual intent, and no rule of strict construction shall be applied against any party. Whenever the context may require, any pronouns used in this Agreement shall include the corresponding masculine, feminine or neuter forms, and the singular form of nouns and pronouns

shall include the plural, and vice versa. Any reference to any federal, state, local or foreign statute or Law shall be deemed also to refer to all rules and regulations promulgated thereunder, unless the context requires otherwise. Whenever the words “include”, “includes” or “including” are used in this Agreement, they shall be deemed to be followed by the words “without limitation.” The term “Person” means any individual, corporation, partnership, joint venture, association, trust, limited liability company, unincorporated organization or other Entity. The phrase “made available” means made available for review by the Company in the electronic data room hosted by Box set up by the Company in connection with the transactions contemplated by this Agreement at least two (2) Business Days prior to the date hereof. For purposes of this Agreement, references to the Company shall include the Company but the Company shall not be deemed to be an Affiliate or Subsidiary of the Purchaser or the Parent. No summary of this Agreement prepared by any party shall affect the meaning or interpretation of this Agreement.

viii.Governing Law

. This Agreement shall be governed by and construed in accordance with the internal Laws of the State of Delaware without giving effect to any choice or conflict of law provision or rule that would cause the application of the Laws of any other jurisdiction.

ix.Remedies

. 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 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. Accordingly, the Parties shall be entitled to an injunction or injunctions to prevent breaches of this Agreement and to enforce any provision of this Agreement by a decree of specific performance and to temporary, preliminary and permanent injunctive relief to prevent breaches or threatened breaches of any of the provisions of this Agreement, without posting any bond or other undertaking, and this being in addition to any other remedy to which they are entitled at law or in equity.

x.Submission to Jurisdiction

. Each of the Parties: (a) consents to submit itself to the exclusive personal jurisdiction of the Delaware Court of Chancery in any action or proceeding arising out of or relating to this Agreement or any of the transactions contemplated by this Agreement; (b) agrees that all claims in respect of such action or proceeding may be heard and determined in such court; (c) agrees that it will not attempt to deny or defeat such personal jurisdiction by motion or other request for leave from such court, and (d) agrees not to bring any action or proceeding arising out of or relating to this Agreement or any of the transactions contemplated by this Agreement in any other court. Each of the Parties waives any defense or inconvenient forum to the maintenance of any action or proceeding so brought and waives any bond, surety or other security that might be required of any other party with respect thereto. Any Party may make service on another party by sending or delivering a copy of the process to the party to be served at the address and in the manner provided for the giving of notices in Section 9.1. Nothing in this Section 9.10, however, shall affect the right of any party to serve legal process in any other manner permitted by Law.

xi.WAIVER OF JURY TRIAL

. EACH OF THE PARENT, THE PURCHASER AND THE COMPANY HEREBY IRREVOCABLY WAIVES ALL RIGHTS TO TRIAL BY JURY IN ANY ACTION, PROCEEDING OR COUNTERCLAIM (WHETHER BASED ON CONTRACT, TORT OR OTHERWISE) ARISING OUT OF OR RELATING TO THIS AGREEMENT OR THE TRANSACTIONS CONTEMPLATED HEREBY OR THE ACTIONS OF THE PARENT, THE PURCHASER OR THE COMPANY IN THE NEGOTIATION, ADMINISTRATION, PERFORMANCE AND ENFORCEMENT HEREOF.

xii.Attorney-Client Privilege; Continued Representation

. The Parties hereto hereby acknowledge that Bass Berry & Sims PLC has acted as counsel to the Company and certain Company Equityholders from time to time prior to the Merger as well as with respect to the Merger. The following provisions apply to the attorney-client relationship between (a) the Company and Bass Berry & Sims PLC prior to the Closing and (b) such Company Equityholders (and any subset of them) and Bass Berry & Sims PLC following Closing. Each of the Parties hereto agrees that (i) it will not seek to disqualify Bass Berry & Sims PLC from acting and continuing to act as counsel to any of the Company Equityholders on the grounds of a conflict of interest arising from Bass Berry & Sims PLC's prior representation of the Company or the Company Equityholders either in the event of a dispute hereunder or in the course of the defense or prosecution of any claim relating to the Merger; (ii) the Company Equityholders have a reasonable expectation of privacy with respect to their communications (including any e-mail communications using the Company's e-mail system) with Bass Berry & Sims PLC prior to Closing to the extent that such communications concern the negotiation, documentation and consummation of the Merger and the transactions contemplated hereby and (iii) the Company Equityholders (and not the Parent) shall have access to all such communications. Furthermore, Purchaser and its Affiliates (including the Surviving Corporation after the Closing) shall have no right to intentionally or knowingly access any attorney work product, or attorney-client privileged material of, Bass, Berry & Sims PLC, including any communications to or by Bass, Berry & Sims PLC made in connection with the negotiation, preparation, execution, delivery and Closing under, or any dispute or proceeding arising under or in connection with, this Agreement or any of the transactions contemplated hereby, which attorney work product and privileged materials shall be retained solely by the Company Equityholders after the Closing. The Parties hereto expressly acknowledge and agree that all rights to such attorney-client privilege and to control such attorney-client privilege shall be retained by the Company Equityholders and shall not pass to or be claimed by Parent, the Surviving Corporation or any of their respective Affiliates. In the event that a dispute or investigation or audit arises after the Closing between Purchaser or the Surviving Corporation (or any of their respective Affiliates), on the one hand, and a third party, on the other hand, Purchaser or the Surviving Corporation, as applicable, shall notify the Representative if such third party seeks disclosure of confidential communications by Bass, Berry & Sims PLC that fall (or would be deemed to fall) within the privilege that the Company Equityholders have retained as described in this Section 9.12 in order to allow the Company Equityholders to timely intervene and assert privilege. Notwithstanding anything to the contrary in this Agreement, in the event that a dispute arises between the Parent, the Surviving Corporation or any of their respective Subsidiaries and a third party after the Closing, the Parent, the Surviving Corporation or any of their respective Subsidiaries may assert the attorney-client privilege to prevent disclosure of any privileged communications by Bass Berry & Sims PLC to such third party.

xiii.Disclosure Schedule

. The Company Disclosure Schedule shall be arranged in paragraphs corresponding to the numbered and lettered paragraphs contained in Article IV and the disclosure in any paragraph shall qualify (a) the corresponding paragraphs in Article IV and (b) the other paragraphs in Article IV only to the extent that it is readily apparent from a reading of such disclosure that it also qualifies or applies to such other paragraphs in Article IV without any further investigation by the Parent. No reference to or disclosure of any item or other matter in the Company Disclosure Schedule shall be construed as an admission or indication that such item or other matter is material. No disclosure in the Company Disclosure Schedule relating to any possible breach or violation of any agreement or Law shall be construed as an admission or indication that any such breach or violation exists or has actually occurred. The headings contained in the Company Disclosure Schedule are included for convenience only and are not intended to limit the effect of the disclosures contained in the Company Disclosure Schedule or to expand the scope of the information required to be disclosed in the Company Disclosure Schedule.

xiv.Representative.

(1) The Creditors, including the Escrow Beneficiaries, hereby acknowledge and agree that Michael S. Paul, Ph.D. shall be constituted and appointed as exclusive agent and attorney-in-fact (the foregoing and any other party duly acting in such capacity as authorized hereunder from time to time, the "Representative") for and on behalf of each Creditor to give and receive notices and communications, to agree to, negotiate and enter into, on behalf of the Creditors, amendments, settlements, consents and waivers under this Agreement and the Escrow Agreement, to take all actions necessary to handle and resolve claims by or against Parent for indemnification by Escrow Beneficiaries under this Agreement, to take such other actions as authorized by this Agreement or the Escrow Agreement, and to take all actions necessary or appropriate in the judgment of the Representative for the accomplishment of the foregoing. Such agency may be changed by a vote or written consent of the Escrow Beneficiaries representing a majority-in-interest of the outstanding principal amount of all Indebtedness held by the Escrow Beneficiaries as of immediately prior to the Effective Time (the "Majority Creditors"), from time to time upon not less than ten (10) days' prior written notice to Parent. If at any time the Representative resigns, dies or becomes incapable of acting, the Majority Creditors shall immediately choose another person to act as the Representative under this Agreement. All acts and decisions of the Representative in connection with the settlement of any indemnification related claim shall be binding on all the Creditors. Notices or communications to or from the Representative shall constitute notice to or from each of the Creditors.

(2) This appointment and power of attorney shall be deemed as coupled with an interest and all authority conferred hereby shall be irrevocable and shall not be subject to termination by operation of law, whether by the death, incapacity, liquidation or dissolution of any of the Creditors or the occurrence of any other event or events, and the Representative may not terminate this power of attorney with respect to any Creditor or any Creditor's successors or assigns without the consent of Parent. A decision, act, consent or instruction of the Representative in respect of any action under this Agreement or the Escrow Agreement shall constitute a decision of all of the Creditors, whether or not there was any prior consultation with or contrary instructions from any Creditor, and shall be final, binding and conclusive upon each such Creditor, and Parent may conclusively rely upon any decision, act, consent or instruction of the Representative hereunder or under the Escrow Agreement as being the decision, act, consent or instruction of each and every such Creditor. Parent is hereby irrevocably relieved from any liability to any person (including any Creditor) for any acts done by them in accordance with such decision, act, consent or instruction of the Representative.

(3) The Representative will incur no liability of any kind with respect to any action or omission in connection with the Representative's services pursuant to this Agreement and the Escrow Agreement, except in the event of liability directly resulting from the Representative's gross negligence, bad faith or willful misconduct. Each Creditor acknowledges that the Representative will be an employee of Parent following Closing. Notwithstanding any such affiliation, each Creditor hereby waives and agrees to not assert any claims related to any actual or potential conflict of interest or breach of fiduciary duty arising out of or relating to Representative's representation, after the Closing Date, of the Creditors. The Creditors shall, severally and not jointly in proportion to the portion of the Purchase Price received by such Creditor, indemnify, defend and hold harmless the Representative and its successors and assigns from and against any and all claims, demands, suits, actions, causes of action, losses, damages, obligations, liabilities, costs and expenses (including attorneys' fees and court costs) (collectively, "Representative Losses") arising as a result of or incurred in connection with any actions taken or omitted to be taken by the Representative pursuant to the terms of this Agreement, in each case as such Representative Loss is incurred; provided, however, that no Creditor shall be liable to the Representative for any amount in excess of the amount of proceeds actually received pursuant to the Agreement; provided that in the event it is finally adjudicated that a Representative Loss or any portion thereof was primarily caused by the gross negligence or willful misconduct of the Representative, the Representative will reimburse the Creditors the amount of such indemnified Representative Loss attributable to such gross negligence or willful misconduct. If not paid directly to the Representative by the Creditors, such losses, liabilities and expenses may be recovered by the Representative, from the Escrow Account otherwise distributable (when distributable) to the Escrow Beneficiaries (and not distributed or distributable to Parent) without the requirement of any consent or approval of Parent, the Surviving Corporation or any other party (and the Representative may provide for such payment in any instruction delivered to the Escrow Agent (in the case of an amount from the Escrow Account) or by written instruction to Parent).

(4) In consideration for the services to be provided as the Representative, Representative shall be entitled to the following compensation: (i) at Closing, Representative shall be issued Parent Consideration Shares in an amount equal to $25,000, valued at the Parent Trading Price, as reflected on the Closing Payment Schedule, and (ii) after Closing until the release of all Escrowed Shares retained under the Escrow Agreement, three and thirty-three hundredths of a percent (3.33%) of all Escrowed Shares disbursed to, or for the benefit of the Escrow Beneficiaries, in accordance with the terms of the Escrow Agreement.

(5) Each of Parent, the Company and the Surviving Corporation shall be entitled to deduct and withhold, or cause to be deducted and withheld, from the payment payable pursuant to Section 9.14, the amounts required to be deducted and withheld under the Code, or any provision of state, local or foreign Law, with respect to the making of such payment and, to the extent that amounts are so deducted and withheld and paid over to the applicable Governmental Entity, such amounts shall be treated for all purposes of the this Agreement as having been paid to the Representative in respect of whom such deduction and withholding was made. To the extent that such amounts are not so deducted and withheld, Representative shall indemnify Parent for any Losses attributable to amounts imposed by a Governmental Entity in respect of such failure to deduct and withhold.

[Remainder of page intentionally left blank.]

IN WITNESS WHEREOF, the Parent, the Purchaser and the Company have caused this Agreement to be executed as of the date first written above by their respective officers thereunto duly authorized.

BIONANO GENOMICS, INC.

By: */s/ Erik Holmlin*
Name: R. Erik Holmlin, Ph.D.
Title: President and Chief Executive Officer

ALTA MERGER SUB, INC.

By: */s/ Mark Oldakowski*
Name: Mark Oldakowski
Title: Director and Secretary

LINEAGEN, INC.

By:
Name: Michael S. Paul, Ph.D.
Title: President and Chief Executive Officer

MICHAEL S. PAUL, PH.D., solely in his capacity as the Representative

IN WITNESS WHEREOF, the Parent, the Purchaser and the Company have caused this Agreement to be executed as of the date first written above by their respective officers thereunto duly authorized.

BIONANO GENOMICS, INC.

By: __
Name: R. Erik Holmlin, Ph.D.
Title: President and Chief Executive Officer

ALTA MERGER SUB, INC.

By: __
Name: __
Title: __

LINEAGEN, INC.

By: */s/ Michael S. Paul* __
Name: Michael S. Paul, Ph.D.
Title: President and Chief Executive Officer

__
MICHAEL S. PAUL, PH.D., solely in his capacity as the Representative

IN WITNESS WHEREOF, the Parent, the Purchaser and the Company have caused this Agreement to be executed as of the date first written above by their respective officers thereunto duly authorized.

BIONANO GENOMICS, INC.

By: __
Name: R. Erik Holmlin, Ph.D.
Title: President and Chief Executive Officer

ALTA MERGER SUB, INC.

By: __
Name: __
Title: __

LINEAGEN, INC.

By: __
Name: Michael S. Paul, Ph.D.
Title: President and Chief Executive Officer

/s/ Michael S. Paul
MICHAEL S. PAUL, PH.D., solely in his capacity as the Representative

Exhibit A

Executed Written Consent

[*See Attached*]

EMPLOYMENT AGREEMENT

This **EMPLOYMENT AGREEMENT** (the ***"Agreement"***) is made and entered into effective as of **September 1, 2020** (the ***"Effective Date"***), by and between **BIONANO GENOMICS, INC**. (the ***"Company"***) and **Christopher Stewart** (***"Executive"***). The Company and Executive are hereinafter collectively referred to as the ***"Parties"***, and individually referred to as a ***"Party"***.

RECITALS

The Company desires assurance of the association and services of Executive in order to retain Executive's experience, skills, abilities, background and knowledge, and is willing to continue to the engagement of Executive's services on the terms and conditions set forth in this Agreement.

Executive desires to be in the employ of the Company, and is willing to accept employment on the terms and conditions set forth in this Agreement.

AGREEMENT

In consideration of the foregoing Recitals and mutual promises and covenants contained herein, and for other good and valuable consideration, the Parties, intending to be legally bound, agree as follows:

1. EMPLOYMENT.

a. **Title**. Executive's position shall be Chief Financial Officer of the Company, subject to the terms and conditions set forth in this Agreement.

b. **Term.** The term of this Agreement shall begin on the Effective Date, and shall continue until terminated in accordance with Section 4 herein (the ***"Term"***).

c. **Duties**. Executive shall do and perform all services, acts or things necessary or advisable to manage and conduct the business of the Company and that are normally associated with the position of Chief Financial Officer, and such other duties as may from time to time be assigned to Executive. Executive shall report to the Chief Executive Officer of the Company.

d. **Policies and Procedures**. The employment relationship between the Parties shall be governed by this Agreement and by the policies and practices established by the Company and/or the Company's Board of Directors (the ***"Board"***), or any designated committee thereof. In the event the terms of this Agreement differ from or are in conflict with the Company's policies and practices or the Company's Employee Handbook, this Agreement shall control.

e. **Location**. Unless the Parties otherwise agree in writing, during the Term Executive shall perform the services Executive is required to perform pursuant to this Agreement at the Company's offices in San Diego, California *provided, however*, that the Company may from time to time require Executive to travel temporarily to other locations in connection with the Company's business.

2. LOYAL; NON-COMPETITION; NON-SOLICITATION.

a. **Loyalty**. Except as expressly provided herein, during Executive's employment by the Company, Executive shall devote Executive's full business energies, interest, abilities and productive time to the proper and efficient performance of Executive's duties under this Agreement.

b. **Agreement not to participate in Company's Competitors.** During Executive's employment with the Company, Executive agrees not to acquire, assume or participate in, directly or indirectly, any position, investment or interest known by Executive to be adverse or antagonistic to the Company, its business, or prospects, financial or otherwise, or in any company, person or entity that is, directly or indirectly, in competition with the business of the Company or any of its Affiliates (as defined below). Ownership by Executive, in professionally managed funds over which the Executive does not have control or discretion in investment decisions, or as a passive investment, of less than two percent (2%) of the outstanding shares of capital stock of any corporation with one or more classes of its capital stock listed on a national securities exchange or publicly traded on a national securities exchange or in the over-the-counter market shall not constitute a breach of this Section. For purposes of this Agreement, "***Affiliate***" means, with respect to any specific entity, any other entity that, directly or indirectly, through one or more intermediaries, controls is controlled by or is under common control with such specified entity.

c. **Covenant not to Compete**. During Executive's employment with the Company, the Executive shall not engage in competition with the Company and/or any of its Affiliates, either directly or indirectly, in any manner or capacity, as adviser, principal, agent, affiliate, promoter, partner, officer, director, employee, stockholder, owner, co-owner, consultant, or member of any association or otherwise, in any phase of the business of developing, manufacturing and marketing of products or services that are in the same field of use or which otherwise compete with the products or services of the Company except with the prior written consent of the Company.

3. COMPENSATION OF EXECUTIVE.

a. **Base Salary**. During calendar year 2020, the Company shall pay Executive a base salary at the annualized rate of $54,080 per year (the "***Initial Base Salary***"). Commencing on January 1, 2021, the Company shall pay Executive a base salary at the annualized rate of $305,000 per year (the ***"Base Salary"***). The Initial Base Salary and Base Salary shall be paid, less payroll deductions and all required withholdings, in regular bi-weekly payments or otherwise in accordance with Company policy. Such Initial Base Salary and Base Salary shall be prorated for any partial year of employment on the basis of a 365-

day fiscal year.

b. **Discretionary Bonus**. At the sole discretion of the Company, following each calendar year of employment, Executive shall be eligible to receive a discretionary cash bonus (the ***"Bonus"***) with target amounts as follows: (i) up to $30,500 for calendar year 2020; and up to thirty percent (30%) of Executive's Base Salary for calendar year 2021 and thereafter. The actual Bonus amount shall be determined based on Executive's achievement relative to certain performance goals (***"Performance Goals"***) to be established by the Company. The determination of whether Executive has met the Performance Goals for any given year, and if so, the amount of any Bonus that will be paid for such year (if any), shall be determined by the Company in its sole and absolute discretion. In order to be eligible to earn or receive any Bonus, Executive must remain employed by the Company through and including the end of the year with respect to which such Bonus is earned.

c. **Expense Reimbursement**. The Company will reimburse Executive for all reasonable business expenses Executive incurs in conducting Executive's duties hereunder, pursuant to the Company's usual expense reimbursement policies; provided that Executive supplies the appropriate substantiation for such expenses no later than the end of the calendar month following the month in which such expenses were incurred by Executive. For the avoidance of doubt, to the extent that any expense reimbursements payable to Executive under this Agreement are taxable income and subject to the

provisions of 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"***): (i) to be eligible to obtain reimbursement for such expenses Executive must supply the appropriate documentation substantiating such expenses no later than the end of the calendar month following the month in which such expenses were incurred by Executive, (ii) any such reimbursements will be paid by the Company as soon as administratively practicable after submission of such documentation, but in no event later than December 31 of the year following the year in which the expense was incurred, (iii) the amount of expenses reimbursed in one year will not affect the amount eligible for reimbursement in any subsequent year, and (iv) the right to expense reimbursement under this Agreement will not be subject to liquidation or exchange for another benefit.

d. Changes to Compensation. Executive's compensation will be reviewed annually and may be increased from time to time in the Company's sole discretion.

e. Employment Taxes. All of Executive's compensation and payments under this Agreement shall be subject to customary withholding taxes and any other employment taxes as are commonly required to be collected or withheld by the Company.

f.Benefits. Executive shall, in accordance with Company policy and the terms of the applicable plan documents, be eligible to participate in benefits under any benefit plan or arrangement which may be in effect from time to time and made available to the Company's executive or key management employees.

g. Holidays and Vacation. Executive shall be eligible for paid holiday and vacation time in accordance with Company policy as in effect from time to time and made available to Company's senior management employees.

h. Equity. Subject to approval by the Board (or a committee thereof), and as an inducement material to Executive's entering into employment with the Company, Executive shall be granted an option to purchase 350,000 shares of common stock in the Company at the fair market value on the date of grant (the "***Initial Option***"). The shares subject to the Initial Option will vest over four years of continuous service to the Company, with twenty-five percent (25%) of the shares subject to the Initial Option vesting on the first year anniversary of the Effective Date, and the remaining shares vesting in equal monthly installments over the subsequent thirty-six (36) months of continuous service thereafter. In addition, subject to approval by the Board (or a committee thereof), and also as an inducement material to Executive's entering into employment with the Company, Executive shall be granted an option to purchase an additional 225,000 shares of common stock in the Company at the fair market value on the date of grant (the "***Additional Option***"). The shares subject to the Additional Option will fully vest on December 31, 2020. The Initial Option and Additional Option shall be governed in all respects by the terms of the Company's 2020 Inducement Plan (the "***Plan***") and option agreement between Executive and the Company. Executive shall be entitled to be considered for additional stock option grants under the Plan or the Company's 2018 Equity Incentive Plan, as amended, as approved by the Board (or a committee thereof) in its sole discretion. In addition, (i) with respect to the Initial Option only, in the event of a Transaction (as defined in the Plan) at a time when Executive's Continuous Service (as defined in the Plan) has not terminated prior to such Transaction, if the surviving corporation or acquiring corporation (or the surviving or acquiring corporation's parent company) does not assume or continue the Initial Option or substitute a similar stock award for the Initial Option (including, but not limited to, an award to acquire the same consideration paid to the stockholders of the Company pursuant to the Transaction), then the vesting of the Initial Option shall immediately accelerate in full, and (ii) with

respect to the Additional Option only, notwithstanding any provision in the Plan or form of Additional Option agreement to the contrary, in the event of the termination of Executive's Continuous Service (other than for Cause), the Executive may exercise his Additional Option (if vested) within the period of time ending on the earlier of (a) the date that is eighteen (18) months following the termination of the Executive's Continuous Service, (b) the date of a Transaction, or (c) the tenth (10^{th}) anniversary of the grant date of the Additional Option.

4. TERMINATION.

a. Termination by the Company. Executive's employment with the Company is at will and may be terminated by the Company at any time and for any reason, or for no reason, including, but not limited to, under the following conditions:

i.. Termination by the Company for Cause. The Company may terminate Executive's employment under this Agreement for Cause by delivery of written notice to Executive. Any notice of termination given pursuant to this Section shall effect termination as of the date of the notice, or as of such other date specified in the notice.

ii.. Termination by the Company without Cause. The Company may terminate Executive's employment under this Agreement without Cause at any time and for any reason, or for no reason. Such termination shall be effective on the date Executive is so informed by the Company.

b. Termination by Executive. Executive may terminate Executive's employment with the Company at any time and for any reason, or for no reason, upon 30 days' written notice to the Company.

c. Termination for Death or Complete Disability. Executive's employment with the Company shall automatically terminate effective upon the date of Executive's death or Complete Disability (as defined below).

d. Termination by Mutual Agreement of the Parties. Executive's employment with the Company may be terminated at any time upon a mutual agreement in writing of the Parties. Any such termination of employment shall have the consequences specified in such agreement.

e. Compensation upon Termination.

i.. Death or Complete Disability. If Executive's employment with the Company is terminated as a result of Executive's death or Complete Disability, the Company shall pay to Executive, or to Executive's heirs, Executive's base salary and accrued and unused vacation benefits earned through the date of termination at the rate in effect at the time of termination, less standard deductions and withholdings. The Company shall thereafter have no further obligations to Executive and/or Executive's heirs under this Agreement, except as otherwise provided by law (and except as provided otherwise in Executive's stock option agreements with the Company).

ii.. With Cause or Without Good Reason. If Executive's employment with the Company is terminated at any time either by the Company for Cause or by Executive without Good Reason, the Company shall pay the Accrued Obligations, and the Company shall thereafter have no further obligations to Executive under this Agreement, except as otherwise provided by law (and except as provided otherwise in Executive's stock option agreements with the Company).

iii.. **Without Cause or for Good Reason**. If Executive's employment with the Company is terminated by the Company without Cause or by Executive for Good Reason, and in either case Executive signs a separation agreement including a comprehensive waiver and release of claims in such form as the Company may require (the ***"Release"***) on or within the time period set forth therein, but in no event later than 45 days after Executive's termination date, and allows such Release to become effective in accordance with its terms (such latest permitted date on which the Release could become effective, the (***"Release Deadline"***), then Executive will receive the following benefits:

1... **Severance Payment**. Cash payments in the form of continuation of Executive's Base Salary at the rate in effect at the time of termination (or, if the termination occurs prior to January 1, 2021, then at the rate that would be in effect as of January 1, 2021) for a period of **six months** following the termination date (***"Severance Payment"***),

2... **Benefits.** Provided that Executive is eligible for and timely elects continued group health coverage under the Consolidated Omnibus Budget Reconciliation Act of 1985 (***"COBRA"***) following Executive's termination date, the Company shall pay directly to the insurance provider the premium for COBRA continuation coverage for the Executive and Executive's family for a period that will expire upon the earliest of (i) **six months** following the termination date (the ***"COBRA Payment Period"***), (ii) the effective date that Executive becomes eligible for new healthcare coverage eligibility available through new employment, or (iii) the date Executive is no longer eligible for COBRA coverage, whichever comes first, and

3... **Equity Acceleration**. Any unvested portion of the Additional Option shall vest immediately in full, solely to the extent that the termination occurs on or before December 31, 2020; and if the Executive's employment with the Company is terminated by the Company without Cause or by Executive for Good Reason during the period beginning thirty (30) days before, and ending twenty-four (24) months following, a Change in Control (as defined in the Plan), then any unvested portion of the Initial Option shall vest immediately in full.

iv.. **General Severance Benefit Terms.**

1... The provisions in this Section shall control and supersede anything to the contrary set forth in this Agreement. For all purposes of this Agreement, references to COBRA premiums shall not include any amounts payable by Executive under a Section 125 health care reimbursement plan under the Code. If at any time the Company determines, in its sole discretion, that it cannot pay the COBRA premiums without potentially incurring financial costs or penalties under applicable law (including, without limitation, Section 2716 of the Public Health Service Act), then regardless of whether Executive elects continued health coverage under COBRA, and in lieu of providing COBRA premiums, the Company will instead pay Executive on the last day of each remaining month of the COBRA Payment Period a fully taxable cash payment equal to the COBRA premiums for that month, subject to applicable tax withholdings, which payments shall continue until the earlier of expiration of the COBRA Payment Period of the date when Executive becomes eligible for health insurance coverage in connection with new employment. If Executive becomes eligible for coverage under another employer's group health plan, Executive must immediately notify the Company of such event, and all COBRA severance benefit payments and obligations under this Agreement shall cease effective as of such date of Executive's eligibility.

2... If all severance payments made under this Agreement will be subject to standard payroll deductions and withholdings and will be made on the Company's regular

payroll cycle, provided, however, that any severance payments otherwise scheduled to be made prior to the effective date of the Release shall instead accrue and be paid in the first payroll period that follows such effective date. Following provisions of any severance benefits to which the Executive may be entitled under Section 4.5.3, the Company shall thereafter have no further obligations to Executive under this Agreement, except as otherwise provided by law (and except as provided otherwise in Executive's stock option agreements with the Company).

f.Additional Definitions. For the purposes of this Agreement, the following terms shall have the following meanings:

i.. ***"Complete Disability"*** shall mean the inability of executive to perform Executive's duties under this Agreement, whether with or without reasonable accommodation, because Executive has become permanently disabled within the meaning of any policy of disability income insurance covering employees of the Company then in force. In the event the Company has no policy of disability income insurance covering employees of the Company in force when Executive becomes disabled, the term ***"Complete Disability"*** shall mean the inability of Executive to perform Executive's duties under this Agreement, whether with or without reasonable accommodation, by reason of any incapacity, physical or mental, which the Company, based upon medical advice or an opinion provided by a licensed physician acceptable to the Company, determines to have incapacitated Executive from satisfactorily performing all of Executive's usual services for the Company, with or without reasonable accommodation, for a period of at least on hundred 120 days during any 12-month period (whether or not consecutive). Based upon such medical advice or opinion, the determination of the Company shall be final and binding and the date such determination is made shall be the date of such Complete Disability for purposes of this Agreement.

ii.. ***"Cause"*** shall mean the occurrence of any of the following: (i) Executive's conviction of any felony or any crime involving fraud or dishonesty that has a material adverse effect on the Company; (ii) Executive's active participation (whether by affirmative act or material omission) in a fraud, act of dishonesty or other act of misconduct against the Company and/or its affiliates; (iii) conduct by Executive which, based upon a good faith and reasonable factual investigation by the Company, demonstrates Executive's gross unfitness to serve; (iv) Executive's material violation of any statutory or fiduciary duty, or duty of loyalty, owed to the Company; (v) Executive's breach of any material term of any material contract between such Executive and the Company and the failure to cure such breach within 30 days of written notice; and (vi) Executive's repeated violation of any material Company policy. Executive's Complete Disability shall not constitute Cause as set forth herein. The determination that a termination is for Cause shall be by the Company in its sole and exclusive judgement and discretion.

iii.. **Good Reason**. ***"Good Reason"*** for Executive to terminate Executive's employment hereunder shall mean the occurrence of any of the following events without Executive's consent; provided however, that any resignation by Executive due to any of the following conditions shall only be deemed for Good Reason if: (i) Executive gives the Company written notice of the intent to terminate for Good Reason within 90 days following the first occurrence of the condition(s) that Executive believes constitutes Good Reason, which notice shall describe such condition(s); (ii) the Company fails to remedy such condition(s) within 30 days following receipt of the written notice (the ***"Cure Period"***) of such condition(s) from Executive; and (iii) Executive actually resigns Executive's employment within the first 15 days after expiration of the Cure Period:

1... a material breach of this Agreement by the Company;

2... a material reduction (which the parties agree is a reduction of at least 10% of Executive's Base Salary) by the Company of Executive's Base Salary as initially set forth herein or as the same may be increased from time to time, unless such reduction is part of a reduction program equally applicable to other executive employees of the Company;

3... a material reduction in Executive's authority, duties or responsibilities, *provided, however,* that a change in job position (including a change in title) shall not be deemed a "material reduction" in and of itself unless Executive's new duties are materially reduced from the prior duties; or

4... the Company relocates the facility that is Executive's principal place of business with the Company to a location that requires an increase in Executive's one-way driving distance by more than 50 miles.

g. Survival of Certain Provisions. Sections 2, 3.3, 3.5, and 4 through 19 of this Agreement shall survive the termination of this Agreement.

h. Reserved.

i. Application of Internal Revenue Code Section 409A.

All benefits under this Agreement are intended to qualify for an exemption from application of Section 409A of the Code and the regulations and other guidance thereunder and any state law of similar effect ("***Section 409A***") or to comply with its requirements to the extent necessary to avoid adverse personal tax consequences under Section 409A, and any ambiguities herein shall be interpreted accordingly.

Notwithstanding anything to the contrary set forth herein, any severance benefits that constitute "deferred compensation" within the meaning of Section 409A shall not commence in connection with Executive's termination of employment unless and until Executive has also incurred a "separation from service" (as such term is defined in 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.

It is intended that each installment of the severance benefit payments provided for in this Agreement is a separate "payment" for purposes of Treasury Regulation Section 1.409A-2(b)(2)(i). For the avoidance of doubt, it is intended that payments of the severance 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). However, if the Company (or, if applicable, the successor entity thereto) determines that the severance benefits constitute "deferred compensation" under Section 409A and Executive is, on the termination of 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 severance benefit payments shall be delayed until the earlier to occur of: (i) the date that is six months and one day after Executive's Separation From Service, or (ii) the date of Executive's death. None of the severance benefits will be paid or otherwise delivered prior to the effective date of the Release. If the severance benefits are not covered by one or more exemptions from the application of Section 409A and the Release could become effective in the calendar year following the calendar year in which Executive's Separation From Service occurs, the Release will not be deemed effective any earlier than the Release Deadline. Except to the minimum extent that payments must be delayed because Executive is a "specified employee" 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.

The severance benefits are intended to qualify for an exemption from application of Section 409A or comply with its requirements to the extent necessary to avoid adverse personal tax consequences under Section 409A, and any ambiguities herein shall be interpreted accordingly.

5. CONFIDENTIAL AND PROPRIETARY INFORMATION; NONSOLICITATION.

a. As a condition of employment, Executive agrees to execute and abide by the Company's Confidential Information and Inventions Assignment Agreement attached hereto as **EXHIBIT A**.

b. While employed by the Company and for one year thereafter, Executive agrees that in order to protect the Company's trade secrets and confidential and proprietary information from unauthorized use, Executive will not, either directly or through others, solicit or attempt to solicit any employee, consultant or independent contractor of the Company to terminate his or her relationship with the Company in order to become an employee, consultant or independent contractor to or for any other person or business entity.

6. ASSIGNMENT AND BINDING EFFECT.

This Agreement shall be binding upon and inure to the benefit of Executive and Executive's heirs, executors, personal representatives, assigns, administrators and legal representatives. Because of the unique and personal nature of Executive's duties under this Agreement, neither this Agreement nor any rights or obligations under this Agreement shall be assignable by Executive. This Agreement shall be binding upon and inure to the benefit of the Company and its successors, assigns and legal representatives.

7. NOTICES.

All notices or demands of any kind required or permitted to be given by the Company or Executive under this Agreement shall be given in writing and shall be personally delivered (and receipted for) or faxed during normal business hours or mailed by certified mail return receipt requested, postage prepaid, address as follows,

If to the Company:	If to Executive:
Attn: Chief Executive Officer Bionano Genomics, Inc. 9540 Towne Centre Drive, Suite 100 San Diego, CA 92121	Christopher Stewart Most recent address on Company's payroll records.

Any such written notice shall be deemed given on the earlier of the date on which such notice is personally delivered or three days after its deposit in the United States mail as specified above. Either Party may change its address for notices by giving notice to the other Party in the manner specified in this Section.

8. CHOICE OF LAW.

This Agreement shall be construed and interpreted in accordance with the internal laws of the State of California without regard to its conflict of laws principles.

9. INTEGRATION.

This Agreement, including **Exhibit A**, contains the complete, final and exclusive agreement of the Parties relating to the terms and conditions of Executive's employment and the termination of Executive's employment, and supersedes all prior and/or contemporaneous oral and written employment agreements or arrangements between the Parties.

10. AMENDMENT.

This Agreement cannot be amended or modified except by a written agreement signed by Executive and the Company.

11. WAIVER.

No term, covenant or condition of this Agreement or any breach thereof shall be deemed waived, except with the written consent of the Party against whom the wavier is claimed, and any waiver or any such term, covenant, condition or breach shall not be deemed to be a waiver of any preceding or succeeding breach of the same or any other term, covenant, condition or breach.

12. SEVERABILITY.

The finding by a court of competent jurisdiction of the unenforceability, invalidity or illegality of any provision of this Agreement shall not render any other provision of this Agreement unenforceable, invalid or illegal. Such court shall have the authority to modify or replace the invalid or unenforceable term or provision with a valid and enforceable term or provision which most accurately represents the Parties' intention with respect to the invalid or unenforceable term or provision.

13. INTERPRETATION; CONSTRUCTION.

The headings set forth in this Agreement are for convenience of reference only and shall not be used in interpreting this Agreement. This Agreement has been drafted by legal counsel representing the Company, but Executive has been encouraged to consult with, and have consulted with, Executive's own independent counsel and tax advisors with respect to the terms of this Agreement. The Parties acknowledge that each Party and its counsel has reviewed and revised, or had an opportunity to review and revise, this Agreement, and any rule of construction to the effect that any ambiguities are to be resolved against the drafting party shall not be employed in the interpretation of this Agreement.

14. REPRESENTATIONS AND WARRANTIES.

Executive represents and warrants that Executive is not restricted or prohibited, contractually or otherwise, from entering into and performing each of the terms and covenants contained in this Agreement, and that Executive's execution and performance of this Agreement will not violate or breach any other agreements between Executive and any other person or entity.

15. COUNTERPARTS; FACSIMILE.

This Agreement may be executed in two counterparts, each of which shall be deemed an original, all of which together shall contribute one and the same instrument. Facsimile signatures shall be treated the same as original signatures.

16. DISPUTE RESOLUTION.

To ensure the timely and economical resolution of disputes that may arise between Executive and the Company, both Executive and the Company mutually agree that pursuant to the Federal Arbitration Act, 9 U.S.C. §1-16, and to the fullest extent permitted by applicable law, Executive and the Company will submit solely to final, binding and confidential arbitration any and all disputes, claims, or causes of action arising from or relating to: **(i)** the negotiation, execution, interpretation, performance, breach or enforcement of this Agreement; or **(ii)** Executive's employment with the Company (including but not limited to all statutory claims); or **(iii)** the termination of Executive's employment with the Company (including but not limited to all statutory claims). **By agreeing to this arbitration procedure, both Executive and the Company waive the right to resolve any such disputes through a trial by jury or judge or through an administrative proceeding.**

Arbitrator Authority. The arbitrator shall have the sole and exclusive authority to determine whether a dispute, claim or cause of action is subject to arbitration under this Section and to determine any procedural questions which grow out of such disputes, claims or causes of action and bear on their final disposition.

Individual Capacity Only. All claims, disputes, or causes of action under this Section, whether by Executive or the Company, must be brought solely in an individual capacity, and shall not be brought as a plaintiff (or claimant) or class member in any purported class or representative proceeding, nor joined or consolidated with the claims of any other person or entity. The arbitrator may not consolidate the claims of more than one person or entity, and may not preside over any form of representative or class proceeding. To the extent that the preceding sentences in this Section are found to violate applicable law or are otherwise found unenforceable, any claim(s) alleged or brought on behalf of a class shall proceed in a court of law rather than by arbitration.

Arbitration Process. Any arbitration proceeding under this Section shall be presided over by a single arbitrator and conducted by Judicial Arbitration and Mediation Services, Inc. ("***JAMS***") in San Diego, California, or as otherwise agreed to by Executive and the Company, under the then applicable JAMS rules for the resolution of employment disputes (available upon request and also currently available at http://www.jamsadr.com/rules-employment-arbitration/). Executive and the Company both have the right to be represented by legal counsel at any arbitration proceeding, at each party's own expense. The arbitrator shall: **(i)** have the authority to compel adequate discovery for the resolution of the dispute; **(ii)** issue a written arbitration decision, to include the arbitrator's essential findings and conclusions and a statement of the award; and **(iii)** be authorized to award any or all remedies that Executive or the Company would be entitled to seek in a court of law. The Company shall pay all JAMS arbitration fees in excess of the amount of court fees that would be required of Executive if the dispute were decided in a court of law.

Excluded Claims. This Section shall not apply to any action or claim that cannot be subject to mandatory arbitration as a matter of law, including, without limitation, claims brought pursuant to the California Private Attorneys General Act of 2004, as amended, the California Fair Employment and Housing Act, as amended, and the California Labor Code, as amended, to the extent such claims are not permitted by applicable law to be submitted to mandatory arbitration and such applicable law is not preempted by the Federal Arbitration Act or otherwise invalid (collectively, the "**Excluded Claims**"). In the event Executive intends to bring multiple claims, including one of the Excluded Claims listed above, the Excluded Claims may be filed with a court, while any other claims will remain subject to mandatory arbitration.

Injunctive Relief and Final Orders. Nothing in this Section is intended to prevent either Executive or the Company from obtaining injunctive relief in court to prevent irreparable harm pending the conclusion of any such arbitration. Any final award in any arbitration proceeding hereunder may be entered as a judgment in the federal and state courts of any competent jurisdiction and enforced accordingly.

17. TRADE SECRETS OF OTHERS.

It is the understanding of both the Company and Executive that Executive shall not divulge to the Company and/or its subsidiaries any confidential information or trade secrets belonging to others, including Executive's former employers, nor shall the Company and/or its Affiliates seek to elicit from Executive any such information. Consistent with the foregoing, Executive shall not provide to the Company and/or its Affiliates, and the Company and/or its Affiliates shall not request, any documents or copies of documents containing such information.

18. ADVERTISING WAIVER.

Executive agrees to permit the Company and/or its affiliates, subsidiaries, or joint ventures currently existing or which shall be established during Executive's employment by the Company (collectively, ***"Affiliates"***), and persons or other organizations authorized by the Company and/or its Affiliates, to use, publish and distribute advertising or sales promotional literature concerning the products and/or services of the Company and/or its Affiliates, or the machinery and equipment used in the provision thereof, in which Executive's name and/or pictures of Executive taken in the course of Executive's provision of services to the Company and/or its Affiliates, appear. Executive hereby waives and releases any claim or right Executive may otherwise have arising out of such use, publication or distribution. The Company agrees that, following termination of Executive's employment, it will not create any new such literature containing Executive's name and/or pictures without Executive's prior written consent.

19. INDEMNIFICATION.

Subject to applicable law, Executive will be provided indemnification to the maximum extent permitted by the Company's Bylaws and Articles of Incorporation, including coverage, if applicable, under any directors and officers insurance policies, with such indemnification determined by the Board or any of its committees in good faith based on principles consistently applied (subject to such limited exceptions as the Board may approve in cases of hardship) and on terms no less favorable than provided to any other Company executive officer or director.

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

BIONANO GENOMICS, INC

By: */s/ R. Erik Holmlin*
R. Erik Holmlin, President and CEO

Date:

EXECUTIVE

/s/ Christopher Stewart
Christopher Stewart

Date: August 23, 2020

EXHIBIT A

CONFIDENTIAL INFORMATION AND INVENTIONS ASSIGNMENT AGREEMENT

[See Attached]

Employment Agreement

This **EMPLOYMENT AGREEMENT** (the "***Agreement***") is made and entered into effective as of August 31, 2020 (the "***Effective Date***"), by and between **BIONANO GENOMICS, INC.**

(the "***Company***") and **ALKA CHAUBEY** ("***Executive***"). The Company and Executive are hereinafter collectively referred to as the "***Parties***", and individually referred to as a "***Party***"

RECITALS

The Company desires assurance of the association and services of Executive in order to retain Executive's experience, skills, abilities, background and knowledge, and is willing to continue to the engagement of Executive's services on the terms and conditions set forth in this Agreement.

Executive desires to be in the employ of the Company, and is willing to accept employment on the terms and conditions set forth in this Agreement.

AGREEMENT

In consideration of the foregoing Recitals and mutual promises and covenants contained herein, and for other good and valuable consideration, the Parties, intending to be legally bound, agree as follows:

1. EMPLOYMENT.

a. Title. Executive's position shall be Chief Medical Officer of the Company, subject to the terms and conditions set forth in this Agreement.

b. Term. The term of this Agreement shall begin on the Effective Date, and shall continue until terminated in accordance with Section 4 herein (the "***Term***").

c. Duties. Executive shall do and perform all services, acts or things necessary or advisable to manage and conduct the business of the Company and that are normally associated with the position of Chief Medical Officer, and such other duties as may from time to time be assigned to Executive. Executive shall report to the Chief Executive Officer of the Company.

d. Policies and Procedures. The employment relationship between the Parties shall be governed by this Agreement and by the policies and practices established by the Company and/or the Company's Board of Directors (the "***Board***"), or any designated committee thereof. In the event the terms of this Agreement differ from or are in conflict with the Company's policies and practices or the Company's Employee Handbook, this Agreement shall control.

e. Location. Unless the Parties otherwise agree in writing, during the Term Executive shall perform the services Executive is required to perform pursuant to this Agreement at the Company's offices in San Diego, California provided, however, that the Company may from time to time require Executive to travel temporarily to other locations in connection with the Company's business.

2. LOYAL; NON-COMPETITION; NON-SOLICITATION.

a. Loyalty. Except as expressly provided herein, during Executive's employment by the Company, Executive shall devote Executive's full business energies, interest, abilities and productive time to the proper and efficient performance of Executive's duties under this Agreement. The Executive shall

continue to provide consultation to the following agreed outside companies on an on-going basis: Greenwood Genetic Center, Perkin Elmer Genomics, Vanadis and Augusta University.

b. Agreement not to participate in Company's Competitors. During Executive's employment with the Company, Executive agrees not to acquire, assume or participate in, directly or indirectly, any position, investment or interest known by Executive to be adverse or antagonistic to the Company, its business, or prospects, financial or otherwise, or in any company, person or entity that is, directly or indirectly, in competition with the business of the Company or any of its Affiliates (as defined below). Ownership by Executive, in professionally managed funds over which the Executive does not have control or discretion in investment decisions, or as a passive investment, of less than two percent (2%) of the outstanding shares of capital stock of any corporation with one or more classes of its capital stock listed on a national securities exchange or publicly traded on a national securities exchange or in the over-the-counter market shall not constitute a breach of this Section. For purposes of this Agreement, "Affiliate" means, with respect to any specific entity, any other entity that, directly or indirectly, through one or more intermediaries, controls is controlled by or is under common control with such specified entity.

c. Covenant not to Compete. During Executive's employment with the Company, the Executive shall not engage in competition with the Company and/or any of its Affiliates, either directly or indirectly, in any manner or capacity, as adviser, principal, agent, affiliate, promoter, partner, officer, director, employee, stockholder, owner, co-owner, consultant, or member of any association or otherwise, in any phase of the business of developing, manufacturing and marketing of products or services that are in the same field of use or which otherwise compete with the products or services of the Company except with the prior written consent of the Company.

3. COMPENSATION OF EXECUTIVE.

a. Base Salary. The Company shall pay Executive a base salary at the annualized rate of $310,000 per year (the "***Base Salary***"), less payroll deductions and all required withholdings, payable in regular bi-weekly payments or otherwise in accordance with Company policy. Such Base Salary shall be prorated for any partial year of employment on the basis of a 365-day fiscal year.

b. Discretionary Bonus. At the sole discretion of the Company, following each calendar year of employment, Executive shall be eligible to receive a discretionary cash bonus with a target amount of up to thirty percent (30%) of Executive's then-current base salary (the "***Bonus***"), based on Executive's achievement relative to certain performance goals ("***Performance Goals***") to be established by the Company. The determination of whether Executive has met the Performance Goals for any given year, and if so, the amount of any Bonus that will be paid for such year (if any), shall be determined by the Company in its sole and absolute discretion. In order to be eligible to earn or receive any Bonus, Executive must remain employed by the Company through and including the end of the year with respect to which such Bonus is earned.

c. Expense Reimbursement. The Company will reimburse Executive for all reasonable business expenses Executive incurs in conducting Executive's duties hereunder, pursuant to the Company's usual expense reimbursement policies; provided that Executive supplies the appropriate substantiation for such expenses no later than the end of the calendar month following the month in which such expenses were incurred by Executive. For the avoidance of doubt, to the extent that any expense reimbursements payable to Executive under this Agreement are taxable income and subject to the provisions of

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***"): (i) to be eligible to obtain reimbursement for such expenses Executive must supply the appropriate documentation substantiating such expenses no later than the end of the calendar month following the month in which such expenses were incurred by Executive, (ii) any such reimbursements will be paid by the Company as soon as administratively practicable after submission of such documentation, but in no event later than

December 31 of the year following the year in which the expense was incurred, (iii) the amount of expenses reimbursed in one year will not affect the amount eligible for reimbursement in any subsequent year, and (iv) the right to expense reimbursement under this Agreement will not be subject to liquidation or exchange for another benefit.

d. Changes to Compensation. Executive's compensation will be reviewed annually and may be increased from time to time in the Company's sole discretion.

e. Employment Taxes. All of Executive's compensation and payments under this Agreement shall be subject to customary withholding taxes and any other employment taxes as are commonly required to be collected or withheld by the Company.

f. Benefits. Executive shall, in accordance with Company policy and the terms of the applicable plan documents, be eligible to participate in benefits under any benefit plan or arrangement which may be in effect from time to time and made available to the Company's executive or key management employees.

g. Holidays and Vacation. Executive shall be eligible for paid holiday and vacation time in accordance with Company policy as in effect from time to time and made available to Company's senior management employees.

h. Relocation Assistance. Subject to Executive's relocation to San Diego, California on or before a date mutually agreed in writing between Executive and the CEO, Executive will be eligible to receive relocation benefits as specified below in this Section (the "***Relocation Assistance***"). Any Relocation Assistance shall be provided subject to the terms of the Company's relocation policies and procedures (the "***Relocation Policy***"). Relocation Assistance benefits are taxable income, subject to withholding, such that Executive's net Relocation Assistance benefit received may be less than Executive's incurred expense. Executive will receive reimbursement of a gross amount of up to $30,000 of relocation expenses that Executive incurs and which are eligible for reimbursement (as specified in the Relocation Policy), which will become payable to Executive subject to the terms and conditions of the Relocation Policy on or within 30 days of the date such relocation is completed, as confirmed in writing between Executive and the Company. If Executive's employment with the Company ends before the first anniversary of the Effective Date for any reason other than due to a termination without Cause by the

Company or a resignation for Good Reason by Executive, Executive shall be required to immediately repay the Company the full gross amount of the Relocation Assistance benefits.

i. Equity. Subject to approval by the Board (or a committee thereof), and as an inducement material to Executive's entering into employment with the Company, Executive shall be granted an option to purchase 300,000 shares of common stock in the Company at the fair market value on the date of grant (the "***Initial Option***"). The shares subject to the Initial Option will vest over four years of continuous service to the Company, with twenty-five percent (25%) of the shares subject to the Initial Option vesting on the first year anniversary of the Effective Date, and the remaining shares vesting in equal monthly installments over the subsequent thirty-six (36) months of continuous service thereafter. The Initial Option shall be governed in all respects by the terms of the Company's 2020 Inducement Plan (the "***Plan***") and option agreement between Executive and the Company. Executive shall be entitled to be considered for additional stock option grants under the Plan or the Company's 2018 Equity Incentive Plan, as amended, as approved by the Board (or a committee thereof) in its sole discretion.

j. Sign-On. Executive will receive a one-time gross signing bonus of $50,000 less standard payroll deductions and all required withholdings, payable with the first full payroll run following the Effective Date. Should the Executive voluntarily terminate employment with the Company within one (1) year of beginning employment with the Company, the Executive agrees to repay the sign-on bonus in full.

4. TERMINATION.

a. Termination by the Company. Executive's employment with the Company is at will and may be terminated by the Company at any time and for any reason, or for no reason, including, but not limited to, under the following conditions:

i.. Termination by the Company for Cause. The Company may terminate Executive's employment under this Agreement for Cause by delivery of written notice to Executive. Any notice of termination given pursuant to this Section shall affect termination as of the date of the notice, or as of such other date specified in the notice.

ii.. Termination by the Company without Cause. The Company may terminate Executive's employment under this Agreement without Cause at any time and for any reason, or for no reason. Such termination shall be effective on the date Executive is so informed by the Company.

b. Termination by Executive. Executive may terminate Executive's employment with the Company at any time and for any reason, or for no reason, upon 30 days' written notice to the Company.

c. Termination for Death or Complete Disability. Executive's employment with the Company shall automatically terminate effective upon the date of Executive's death or Complete Disability (as defined below).

d. Termination by Mutual Agreement of the Parties. Executive's employment with the Company may be terminated at any time upon a mutual agreement in writing of the Parties. Any such termination of employment shall have the consequences specified in such agreement.

e. Compensation upon Termination.

i.. **Death or Complete Disability**. If Executive's employment with the Company is terminated as a result of Executive's death or Complete Disability, the Company shall pay to Executive, or to Executive's heirs, Executive's base salary and accrued and unused vacation benefits earned through the date of termination at the rate in effect at the time of termination, less standard deductions and withholdings. The Company shall thereafter have no further obligations to Executive and/or Executive's heirs under this Agreement, except as otherwise provided by law (and except as provided otherwise in Executive's stock option agreements with the Company).

ii.. **With Cause or Without Good Reason**. If Executive's employment with the Company is terminated at any time either by the Company for Cause or by Executive without Good Reason, the Company shall pay the Accrued Obligations, and the Company shall thereafter have no further obligations to Executive under this Agreement, except as otherwise provided by law (and except as provided otherwise in Executive's stock option agreements with the Company).

iii.. **Without Cause or for Good Reason**. If Executive's employment with the Company is terminated by the Company without Cause or by Executive for Good Reason, and in either case Executive signs a separation agreement including a comprehensive waiver and release of claims in such form as the Company may require (the "***Release***") on or within the time period set forth therein, but in no event later than 45 days after Executive's termination date, and allows such Release to become

effective in accordance with its terms (such latest permitted date on which the Release could become effective, the ("***Release Deadline***"), then Executive will receive the following benefits:

1...Severance Payment. Cash payments in the form of continuation of Executive's Base Salary at the rate in effect at the time of termination for a period of six months following the termination date ("***Severance Payment***"), and

2...Benefits. Provided that Executive is eligible for and timely elects continued group health coverage under the Consolidated Omnibus Budget Reconciliation Act of 1985 ("***COBRA***") following Executive's termination date, the Company shall pay directly to the insurance provider the premium for COBRA continuation coverage for the Executive and Executive's family for a period that will expire upon the earliest of (i) six months following the termination date (the "***COBRA Payment Period***"), (ii) the effective date that Executive becomes eligible for new healthcare coverage eligibility available through new employment, or (iii) the date Executive is no longer eligible for COBRA coverage, whichever comes first.

iv.. **General Severance Benefit Terms**.

1... The provisions in this Section shall control and supersede anything to the contrary set forth in this Agreement. For all purposes of this Agreement, references to COBRA premiums shall not include any amounts payable by Executive under a Section 125 health care reimbursement plan under the Code. If at any time the Company determines, in its sole discretion, that it cannot pay the COBRA premiums without potentially incurring financial costs or penalties under applicable law (including, without limitation, Section 2716 of the Public Health Service Act), then regardless of whether Executive elects continued health coverage under COBRA, and in lieu of providing COBRA premiums, the Company will instead pay Executive on the last day of each remaining month of the COBRA Payment Period a fully taxable cash payment equal to the COBRA premiums for that month, subject to applicable tax withholdings, which payments shall continue until the earlier of expiration of the COBRA Payment Period of the date when Executive becomes eligible for health insurance coverage in connection with new employment. If Executive becomes eligible for coverage under another employer's group health plan, Executive must immediately notify the Company of such event, and all COBRA severance benefit

payments and obligations under this Agreement shall cease effective as of such date of Executive's eligibility.

2... If all severance payments made under this Agreement will be subject to standard payroll deductions and withholdings and will be made on the Company's regular payroll cycle, provided, however, that any severance payments otherwise scheduled to be made prior to the effective date of the Release shall instead accrue and be paid in the first payroll period that follows such effective date. Following provisions of any severance benefits to which the Executive may be entitled under Section 4.5.3, the Company shall thereafter have no further obligations to Executive under this Agreement, except as otherwise provided by law (and except as provided otherwise in Executive's stock option agreements with the Company).

f. Additional Definitions. For the purposes of this Agreement, the following terms shall have the following meanings:

i.. "***Complete Disability***" shall mean the inability of executive to perform

Executive's duties under this Agreement, whether with or without reasonable accommodation, because Executive has become permanently disabled within the meaning of any policy of disability income insurance covering employees of the Company then in force. In the event the Company has no policy of disability income insurance covering employees of the Company in force when Executive becomes disabled, the term "***Complete Disability***" shall mean the inability of Executive to perform Executive's
duties under this Agreement, whether with or without reasonable accommodation, by reason of any incapacity, physical or mental, which the Company, based upon medical advice or an opinion provided by a licensed physician acceptable to the Company, determines to have incapacitated Executive from satisfactorily performing all of Executive's usual services for the Company, with or without reasonable accommodation, for a period of at least on hundred 120 days during any 12-month period (whether or not consecutive). Based upon such medical advice or opinion, the determination of the Company shall be final and binding and the date such determination is made shall be the date of such Complete Disability for purposes of this Agreement.

ii.. "***Cause***" shall mean the occurrence of any of the following: (i) Executive's conviction of any felony or any crime involving fraud or dishonesty that has a material adverse effect on the Company; (ii) Executive's active participation (whether by affirmative act or material omission) in a fraud, act of dishonesty or other act of misconduct against the Company and/or its affiliates; (iii) conduct by Executive which, based upon a good faith and reasonable factual investigation by the Company, demonstrates Executive's gross unfitness to serve; (iv) Executive's material violation of any statutory or fiduciary duty, or duty of loyalty, owed to the Company; (v) Executive's breach of any material term of any material contract between such Executive and the Company and the failure to cure such breach within 30 days of written notice; and (vi) Executive's repeated violation of any material Company policy. Executive's Complete Disability shall not constitute Cause as set forth herein. The determination that a termination is for Cause shall be by the Company in its sole and exclusive judgement and discretion.

iii.. Good Reason. "***Good Reason***" for Executive to terminate Executive's employment hereunder shall mean the occurrence of any of the following events without Executive's consent; provided however, that any resignation by Executive due to any of the following conditions shall only be deemed for Good Reason if: (i) Executive gives the Company written notice of the intent to terminate for Good Reason within 90 days following the first occurrence of the condition(s) that Executive believes constitutes Good Reason, which notice shall describe such condition(s); (ii) the

Company fails to remedy such condition(s) within 30 days following receipt of the written notice (the "***Cure Period***") of

such condition(s) from Executive; and (iii) Executive actually resigns Executive's employment within the first 15 days after expiration of the Cure Period:

1...a material breach of this Agreement by the Company;

2...a material reduction (which the parties agree is a reduction of at least 10% of Executive's Base Salary) by the Company of Executive's Base Salary as initially set forth herein or as the same may be increased from time to time, unless such reduction is part of a reduction program equally applicable to other executive employees of the Company;

3...a material reduction in Executive's authority, duties or responsibilities, provided, however, that a change in job position (including a change in title) shall not be deemed a "material reduction" in and of itself unless Executive's new duties are materially reduced from the prior duties; or

4...the Company relocates the facility that is Executive's principal place of business with the Company to a location that requires an increase in Executive's one-way driving distance by more than 50 miles.

g. Survival of Certain Provisions. Sections 2, 3.3, 3.5, 3.8 and 4 through 19 of this Agreement shall survive the termination of this Agreement.

h. Reserved.

i. Application of Internal Revenue Code Section 409A.

All benefits under this Agreement are intended to qualify for an exemption from application of

Section 409A of the Code and the regulations and other guidance thereunder and any state law of similar effect ("Section 409A") or to comply with its requirements to the extent necessary to avoid adverse personal tax consequences under Section 409A, and any ambiguities herein shall be interpreted accordingly.

Notwithstanding anything to the contrary set forth herein, any severance benefits that constitute "deferred compensation" within the meaning of Section 409A shall not commence in connection with Executive's termination of employment unless and until Executive has also incurred a "separation from service" (as such term is defined in 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.

It is intended that each installment of the severance benefit payments provided for in this Agreement is a separate "payment" for purposes of Treasury Regulation Section 1.409A-2(b)(2)(i). For the avoidance of doubt, it is intended that payments of the severance 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). However, if the Company (or, if applicable, the successor entity thereto) determines that the severance benefits constitute "deferred compensation" under Section 409A and Executive is, on the termination of 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 severance benefit payments shall be delayed until the earlier to occur of: (i) the date that is six months and one day after Executive's Separation From Service, or (ii) the date of Executive's death. None of the severance benefits will be paid or otherwise delivered prior to the effective date of the Release. If the severance benefits are not covered by one or more exemptions from the application of Section 409A and the Release could become effective in the calendar year following the calendar year in which Executive's Separation From Service occurs, the Release will not be deemed effective any earlier than the Release Deadline. Except to the minimum extent that payments must be delayed because Executive is a "specified employee" 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.

The severance benefits are intended to qualify for an exemption from application of Section 409A or

comply with its requirements to the extent necessary to avoid adverse personal tax consequences under Section 409A, and any ambiguities herein shall be interpreted accordingly.

5. CONFIDENTIAL AND PROPRIETARY INFORMATION; NONSOLICITATION.

a. As a condition of employment, Executive agrees to execute and abide by the Company's Confidential Information and Inventions Assignment Agreement attached hereto as **EXHIBIT A**.

b. While employed by the Company and for one year thereafter, Executive agrees that in order to protect the Company's trade secrets and confidential and proprietary information from unauthorized use, Executive will not, either directly or through others, solicit or attempt to solicit any employee, consultant or independent contractor of the Company to terminate his or her relationship with the Company in order to become an employee, consultant or independent contractor to or for any other person or business entity.

6. ASSIGNMENT AND BINDING EFFECT.

This Agreement shall be binding upon and inure to the benefit of Executive and Executive's heirs, executors, personal representatives, assigns, administrators and legal representatives. Because of the unique

and personal nature of Executive's duties under this Agreement, neither this Agreement nor any rights or obligations under this Agreement shall be assignable by Executive. This Agreement shall be binding upon and inure to the benefit of the Company and its successors, assigns and legal representatives.

7. NOTICES.

All notices or demands of any kind required or permitted to be given by the Company or Executive under this Agreement shall be given in writing and shall be personally delivered (and receipted for) or faxed during normal business hours or mailed by certified mail return receipt requested, postage prepaid, address as follows,

If to the Company: If to Executive:
Attn: Chief Executive Officer Alka Chaubey
Bionano Genomics, Inc.
9540 Towne Centre Drive, Suite 100
San Diego, CA 92121

Any such written notice shall be deemed given on the earlier of the date on which such notice is personally delivered or three days after its deposit in the United States mail as specified above. Either Party may change its address for notices by giving notice to the other Party in the manner specified in this Section.

8. CHOICE OF LAW.

This Agreement shall be construed and interpreted in accordance with the internal laws of the State

of California without regard to its conflict of laws principles.

9. INTEGRATION.

This Agreement, including Exhibit A, contains the complete, final and exclusive agreement of the Parties relating to the terms and conditions of Executive's employment and the termination of Executive's employment, and supersedes all prior and/or contemporaneous oral and written employment agreements or arrangements between the Parties.

10. AMENDMENT.

This Agreement cannot be amended or modified except by a written agreement signed by Executive and the Company.

11. WAIVER.

No term, covenant or condition of this Agreement or any breach thereof shall be deemed waived, except with the written consent of the Party against whom the wavier is claimed, and any waiver or any such term, covenant, condition or breach shall not be deemed to be a waiver of any preceding or succeeding breach of the same or any other term, covenant, condition or breach.

12. SEVERABILITY.

The finding by a court of competent jurisdiction of the unenforceability, invalidity or illegality of any provision of this Agreement shall not render any other provision of this Agreement unenforceable, invalid or illegal. Such court shall have the authority to modify or replace the invalid or unenforceable term or provision with a valid and enforceable term or provision which most accurately represents the Parties' intention with respect to the invalid or unenforceable term or provision.

13. INTERPRETATION; CONSTRUCTION.

The headings set forth in this Agreement are for convenience of reference only and shall not be used in interpreting this Agreement. This Agreement has been drafted by legal counsel representing the Company, but Executive has been encouraged to consult with, and have consulted with, Executive's own independent counsel and tax advisors with respect to the terms of this Agreement. The Parties acknowledge that each Party and its counsel has reviewed and revised, or had an opportunity to review and revise, this Agreement, and any rule of construction to the effect that any ambiguities are to be resolved against the drafting party shall not be employed in the interpretation of this Agreement.

14. REPRESENTATIONS AND WARRANTIES.

Executive represents and warrants that Executive is not restricted or prohibited, contractually or otherwise, from entering into and performing each of the terms and covenants contained in this

Agreement, and that Executive's execution and performance of this Agreement will not violate or breach any other agreements between Executive and any other person or entity.

15. COUNTERPARTS; FACSIMILE.

This Agreement may be executed in two counterparts, each of which shall be deemed an original, all of which together shall contribute one and the same instrument. Facsimile signatures shall be treated the same as original signatures.

16. DISPUTE RESOLUTION.

To ensure the timely and economical resolution of disputes that may arise between Executive and the Company, both Executive and the Company mutually agree that pursuant to the Federal Arbitration Act, 9 U.S.C. §1-16, and to the fullest extent permitted by applicable law, Executive and the Company will submit solely to final, binding and confidential arbitration any and all disputes, claims, or causes of action arising from or relating to: (i) the negotiation, execution, interpretation, performance, breach or enforcement of this Agreement; or (ii) Executive's employment with the Company (including but not limited to all statutory claims); or (iii) the termination of Executive's employment with the Company (including but not limited to all statutory claims). **By agreeing to this arbitration procedure, both Executive and the Company waive the right to resolve any such disputes through a trial by jury or judge or through an administrative proceeding.**

Arbitrator Authority. The arbitrator shall have the sole and exclusive authority to determine whether a dispute, claim or cause of action is subject to arbitration under this Section and to determine any procedural questions which grow out of such disputes, claims or causes of action and bear on their final disposition.

Individual Capacity Only. All claims, disputes, or causes of action under this Section, whether by Executive or the Company, must be brought solely in an individual capacity, and shall not be brought as a plaintiff (or claimant) or class member in any purported class or representative proceeding, nor joined or consolidated with the claims of any other person or entity. The arbitrator may not consolidate the claims of more than one person or entity, and may not preside over any form of representative or class

proceeding. To the extent that the preceding sentences in this Section are found to violate applicable law
or are otherwise found unenforceable, any claim(s) alleged or brought on behalf of a class shall proceed in a court of law rather than by arbitration.

Arbitration Process. Any arbitration proceeding under this Section shall be presided over by a single arbitrator and conducted by Judicial Arbitration and Mediation Services, Inc. ("***JAMS***") in San Diego,

California, or as otherwise agreed to by Executive and the Company, under the then applicable JAMS rules for the resolution of employment disputes (available upon request and also currently available

at http://www.jamsadr.com/rules-employment-arbitration/). Executive and the Company both have the right to be represented by legal counsel at any arbitration proceeding, at each party's own expense. The arbitrator shall: **(i)** have the authority to compel adequate discovery for the resolution of the dispute; **(ii)** issue a written arbitration decision, to include the arbitrator's essential findings and conclusions and a statement of the award; and (iii) be authorized to award any or all remedies that Executive or the Company would be entitled to seek in a court of law. The Company shall pay all JAMS arbitration fees in excess of the amount of court fees that would be required of Executive if the dispute were decided in a court of law.

Excluded Claims. This Section shall not apply to any action or claim that cannot be subject to mandatory arbitration as a matter of law, including, without limitation, claims brought pursuant to the California Private Attorneys General Act of 2004, as amended, the California Fair Employment and Housing Act, as amended, and the California Labor Code, as amended, to the extent such claims are not permitted by applicable law to be submitted to mandatory arbitration and such applicable law is not preempted by the Federal Arbitration Act or otherwise invalid (collectively, the "***Excluded Claims***"). In the event Executive intends to bring multiple claims, including one of the Excluded Claims listed above, the Excluded Claims may be filed with a court, while any other claims will remain subject to mandatory arbitration.

Injunctive Relief and Final Orders. Nothing in this Section is intended to prevent either Executive or the Company from obtaining injunctive relief in court to prevent irreparable harm pending the conclusion of any such arbitration. Any final award in any arbitration proceeding hereunder may be entered as a judgment in the federal and state courts of any competent jurisdiction and enforced accordingly.

17. TRADE SECRETS OF OTHERS.

It is the understanding of both the Company and Executive that Executive shall not divulge to the Company and/or its subsidiaries any confidential information or trade secrets belonging to others, including Executive's former employers, nor shall the Company and/or its Affiliates seek to elicit from Executive any such information. Consistent with the foregoing, Executive shall not provide to the Company and/or its Affiliates, and the Company and/or its Affiliates shall not request, any documents or copies of documents containing such information.

18. ADVERTISING WAIVER.

Executive agrees to permit the Company and/or its affiliates, subsidiaries, or joint ventures currently existing or which shall be established during Executive's employment by the Company (collectively, "***Affiliates***"), and persons or other organizations authorized by the Company and/or its Affiliates, to use, publish and distribute advertising or sales promotional literature concerning the products and/or services of the Company and/or its Affiliates, or the machinery and equipment used in the provision thereof, in which Executive's name and/or pictures of Executive taken in the course of Executive's provision of services to the Company and/or its Affiliates, appear. Executive hereby waives and releases any claim or right Executive may otherwise have arising out of such use, publication or distribution. The Company agrees that, following termination of Executive's employment, it will not create any new such literature containing Executive's name and/or pictures without Executive's prior written consent.

19. INDEMNIFICATION.

Subject to applicable law, Executive will be provided indemnification to the maximum extent permitted by the Company's Bylaws and Articles of Incorporation, including coverage, if applicable, under any directors and officers insurance policies, with such indemnification determined by the Board or any of

its committees in good faith based on principles consistently applied (subject to such limited exceptions as the Board may approve in cases of hardship) and on terms no less favorable than provided to any other Company executive officer or director.

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

BIONANO GENOMICS, INC

By: */s/ R. Erik Holmlin*

R. Erik Holmlin, President and CEO
Date:

EXECUTIVE

/s/ Alka Chabey

Alka Chaubey
Date:

EXHIBIT A

CONFIDENTIAL INFORMATION AND INVENTIONS ASSIGNMENT AGREEMENT

Exhibit 31.1

CERTIFICATION

I, R. Erik Holmlin, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Bionano Genomics, Inc., a Delaware corporation (the “registrant”);
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
    (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
    (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
    (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
    (d) Disclosed in this report any change in the registrant’s internal control over financial reporting that occurred during the registrant’s most recent fiscal quarter (the registrant’s fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant’s internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
    (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
    (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Dated: November 12, 2020

/s/ R. Erik Holmlin, Ph.D.

R. Erik Holmlin, Ph.D.
President and Chief Executive Officer
(Principal Executive Officer)

Exhibit 31.2

CERTIFICATION

I, Christopher Stewart, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Bionano Genomics, Inc., a Delaware corporation (the "registrant");
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
    i. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
    ii. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
    iii. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
    iv. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
    i. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
    ii. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Dated: November 12, 2020

/s/ Christopher Stewart

Christopher Stewart

Chief Financial Officer

(Principal Financial and Accounting Officer)

Exhibit 32.1

CERTIFICATION

Pursuant to the requirement set forth in Rule 13a-14(b) of the Securities Exchange Act of 1934, as amended, (the "Exchange Act") and 18 U.S.C. Section 1350 as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, R. Erik Holmlin, Chief Executive Officer of Bionano Genomics, Inc., a Delaware corporation (the "Company") and Christopher Stewart, Chief Financial Officer of the Company, each hereby certifies that, to the best of his knowledge:

1. The Company's Quarterly Report on Form 10-Q for the period ended September 30, 2020, as filed with the Securities and Exchange Commission on the date hereof (the "Periodic Report"), and to which this Certification is attached as Exhibit 32.1, fully complies with the requirements of Section 13(a) or Section 15(d) of the Exchange Act; and

2. The information contained in the Periodic Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: November 12, 2020

/s/ R. Erik Holmlin, Ph.D.
R. Erik Holmlin, Ph.D.
President and Chief Executive Officer
(Principal Executive Officer)

Dated: November 12, 2020

/s/ Christopher Stewart
Christopher Stewart
Chief Financial Officer
(*Principal Financial and Accounting Officer*)

This certification accompanies and is being "furnished" with the Periodic Report, shall not be deemed "filed" by the Company for purposes of Section 18 of the Exchange Act, or otherwise subject to liability under that Section and shall not be deemed to be incorporated by reference into any filing of the Company under the Securities Act of 1933, as amended, or the Exchange Act, whether made before or after the date of the Periodic Report, irrespective of any general incorporation language contained in such filing.