

**UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION**

Washington, D.C. 20549

**FORM 8-K**

**CURRENT REPORT**

**Pursuant to Section 13 or 15(d) of the  
Securities Exchange Act of 1934**

**Date of Report (Date of earliest event reported): March 2, 2020**

**Bionano Genomics, Inc.**

(Exact Name of Registrant as Specified in its Charter)

**Delaware**  
(State or Other Jurisdiction of Incorporation)

**001-38613**  
(Commission File Number)

**26-1756290**  
(IRS Employer Identification No.)

**9540 Towne Centre Drive, Suite 100  
San Diego, California**  
(Address of Principal Executive Offices)

**92121**  
(Zip Code)

Registrant's telephone number, including area code: **(858) 888-7600**

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

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

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

<b>Title of each class</b>	<b>Trading Symbol(s)</b>	<b>Name of each exchange on which registered</b>
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 is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (§230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§240.12b-2 of this chapter).

Emerging growth company

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

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**Item 1.01 Entry into a Material Definitive Agreement.**

As previously reported, Bionano Genomics, Inc. (the “Company”) issued warrants (the “Original Warrants”) to purchase shares of the Company’s Common Stock (“Common Stock”) to certain investors in the Company’s underwritten public offering completed on October 23, 2019. The Original Warrants were immediately exercisable upon issuance at an exercise price per share of \$0.86 and are set to expire on October 23, 2024.

On March 2, 2020, the Company entered into a Warrants Amendment and Agreement (the “Agreement”) with certain holders (“Holders”) of the Original Warrants that are exercisable for an aggregate of up to 3,200,000 shares of Common Stock. The Agreement provides that, commencing immediately following the delivery to the Holders of a prospectus supplement relating to the impact of the Agreement on the Original Warrants and ending at 9:15 a.m. Eastern Time on the business day following the date of such delivery (the “Modified Exercise Price Term”), the exercise price per share for the Original Warrants will be equal to \$0.75 but only with respect to a cash exercise under Section 1(a) of the Original Warrants. In addition, the Company and each Holder agreed that if and only if the Holders exercise for cash all of their Original Warrants as amended pursuant to the Agreement during the Modified Exercise Price Term, the Company will issue to each Holder a new warrant (collectively, the “New Warrants”) to purchase up to the same number of shares of Common Stock issued to such Holder pursuant to the exercise of its Original Warrant during the Modified Exercise Price Term. The New Warrants will be exercisable commencing on the six-month anniversary of the issuance date and will terminate on the date that is five years and six months following the issuance date. The New Warrants will have an exercise price per share of \$1.06.

The Original Warrants and the underlying shares of Common Stock were registered pursuant to the Company’s Registration Statement on Form S-1 (File No. 333-233828), as amended, filed with the Securities and Exchange Commission under the Securities Act of 1933, as amended (“Securities Act”), which became effective on October 21, 2019, and the related prospectus dated October 21, 2019.

The New Warrants and the shares of Common Stock issuable upon exercise of the New Warrants are not being registered under the Securities Act, and are being offered pursuant to the exemption provided in Section 4(a)(2) under the Securities Act.

The foregoing descriptions of the Agreement and the New Warrants do not purport to be complete and are qualified in their entirety by reference to the full text of the forms of the Agreement and the New Warrant, copies of which are attached as Exhibits 4.1 and 4.2, respectively, to this Current Report on Form 8-K and incorporated herein by reference.

**Item 3.02 Unregistered Sale of Equity Securities.**

The information contained in Item 1.01 of this Current Report on Form 8-K is incorporated by reference into this Item 3.02.

**Item 3.03 Material Modification to Rights of Security Holders.**

The information contained in Item 1.01 of this Current Report on Form 8-K is incorporated by reference into this Item 3.03.

**Item 9.01 Financial Statements and Exhibits.**

(d) Exhibits

<b>Exhibit Number</b>	<b>Description</b>
<a href="#">4.1</a>	Form of Warrants Amendment and Agreement
<a href="#">4.2</a>	Form of New Warrant

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## SIGNATURES

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

**Bionano Genomics, Inc.**

Date: March 2, 2020

By: /s/ R. Erik Holmlin, Ph.D.

R. Erik Holmlin, Ph.D.

President and Chief Executive Officer

(Principal Executive and Financial Officer)

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**WARRANTS AMENDMENT AND AGREEMENT**

This Warrants Amendment and Agreement (this “**Agreement**”), dated as of March 2, 2020, is by and between Bionano Genomics, Inc., a Delaware corporation (the “**Company**”), and the undersigned holders (collectively, the “**Holder**”) of warrants to purchase shares of the Company’s common stock, par value \$0.0001 per share (“**Common Stock**”). Capitalized terms used and not otherwise defined herein have the meanings set forth in the Original Warrants (as defined below).

**RECITALS**

**WHEREAS**, the Holder beneficially owns in the aggregate the number of warrants to purchase Common Stock issued on October 23, 2019 with an exercise price of \$0.86 per share that are exercisable until October 23, 2024, as set forth on the Holder’s signature page hereto (the “**Original Warrants**”).

**WHEREAS**, the Company and the Holder desire to amend the Original Warrants as set forth herein.

**AGREEMENT**

**Now, THEREFORE**, in consideration of the foregoing and the terms and conditions set forth herein, the Company and Holder, intending to be legally bound, hereby agree as follows:

**ARTICLE I  
DEFINITIONS**

Section 1.1 Definitions. Capitalized terms not defined in this Agreement have the meanings ascribed to such terms in the Original Warrants.

**ARTICLE II  
ORIGINAL WARRANTS AND NEW WARRANTS**

Section 2.1 Amendment of Original Warrants. Commencing immediately following the Company’s delivery to the Holder of a prospectus supplement to the Prospectus dated October 21, 2019 relating to the terms of this Agreement (the “**Prospectus Supplement**”), which shall be delivered no later than 5:00 p.m. Eastern Time on the date hereof, and ending at 9:15 a.m. Eastern Time on the next Trading Day following such delivery of the Prospectus Supplement (the “**Modified Exercise Price Term**”), the Exercise Price per share for the number of Warrant Shares subject to the Original Warrants as listed on **Exhibit A** will be equal to \$0.75 but only with respect to a cash exercise under Section 1(a) of the Original Warrants (and not pursuant to the cashless exercise procedure specified in Section 1(d) of the Original Warrants). In addition, the Maximum Percentage definition under Section 1(f) of the Original Warrants is hereby amended to 9.99%. The Warrant Shares issued upon exercise of the Original Warrants during the Modified Exercise Price Term shall be issued free of all legends. For the avoidance of doubt, with respect to any such Warrant Shares listed on **Exhibit A** that are not purchased pursuant to Holder’s exercise of an Original Warrant under Section 1(a) of such Original Warrant during the Modified Exercise Price Term, the Exercise Price will revert to the Exercise Price set forth in such Original Warrant (\$0.86 per share, subject to any further adjustments pursuant to the terms of the Original Warrants) as of the end of the Modified Exercise Price Term.

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Section 2.2 Issuance of New Warrants. If and only if Holder purchases all Warrant Shares listed on **Exhibit A** subject to the Original Warrants pursuant to a cash exercise of such Original Warrants under Section 1(a) of the Original Warrants during the Modified Exercise Price Term, the Company shall deliver to Holder, on or before the next Trading Day following the end of the Modified Exercise Price Term, a new warrant to purchase Common Stock in the form attached hereto as **Exhibit B** with respect to each such Original Warrant (each, a “**New Warrant**”), which New Warrant will be exercisable for a number of shares of Common Stock equal to 100% of the number of Warrant Shares issued to Holder pursuant to such exercise of the corresponding Original Warrant of each applicable Original Warrant during the Modified Exercise Price Term pursuant to Section 2.1 above. For purposes of clarity, the aggregate number of shares issuable upon exercise of the New Warrants shall not exceed the aggregate number of Warrant Shares listed on **Exhibit A**.

Section 2.3 Legends; Restricted Securities.

(a) The Holder understands that the New Warrants and the shares of Common Stock underlying the New Warrants are not, and may never be, registered under the Securities Act of 1933, as amended (the “**Securities Act**”), or the securities laws of any state and, accordingly, each certificate or book entry notation, as applicable, representing such securities may bear a legend substantially similar to the following:

“NEITHER THIS SECURITY NOR THE SECURITIES FOR WHICH THIS SECURITY IS EXERCISABLE HAVE BEEN REGISTERED WITH THE SECURITIES AND EXCHANGE COMMISSION OR THE SECURITIES COMMISSION OF ANY STATE IN RELIANCE UPON AN EXEMPTION FROM REGISTRATION UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE “SECURITIES ACT”), AND, ACCORDINGLY, MAY NOT BE OFFERED OR SOLD EXCEPT PURSUANT TO AN EFFECTIVE REGISTRATION STATEMENT UNDER THE SECURITIES ACT OR PURSUANT TO AN AVAILABLE EXEMPTION FROM, OR IN A TRANSACTION NOT SUBJECT TO, THE REGISTRATION REQUIREMENTS OF THE SECURITIES ACT AND IN ACCORDANCE WITH APPLICABLE STATE SECURITIES LAWS. THIS SECURITY AND THE SECURITIES ISSUABLE UPON EXERCISE OF THIS SECURITY MAY BE PLEDGED IN CONNECTION WITH A BONA FIDE MARGIN ACCOUNT WITH A REGISTERED BROKER-DEALER OR OTHER LOAN WITH A FINANCIAL INSTITUTION THAT IS AN “ACCREDITED INVESTOR” AS DEFINED IN RULE 501(a) UNDER THE SECURITIES ACT OR OTHER LOAN SECURED BY SUCH SECURITIES.”

(b) Certificates or book entry notations evidencing shares of Common Stock underlying the New Warrants shall not contain any legend (including the legend set forth in Section 2.3(a) hereof) (the earliest to occur of the following, the “**Delegend Date**”) (i) following any sale of such Common Stock pursuant to Rule 144, (ii) if such Common Stock is eligible for sale under Rule 144 (assuming cashless exercise of the New Warrants), without the requirement for the Company to be in compliance with the current public information required under Rule 144 as to such Common Stock and without volume or manner-of-sale restrictions, or (iii) if such legend is not required under applicable requirements of the Securities Act (including judicial interpretations and pronouncements issued by the staff of the Securities and Exchange Commission (“**Commission**”). The Company agrees to maintain adequate current public information in accordance with the requirements of Rule 144(c). The Company shall cause its counsel to issue a legal opinion to the transfer agent promptly after the Delegend Date if required by the Company and/or the Transfer Agent to effect the removal of the legend hereunder, which opinion shall be in form and substance reasonably acceptable to the Holder. If such Common Stock may be sold under Rule 144 (assuming cashless exercise of the New Warrants) without the requirement for the Company to be in compliance with the current public information required under Rule 144 or if such legend is not otherwise required under applicable requirements of the Securities Act (including judicial interpretations and pronouncements issued by the staff of the Commission), then such Common Stock shall be issued free of all legends.

(c) The Company shall file the reports required to be filed by it under the Securities Exchange Act of 1934, as amended, and the rules and regulations adopted by the Commission thereunder (or, if the Company is not required to file such reports, it will, upon the request of the Holder, make publicly available such necessary information for so long as necessary to permit sales pursuant to Rule 144, as such rule may be amended from time to time or any similar rule or regulation hereafter adopted by the Commission), and it will take such further action as the Holder may reasonably request, all to the extent required to enable the Holder to sell Securities without registration under the Securities Act within the limitation of the exemption provided by (i) Rule 144, as such rule may be amended from time to time, or (ii) any similar rule or regulation hereafter adopted by the Commission. Upon the request of any Holder, the Company will deliver to the Holder a written statement as to whether it has complied with such requirements and, if not, the specifics thereof.

Section 2.4 Filing of Form 8-K and Prospectus Supplement. Prior to 8:45 am Eastern Time on the next Trading Day following the date of this Agreement, the Company shall file with the Commission the Prospectus Supplement, and in addition shall file a Current Report on Form 8-K disclosing the material terms of the transactions contemplated hereby, which shall include this form of Agreement (the “**8-K Filing**”). From and after the issuance of the 8-K Filing, the Company represents to the Holder that the Holder shall not be in possession of any material, nonpublic information received from the Company, any of its Subsidiaries (as defined below) or any of their respective officers, directors, employees or agents. In addition, effective upon the filing of the 8-K Filing, the Company acknowledges and agrees that any and all confidentiality or similar obligations under any agreement, whether written or oral, between the Company, any of its Subsidiaries or any of their respective officers, directors, employees or agents, on the one hand, and the Holder or any of its Affiliates, on the other hand, shall terminate. The Company shall not, and shall cause each of its Subsidiaries and its and each of their respective officers, directors, employees and agents not to, provide the Holder with any material, nonpublic information regarding the Company or any of its Subsidiaries from and after the date hereof without the express prior written consent of the Holder. To the extent that the Company, any of its Subsidiaries or any of their respective officers, directors, employees or agents, delivers any material, non-public information to the Holder without the Holder’s consent, the Company hereby covenants and agrees that the Holder shall not have any duty of confidentiality with respect to, or a duty not to trade on the basis of, such material, non-public information. As used herein, “**Subsidiary**” means any subsidiary of the Company, and shall, where applicable, also include any direct or indirect subsidiary of the Company formed or acquired after the date hereof.

### **ARTICLE III REPRESENTATIONS AND WARRANTIES**

Section 3.1 Representations and Warranties of the Company. The Company hereby makes the representations and warranties set forth below to the Holder that as of the date of its execution of this Agreement:

(a) Authorization; Enforcement. The Company has the requisite corporate power and authority to enter into and to consummate the transactions contemplated by this Agreement and otherwise to carry out its obligations hereunder and thereunder. The execution and delivery of this Agreement by the Company and the consummation by it of the transactions contemplated hereby have been duly authorized by all necessary action on the part of the Company and no further action is required by the Company, its board of directors or its stockholders in connection therewith other than in connection with (i) the filings required pursuant to Section 2.4 of this Agreement, (ii) such applications for listing of the shares of Common Stock issuable upon exercise of the New Warrants (“**New Warrant Shares**”) that are required to be filed with the Nasdaq Stock Market in the time and manner required thereby, and (iii) such filings as are required to be made under applicable state securities laws (the “**Required Approvals**”). This Agreement has been duly executed by the Company and, when delivered in accordance with the terms hereof will constitute a valid and binding obligation of the Company enforceable against the Company in accordance with its terms except (i) as limited by general equitable principles and applicable bankruptcy, insolvency, reorganization, moratorium and other laws of general application affecting enforcement of creditors’ rights generally, (ii) as limited by laws relating to the availability of specific performance, injunctive relief or other equitable remedies and (iii) insofar as indemnification and contribution provisions may be limited by applicable law.

(b) Organization. The Company is a duly organized and validly existing corporation in good standing under the laws of the State of Delaware.

(c) Registration Statement. The Warrant Shares are registered for issuance on that certain Registration Statement on Form S-1 (File No. 333-233828), as amended (the “**Registration Statement**”), and the Company knows of no reasons why such Registration Statement shall not remain available for the issuance of such Warrant Shares for the foreseeable future. The Company shall use commercially reasonable efforts to keep the Registration Statement effective and available for the issuance of the Warrant Shares underlying the Original Warrants until all Original Warrants are exercised and the Warrant Shares have been sold.

(d) No Conflicts. The execution, delivery and performance of this Agreement by the Company and the consummation by the Company of the transactions contemplated hereby do not and will not: (i) conflict with or violate any provision of the Company’s amended and restated certificate of incorporation, amended and restated bylaws or other organizational or charter documents, or (ii) conflict with, or constitute a default (or an event that with notice or lapse of time or both would become a default) under, result in the creation of any lien upon any of the properties or assets of the Company, or give to others any rights of termination, amendment, acceleration or cancellation (with or without notice, lapse of time or both) of, any material agreement, credit facility, debt or other material instrument (evidencing Company debt or otherwise) or other material understanding to which the Company is a party or by which any property or asset of the Company is bound or affected, or (iii) subject to the Required Approvals, conflict with or result in a violation of any law, rule, regulation, order, judgment, injunction, decree or other restriction of any court or governmental authority to which the Company is subject (including federal and state securities laws and regulations), or by which any property or asset of the Company is bound or affected, except in the case of each of clauses (ii) and (iii), such as would not have or reasonably be expected to result in (i) a material adverse effect on the legality, validity or enforceability of this Agreement, (ii) a material adverse effect on the results of operations, assets, business or condition (financial or otherwise) of the Company and its subsidiaries, taken as a whole, or (iii) a material adverse effect on the Company’s ability to perform in any material respect on a timely basis its obligations under this Agreement (any of (i), (ii) or (iii), a “**Material Adverse Effect**”).

(e) Disclosure. Except with respect to the material terms and conditions of the transactions contemplated by this Agreement, the Company confirms that neither it nor any other Person acting on its behalf has provided any of Holder or their agents or counsel with any information that it believes constitutes or might constitute material, non-public information. The Company understands and confirms that the Holder will rely on the foregoing representation in effecting transactions in securities of the Company. As of the date of this Agreement, all of the disclosure when furnished by or on behalf of the Company to the Holder regarding the Company and its Subsidiaries, their respective businesses and the transactions contemplated hereby, including but not limited to the disclosure set forth in the SEC Reports (as defined below), is true and correct in all material respects and does not contain any untrue statement of a material fact or omit to state any material fact necessary in order to make the statements made therein, in light of the circumstances under which they were made, not misleading. As used herein, “**SEC Reports**” means all reports, schedules, forms, statements and other documents required to be filed by the Company as of the date of this Agreement with the Commission pursuant to the reporting requirements of the 1934 Act, including all exhibits included therein and financial statements, notes and schedules thereto and documents incorporated by reference therein.

(f) Issuance of Securities. The issuance of the New Warrants are duly authorized and, upon issuance in accordance with the terms of this Agreement, the New Warrants shall be validly issued and free from all preemptive or similar rights (except for those which have been validly waived prior to the date hereof), taxes, liens and charges and other encumbrances with respect to the issue thereof, other than restrictions on transfer under applicable state and federal securities laws and liens or encumbrances created by or imposed by the Holder. As of the date of issuance of the New Warrant, a number of shares of Common Stock shall have been duly authorized and reserved for issuance which equals or exceeds the maximum number of Warrant Shares issuable upon exercise of the New Warrants (without taking into account any limitations on the exercise of the New Warrants set forth therein). Upon exercise of the New Warrants in accordance with the terms of the New Warrants, the New Warrant Shares when issued will be validly issued, fully paid and nonassessable and free from all preemptive or similar rights, taxes, liens, charges and other encumbrances with respect to the issue thereof, other than restrictions on transfer under applicable state and federal securities laws and liens or encumbrances created by or imposed by the Holder, with the holders being entitled to all rights accorded to a holder of Common Stock. Assuming the accuracy of each of the representations and warranties set forth in Section 3.2 of this Agreement, the offer and issuance by the Company of the New Warrants is exempt from registration under the Securities Act.

(g) No General Solicitation. Neither the Company, nor any of its Subsidiaries or Affiliates, nor any Person acting on its or their behalf, has engaged in any form of general solicitation or general advertising (within the meaning of Regulation D promulgated under the Securities Act) in connection with the offer or sale of the New Warrants.

(h) No Integrated Offering. None of the Company, its Subsidiaries or any of their Affiliates, nor any Person acting on their behalf has, directly or indirectly, made any offers or sales of any security or solicited any offers to buy any security, under circumstances that would require registration of the issuance of any of the New Warrants or the New Warrant Shares (collectively, the “**New Securities**”) under the Securities Act, whether through integration with prior offerings or otherwise, or cause this offering of the New Securities to require approval of shareholders of the Company for purposes of the Securities Act or any applicable shareholder approval provisions, including, without limitation, under the rules and regulations of the Nasdaq Stock Market. None of the Company, its Subsidiaries, their Affiliates nor any Person acting on their behalf will take any action or steps that would require registration of the issuance of any of the New Securities under the Securities Act or cause the offering of any of the New Securities to be integrated with other offerings for purposes of any such applicable shareholder approval provisions.

(i) No Disqualification Events. With respect to New Warrants and the New Warrant Shares (collectively, “**Securities**”) to be offered and sold hereunder in reliance on Rule 506(b) under the Securities Act (“**Regulation D Securities**”), none of the Company, any of its predecessors, any affiliated issuer, any director, executive officer, other officer of the Company participating in the offering hereunder, any beneficial owner of 20% or more of the Company's outstanding voting equity securities, calculated on the basis of voting power, any promoter (as that term is defined in Rule 405 under the Securities Act) connected with the Company in any capacity at the time of sale, nor any person that has been or will be paid (directly or indirectly) remuneration for solicitation of purchasers in connection with such sale of securities (each, an “**Issuer Covered Person**” and, together, “**Issuer Covered Persons**”) is subject to any of the “Bad Actor” disqualifications described in Rule 506(d)(1)(i) to (viii) under the Securities Act (a “**Disqualification Event**”), except for a Disqualification Event covered by Rule 506(d)(2) or (d)(3). The Company has exercised reasonable care to determine whether any Issuer Covered Person is subject to a Disqualification Event. The Company has complied, to the extent applicable, with its disclosure obligations under Rule 506(e), and has furnished to the Holder a copy of any disclosures provided thereunder.



(j) Outstanding Shares. As of the date hereof, the Company has at least 34,552,469 shares of Common Stock outstanding. The Company will promptly notify Holder if its number of outstanding shares of Common Stock decreases during the Modified Exercise Price Term.

Section 3.2 Representations and Warranties of the Holder. The Holder hereby makes the representations and warranties set forth below to the Company that as of the date of its execution of this Agreement.

(a) Organization; Due Authorization. The Holder is either an individual or an entity duly incorporated or formed, validly existing and in good standing under the laws of the jurisdiction of its incorporation or formation with full right, corporate, partnership, limited liability company or similar power and authority to enter into and to consummate the transactions contemplated by this Agreement and otherwise to carry out its obligations hereunder. The Holder represents and warrants that (i) the execution and delivery of this Agreement by it and the consummation by it of the transactions contemplated hereby have been duly authorized by all necessary action on its behalf and (ii) this Agreement has been duly executed and delivered by the Holder and constitutes the valid and binding obligation of the Holder, enforceable against it in accordance with its terms.

(b) Understandings or Arrangements. The Holder is acquiring the Securities as principal for its own account and has no direct or indirect arrangement or understandings with any other persons to distribute or regarding the distribution of such Securities (this representation and warranty not limiting the Holder's right to sell the Securities pursuant to a registration statement or otherwise in compliance with applicable federal and state securities laws). The Holder is acquiring the Securities hereunder in the ordinary course of its business.

(c) No Conflicts. The Holder represents and warrants that the execution, delivery and performance of this Agreement by the Holder and the consummation by the Holder of the transactions contemplated hereby do not and will not: (i) conflict with or violate any provision of the Holder's organizational or charter documents, or (ii) conflict with or result in a violation of any agreement, law, rule, regulation, order, judgment, injunction, decree or other restriction of any court or governmental authority which would interfere with the ability of the Holder to perform its obligations under this Agreement.

(d) Access to Information. The Holder acknowledges that it has had the opportunity to review this Agreement and the SEC Reports and has been afforded (i) the opportunity to ask such questions as it has deemed necessary of, and to receive answers from, representatives of the Company concerning the terms and conditions of the exercise of the Original Warrants and the merits and risks of investing in the Warrant Shares, the terms and conditions of the offering of the Securities and the merits and risks of investing in the Securities; (ii) access to information about the Company and its financial condition, results of operations, business, properties, management and prospects sufficient to enable it to evaluate its investment; and (iii) the opportunity to obtain such additional information that the Company possesses or can acquire without unreasonable effort or expense that is necessary to make an informed investment decision with respect to the investment.

(e) **Holder Status.** The Holder represents and warrants that at the time the Holder was offered the Securities, it was, and as of the date hereof it is, and on each date on which it exercises any New Warrants, it was or will be an “accredited investor” as defined in Rule 501 under the Securities Act.

(f) **Knowledge.** The Holder, either alone or together with its representatives, has such knowledge, sophistication and experience in business and financial matters so as to be capable of evaluating the merits and risks of the prospective investment in the Warrant Shares, and has so evaluated the merits and risks of such investment. The Holder is able to bear the economic risk of an investment in the Warrant Shares and, at the present time, is able to afford a complete loss of such investment.

## ARTICLE IV MISCELLANEOUS

### Section 4.1 Subsequent Equity Sales.

(a) From the date hereof until the fifth calendar day following the date hereof (the “**Restricted Period**”), neither the Company nor any Subsidiary shall issue, enter into any agreement to issue or announce the issuance or proposed issuance of any shares of Common Stock or Common Stock Equivalents. As used herein, “**Common Stock Equivalents**” means any securities of the Company or the Subsidiaries which would entitle the holder thereof to acquire at any time Common Stock, including, without limitation, any debt, preferred stock, right, option, warrant or other instrument that is at any time convertible into or exercisable or exchangeable for, or otherwise entitles the holder thereof to receive, Common Stock. In addition, from the date hereof until the end of the Restricted Period, the Company shall not, directly or indirectly, file any registration statement with the Commission, or file any amendment or supplement thereto or cause any registration statement or amendment thereto to be declared effective by the Commission, or grant any registration rights to any Person that can be exercised prior to such time as set forth above; provided however, that the foregoing shall not prevent the Company from filing during the Restricted Period a registration statement on Form S-8.

(b) Notwithstanding the foregoing, this Section 4.1 shall not apply in respect of an Exempt Issuance. “**Exempt Issuance**” means the issuance of (a) shares of Common Stock or options to employees, officers or directors of the Company pursuant to any stock or option plan duly adopted for such purpose, by a majority of the non-employee members of the Board of Directors or a majority of the members of a committee of non-employee directors established for such purpose for services rendered to the Company, (b) securities upon the exercise or exchange of or conversion of any Securities issued hereunder and/or other securities exercisable or exchangeable for or convertible into shares of Common Stock issued and outstanding on the date of this Agreement, provided that such securities have not been amended since the date of this Agreement to increase the number of such securities or to decrease the exercise price, exchange price or conversion price of such securities (other than in connection with stock splits or combinations) or to extend the term of such securities, and (c) securities issued pursuant to acquisitions or strategic transactions approved by a majority of the disinterested directors of the Company, provided that, with respect to any such issuance as described in this subclause (c), such issuance shall only be to a Person (or to the equity holders of a Person) which is, itself or through its subsidiaries, an operating company or an owner of an asset in a business synergistic with the business of the Company and shall provide to the Company additional benefits in addition to the investment of funds, but shall not include a transaction in which the Company is issuing securities primarily for the purpose of raising capital or to an entity whose primary business is investing in securities; provided, that such securities are issued as “restricted securities” (as defined in Rule 144) and the recipients of such securities are not granted registration rights that enable or require the filing of a resale registration statement until after the time period specified in the first sentence of Section 4.1(a) above.

Section 4.2 Resale Registration Statement. The Company reserves the right at any time to file and cause to become effective a registration statement covering the resale of the New Warrant Shares. Holder hereby covenants and agrees to promptly provide the Company with any material information that is reasonably required to be provided in such registration statement with respect to such Holder. The Company may require Holder, by written notice given to Holder not less than seven (7) Trading Days prior to the filing date of a registration statement, to promptly, and in any event within five (5) Trading Days after receipt of such notice, furnish in writing to the Company such information regarding the distribution of the New Warrant Shares and such other information as may be legally required in connection with such registration. The Company agrees to provide Holder with a customary indemnification and contribution agreement, in form reasonably satisfactory to Holder, in connection with any sales of New Warrant Shares pursuant to a registration statement. Notwithstanding anything to the contrary contained herein, (i) the provisions of this Section 4.2 shall not be applicable to the extent that the Holder is required to be named as an underwriter in any resale registration statement, and (ii) any indemnities required to be provided in this Section 4.2 by the Holder shall apply solely with respect to written information provided by the Holder specifically for use in such registration statement, and such indemnities shall be limited to net proceeds received by such Holder with respect to sales of New Warrant Shares.

Section 4.3 Notices. Any and all notices or other communications or deliveries required or permitted to be provided hereunder shall be made by email to (i) the email address of the Holder set forth on Holders' signature page or (ii) the email address of the Company set forth on the Company's signature page, as applicable.

Section 4.4 Survival. All warranties and representations (as of the date such warranties and representations were made) made herein or in any certificate or other instrument delivered by it or on its behalf under this Agreement shall be considered to have been relied upon by the parties hereto and shall survive the issuance of the New Warrants. This Agreement shall inure to the benefit of and be binding upon the successors and permitted assigns of each of the parties; provided however that no party may assign this Agreement or the obligations and rights of such party hereunder without the prior written consent of the other parties hereto.

Section 4.5 Execution. This Agreement may be executed in counterparts, all of which when taken together shall be considered one and the same agreement and shall become effective when counterparts have been signed by each party and delivered to the other party, it being understood that both parties need not sign the same counterpart. In the event that any signature is delivered by facsimile transmission, such signature shall create a valid and binding obligation of the party executing (or on whose behalf such signature is executed) with the same force and effect as if such facsimile signature page were an original thereof.

Section 4.6 Severability. If any provision of this Agreement is held to be invalid or unenforceable in any respect, the validity and enforceability of the remaining terms and provisions of this Agreement shall not in any way be affected or impaired thereby and the parties will attempt to agree upon a valid and enforceable provision that is a reasonable substitute therefor, and upon so agreeing, shall incorporate such substitute provision in this Agreement.

Section 4.7 Governing Law. All questions concerning the construction, validity, enforcement and interpretation of this Agreement shall be determined pursuant to Section 10 of the New Warrants.

Section 4.8 Entire Agreement. This Agreement, together with the exhibits and schedules hereto, contain the entire understanding of the parties with respect to the subject matter hereof and supersede all prior agreements and understandings, oral or written, with respect to such matters, which the parties acknowledge have been merged into such documents, exhibits and schedules.

Section 4.9 Construction. The headings herein are for convenience only, do not constitute a part of this Agreement and shall not be deemed to limit or affect any of the provisions hereof. The language used in this Agreement will be deemed to be the language chosen by the parties to express their mutual intent, and no rules of strict construction will be applied against any party.

Section 4.10 Fees and Expenses. Except as expressly set forth herein, each party shall pay the fees and expenses of its advisers, counsel, accountants and other experts, if any, and all other expenses incurred by such party incident to the negotiation, preparation, execution, delivery and performance of this Agreement; *provided, however*, that the Company shall pay the reasonable legal fees of Ropes & Gray LLP, outside counsel for Sio Partners LP and certain of its Affiliates, in an amount not to exceed \$35,000 in the aggregate. The Company shall pay all transfer agent fees, stamp taxes and other taxes and duties levied in connection with the delivery of any Warrant Shares.

Section 4.11 Equal Treatment of New Warrant Holders. No consideration (including any modification of this Agreement or the New Warrants) shall be offered or paid to any holder of New Warrants to amend or consent to a waiver or modification of any provision of this Agreement or the New Warrants unless the same consideration is also offered to all of the holders of the New Warrants. For clarification purposes, this provision constitutes a separate right granted to each holder of New Warrants by the Company and negotiated separately by each holder of the New Warrants, and is intended for the Company to treat the holders of New Warrants as a class and shall not in any way be construed as the holders of New Warrants acting in concert or as a group with respect to the purchase, disposition or voting of Securities or otherwise.

[Signature page follows]

IN WITNESS WHEREOF, the undersigned has caused this Warrants Amendment and Agreement to be executed by its duly authorized representative as of the date first written above.

**COMPANY:**

**Bionano Genomics, Inc.**

By: \_\_\_\_\_

Name: R. Erik Holmlin, Ph.D.

Title: President and Chief Executive Officer

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IN WITNESS WHEREOF, the undersigned has caused this Warrants Amendment and Agreement to be executed by its duly authorized representative as of the date first written above.

**Name of Holder:**

**SIO PARTNERS LP**

By: Sio Capital Management LLC  
Its Investment Manager

By: \_\_\_\_\_  
Name: Michael Castor  
Title: Managing Member

Number of Original Warrants held: 2,209,338  
Email Address of Holder: \_\_\_\_\_  
Address for Delivery of New Warrants for Holder: \_\_\_\_\_

**SIO PARTNERS MASTER FUND LP**

By: Sio Capital Management LLC  
Its Investment Manager

By: \_\_\_\_\_  
Name: Michael Castor  
Title: Managing Member

Number of Original Warrants held: 1,253,581  
Email Address of Holder: \_\_\_\_\_  
Address for Delivery of New Warrants for Holder: \_\_\_\_\_

\_\_\_\_\_

IN WITNESS WHEREOF, the undersigned has caused this Warrants Amendment and Agreement to be executed by its duly authorized representative as of the date first written above.

**Name of Holder:**

**COMPASS MAV LLC**

By: Sio Capital Management LLC  
Its Investment  
Manager

By:  
Name: Michael Castor  
Title: Managing Member

Number of Original Warrants held: 1,416,353  
Email Address of Holder: \_\_\_\_\_

Address for Delivery of New Warrants for Holder: \_\_\_\_\_  
\_\_\_\_\_

**COMPASS OFFSHORE MAV LIMITED**

By: Sio Capital Management LLC  
Its Investment Manager

By:  
Name: Michael Castor  
Title: Managing Member

Number of Original Warrants held: 904,223  
Email Address of Holder: \_\_\_\_\_

Address for Delivery of New Warrants for Holder: \_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_

IN WITNESS WHEREOF, the undersigned has caused this Warrants Amendment and Agreement to be executed by its duly authorized representative as of the date first written above.

**WALLEYE OPPORTUNITIES MASTER FUND LTD**

Sio Capital  
By: Management  
LLC  
Its Investment Manager

By: \_\_\_\_\_  
Name: Michael Castor  
Title: Managing Member

Number of Original Warrants held: 601,093  
Email Address of Holder: \_\_\_\_\_  
Address for Delivery of New Warrants for Holder: \_\_\_\_\_

**WALLEYE TRADING LLC**

Sio Capital  
By: Management  
LLC  
Its Investment Manager

By: \_\_\_\_\_  
Name: Michael Castor  
Title: Managing Member

Number of Original Warrants held: 598,370  
Email Address of Holder: \_\_\_\_\_  
Address for Delivery of New Warrants for Holder: \_\_\_\_\_

**Exhibit A**

**Modified Original Warrants**

Warrant Number	Holder Name	Issuance Date	Number of Warrant Shares
CSW-09	Compass MAV LLC	10/23/2019	656,480
CSW-10	Compass Offshore MAV Limited	10/23/2019	418,720
CSW-11	Sio Partners LP	10/23/2019	923,584
CSW-12	Sio Partners Master Fund LP	10/23/2019	563,936
CSW-13	Walleye Opportunities Master Fund Ltd	10/23/2019	384,320
CSW-14	Walleye Trading LLC	10/23/2019	252,960
<b>Total</b>			<b>3,200,000</b>



**Exhibit B**

**Form of New Warrant**

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NEITHER THIS SECURITY NOR THE SECURITIES FOR WHICH THIS SECURITY IS EXERCISABLE HAVE BEEN REGISTERED WITH THE SECURITIES AND EXCHANGE COMMISSION OR THE SECURITIES COMMISSION OF ANY STATE IN RELIANCE UPON AN EXEMPTION FROM REGISTRATION UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT"), AND, ACCORDINGLY, MAY NOT BE OFFERED OR SOLD EXCEPT PURSUANT TO AN EFFECTIVE REGISTRATION STATEMENT UNDER THE SECURITIES ACT OR PURSUANT TO AN AVAILABLE EXEMPTION FROM, OR IN A TRANSACTION NOT SUBJECT TO, THE REGISTRATION REQUIREMENTS OF THE SECURITIES ACT AND IN ACCORDANCE WITH APPLICABLE STATE SECURITIES LAWS. THIS SECURITY AND THE SECURITIES ISSUABLE UPON EXERCISE OF THIS SECURITY MAY BE PLEDGED IN CONNECTION WITH A BONA FIDE MARGIN ACCOUNT OR OTHER LOAN SECURED BY SUCH SECURITIES.

## FORM OF WARRANT

### BIONANO GENOMICS, INC.

#### WARRANT TO PURCHASE COMMON STOCK

Warrant No.:

Number of Shares of Common Stock: \_\_\_\_\_

Date of Issuance: [\_\_\_], 2020 ("**Issuance Date**")

Bionano Genomics, Inc., a company organized under the laws of Delaware (the "**Company**"), hereby certifies that, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, [HOLDER], the registered holder hereof or its permitted assigns (the "**Holder**"), is entitled, subject to the terms set forth below, to purchase from the Company, at the Exercise Price (as defined below) then in effect, at any time or times on or after the six-month anniversary of the Issuance Date (the "**Initial Exercisability Date**"), but not after 5:00 p.m., New York time, on the Expiration Date, (as defined below), \_\_\_\_\_ (\_\_\_\_\_) fully paid non-assessable shares of Common Stock (as defined below), subject to adjustment as provided herein (the "**Warrant Shares**"). Except as otherwise defined herein, capitalized terms in this Warrant to Purchase Common Stock (including any Warrants to Purchase Common Stock issued in exchange, transfer or replacement hereof, this "**Warrant**"), shall have the meanings set forth in Section 16. This Warrant is one of the Warrants to Purchase Common Stock (the "**Warrants**") issued pursuant to (i) that certain Warrants Amendment and Agreement (the "**Purchase Agreement**"), dated March 2, 2020 (the "**Subscription Date**"), by and among the Company and the purchasers signatory thereto.

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1. EXERCISE OF WARRANT.

(a) **Mechanics of Exercise.** Subject to the terms and conditions hereof (including, without limitation, the limitations set forth in Section 1(f)), this Warrant may be exercised by the Holder at any time or times on or after the Initial Exercisability Date, in whole or in part, by delivery (whether via facsimile, electronic mail or otherwise) of a written notice, in the form attached hereto as Exhibit A (the “**Exercise Notice**”), of the Holder's election to exercise this Warrant. Within one (1) Trading Day following the delivery of the Exercise Notice, the Holder shall make payment to the Company of an amount equal to the Exercise Price in effect on the date of such exercise multiplied by the number of Warrant Shares as to which this Warrant is being exercised (the “**Aggregate Exercise Price**”) in cash by wire transfer of immediately available funds or, if the provisions of Section 1(d) are applicable, by notifying the Company that this Warrant is being exercised pursuant to a Cashless Exercise (as defined in Section 1(d)). The Holder shall not be required to deliver the original Warrant in order to effect an exercise hereunder, nor shall any ink-original signature or medallion guarantee (or other type of guarantee or notarization) with respect to any Exercise Notice be required. Execution and delivery of the Exercise Notice with respect to less than all of the Warrant Shares shall have the same effect as cancellation of the original Warrant and issuance of a new Warrant evidencing the right to purchase the remaining number of Warrant Shares and the Holder shall not be required to physically surrender this Warrant to the Company until the Holder has purchased all of the Warrant Shares available hereunder and the Warrant has been exercised in full, in which case, the Holder shall surrender this Warrant to the Company for cancellation within three (3) Trading Days of the date on which the final Exercise Notice is delivered to the Company. On or before the first (1<sup>st</sup>) Trading Day following the date on which the Holder has delivered the applicable Exercise Notice, the Company shall transmit by facsimile or electronic mail an acknowledgment of receipt of the Exercise Notice, in the form attached to the Exercise Notice, to the Holder and the Company's transfer agent (the “**Transfer Agent**”). So long as the Holder delivers the Aggregate Exercise Price (or notice of a Cashless Exercise, if applicable) on or prior to the first (1<sup>st</sup>) Trading Day following the date on which the Exercise Notice has been delivered to the Company, then on or prior to the earlier of (i) the second (2<sup>nd</sup>) Trading Day and (ii) the number of Trading Days comprising the Standard Settlement Period, in each case following the date on which the Exercise Notice has been delivered to the Company, or, if the Holder does not deliver the Aggregate Exercise Price (or notice of a Cashless Exercise, if applicable) on or prior to the first (1<sup>st</sup>) Trading Day following the date on which the Exercise Notice has been delivered to the Company, then on or prior to the first (1<sup>st</sup>) Trading Day following the date on which the Aggregate Exercise Price (or notice of a Cashless Exercise) is delivered (such earlier date, or if later, the earliest day on which the Company is required to deliver Warrant Shares pursuant to this Section 1(a), the “**Share Delivery Date**”), the Company shall (X) provided that the Transfer Agent is participating in The Depository Trust Company (“**DTC**”) Fast Automated Securities Transfer Program and either (A) there is an effective registration statement permitting the issuance of the Warrant Shares to or resale of the Warrant Shares by the Holder or (B) the Warrant Shares are eligible for resale by the Holder without volume or manner-of-sale limitations pursuant to Rule 144 (assuming Cashless Exercise of the Warrant), credit such aggregate number of Warrant Shares to which the Holder is entitled pursuant to such exercise to the Holder's or its designee's balance account with DTC through its Deposit / Withdrawal At Custodian system, or (Y) if the Transfer Agent is not participating in the DTC Fast Automated Securities Transfer Program or either (A) there is not an effective registration statement permitting the issuance of the Warrant Shares to or resale of the Warrant Shares by the Holder or (B) the Warrant Shares are not eligible for resale by the Holder without volume or manner-of-sale limitations pursuant to Rule 144 (assuming Cashless Exercise of the Warrant), issue and dispatch by overnight courier to the physical address or email address as specified in the Exercise Notice, a certificate or evidence of a credit of book-entry shares, registered in the name of the Holder or its designee, for the number of Warrant Shares to which the Holder is entitled pursuant to such exercise. The Company shall be responsible for all fees and expenses of the Transfer Agent and all fees and expenses with respect to the issuance of Warrant Shares via DTC, if any, including without limitation for same day processing. Upon delivery of the Exercise Notice, the Holder shall be deemed for all corporate purposes to have become the holder of record and beneficial owner of the Warrant Shares with respect to which this Warrant has been exercised, irrespective of the date such Warrant Shares are credited to the Holder's DTC account or the date of delivery of the certificates and/or book entry notations evidencing such Warrant Shares, as the case may be. If this Warrant is physically delivered to the Company in connection with any exercise pursuant to this Section 1(a) and the number of Warrant Shares represented by this Warrant submitted for exercise is greater than the number of Warrant Shares being acquired upon an exercise, then the Company shall as soon as practicable and in no event later than three (3) Trading Days after any exercise and at its own expense, issue and deliver to the Holder (or its designee) a new Warrant (in accordance with Section 7(d)) representing the right to purchase the number of Warrant Shares issuable immediately prior to such exercise under this Warrant, less the number of Warrant Shares with respect to which this Warrant is exercised. No fractional Warrant Shares are to be issued upon the exercise of this Warrant, but rather the number of Warrant Shares to be issued shall be rounded down to the nearest whole number. The Company shall pay any and all transfer, stamp, issuance and similar taxes, costs and expenses (including, without limitation, fees and expenses of the Transfer Agent) which may be payable with respect to the issuance and delivery of Warrant Shares upon exercise of this Warrant. The Company's obligations to issue and deliver Warrant Shares in accordance with the terms and subject to the conditions hereof are absolute and unconditional, irrespective of any action or inaction by the Holder to enforce the same, any waiver or consent with respect to any provision hereof, the recovery of any judgment against any Person or any action to enforce the same, or any setoff, counterclaim, recoupment, limitation or termination; provided, however, that the Company shall not be required to deliver Warrant Shares with respect to an exercise prior to the Holder's delivery of the Aggregate Exercise Price (or notice of a Cashless Exercise) with respect to such exercise.

(b) Exercise Price. For purposes of this Warrant, “**Exercise Price**” means \$1.06 per share, subject to adjustment as provided herein.

(c) Company's Failure to Timely Deliver Securities. If either (I) the Company shall fail for any reason or for no reason to issue to the Holder on or prior to the applicable Share Delivery Date, if (x) the Transfer Agent is not participating in the DTC Fast Automated Securities Transfer Program, a certificate or evidence of a book-entry credit for the number of shares of Common Stock to which the Holder is entitled and register such Common Stock on the Company's share register or (y) the Transfer Agent is participating in the DTC Fast Automated Securities Transfer Program, to credit the Holder's balance account with DTC, for such number of shares of Common Stock to which the Holder is entitled upon the Holder's exercise of this Warrant or (II) a registration statement covering the issuance or resale of the Warrant Shares that are the subject of the Exercise Notice (the “**Exercise Notice Warrant Shares**”) is not available for the issuance or resale, as applicable, of such Exercise Notice Warrant Shares and (x) the Company fails to promptly, but in no event later than one (1) Business Day after such registration statement becomes unavailable, to so notify the Holder and (y) the Company is unable to deliver the Exercise Notice Warrant Shares electronically without any restrictive legend by crediting such aggregate number of Exercise Notice Warrant Shares to the Holder's or its designee's balance account with DTC through its Deposit / Withdrawal At Custodian system (the event described in the immediately foregoing clause (II) is hereinafter referred as a “**Notice Failure**” and together with the event described in clause (I) above, an “**Exercise Failure**”), then, in addition to all other remedies available to the Holder, if on or prior to the applicable Share Delivery Date either (I) if the Transfer Agent is not participating in the DTC Fast Automated Securities Transfer Program, the Company shall fail to issue and deliver a certificate or evidence of a book-entry credit to the Holder and register such shares of Common Stock on the Company's share register or, if the Transfer Agent is participating in the DTC Fast Automated Securities Transfer Program, credit the Holder's balance account with DTC for the number of shares of Common Stock to which the Holder is entitled upon the Holder's exercise hereunder or pursuant to the Company's obligation pursuant to clause (ii) below or (II) if a Notice Failure occurs, and if after such date the Holder is required by its broker to purchase (in an open market transaction or otherwise) or the Holder's brokerage firm otherwise purchases, shares of Common Stock to deliver in satisfaction of a sale by the Holder of the Warrant Shares which the Holder anticipated receiving upon such exercise (a “**Buy-In**”), then the Company shall (A) pay in cash to the Holder the amount, if any, by which (x) the Holder's total purchase price (including brokerage commissions, if any) for the shares of Common Stock so purchased exceeds (y) the amount obtained by multiplying (1) the number of Warrant Shares that the Company was required to deliver to the Holder in connection with the exercise at issue times (2) the price at which the sell order giving rise to such purchase obligation was executed, and (B) at the option of the Holder, either reinstate the portion of the Warrant and equivalent number of Warrant Shares for which such exercise was not honored (in which case such exercise shall be deemed rescinded) or deliver to the Holder the number of shares of Common Stock that would have been issued had the Company timely complied with its exercise and delivery obligations hereunder. For example, if the Holder purchases Common Stock having a total purchase price of \$11,000 to cover a Buy-In with respect to an attempted exercise of shares of Common Stock with an aggregate sale price giving rise to such purchase obligation of \$10,000, under clause (A) of the immediately preceding sentence the Company shall be required to pay the Holder \$1,000. The Holder shall provide the Company written notice indicating the amounts payable to the Holder in respect of the Buy-In and, upon request of the Company, evidence of the amount of such loss. Nothing herein shall limit a Holder's right to pursue any other remedies available to it hereunder, at law or in equity including, without limitation, a decree of specific performance and/or injunctive relief with respect to the Company's failure to timely deliver shares of Common Stock upon exercise of the Warrant as required pursuant to the terms hereof. The Company's current transfer agent participates in the DTC Fast Automated Securities Transfer Program (“**FAST**”). In the event that the Company changes transfer agents while this Warrant is outstanding, the Company shall use commercially reasonable efforts to select a transfer agent that participates in FAST. While this Warrant is outstanding, the Company shall request its transfer agent to participate in FAST. In addition to the foregoing rights, (i) if the Company fails to deliver the applicable number of Warrant Shares upon an exercise pursuant to Section 1 by the applicable Share Delivery Date, then the Holder shall have the right to rescind such exercise in whole or in part and retain and/or have the Company return, as the case may be, any portion of this Warrant that has not been exercised pursuant to such Exercise Notice; provided that the rescission of an exercise shall not affect the Company's obligation to make any payments that have accrued prior to the date of such notice pursuant to this Section 1(c) or otherwise, and (ii) if a registration statement covering the issuance or resale of the Warrant Shares that are subject to an Exercise Notice is not available for the issuance or resale, as applicable, of such Exercise Notice Warrant Shares and the Holder has submitted an Exercise Notice prior to receiving notice of the non-availability of such registration statement and the Company has not already delivered the Warrant Shares underlying such Exercise Notice electronically without any restrictive legend by crediting such aggregate number of Warrant Shares to which the Holder is entitled pursuant to such exercise to the Holder's or its designee's balance account with DTC through its Deposit / Withdrawal At Custodian system, the Holder shall have the option, by delivery of notice to the Company, to (x) rescind such Exercise Notice in whole or in part and retain or have returned, as the case may be, any portion of this Warrant that has not been exercised pursuant to such Exercise Notice; provided that the rescission of an Exercise Notice shall not affect the Company's obligation to make any payments that have accrued prior to the date of such notice pursuant to this Section 1(c) or otherwise, and/or (y) switch some or all of such Exercise Notice from a cash exercise to a Cashless Exercise. In addition to the foregoing, if the Company fails for any reason to deliver to the Holder the Warrant Shares subject to an Exercise Notice by the second Trading Day following the Share Delivery Date, the Company shall pay to the Holder, in cash, as liquidated damages and not as a penalty, for each \$1,000 of Warrant Shares subject to such exercise (based on the Weighted Average Price of the Common Stock on the date of the applicable Exercise Notice), \$10 per Trading Day (increasing to \$20 per Trading Day on the fifth Trading Day after such liquidated damages begin to accrue) for each Trading Day after the second Trading Day following such Share Delivery Date until such Warrant Shares are delivered or Holder rescinds such exercise.

(d) **Cashless Exercise.** Notwithstanding anything contained herein to the contrary, if at any time on or after the Initial Exercisability Date a registration statement covering the issuance or resale of the Exercise Notice Warrant Shares is not available for the issuance or resale, as applicable, of such Exercise Notice Warrant Shares, the Holder may, in its sole discretion, exercise this Warrant in whole or in part and, in lieu of making the cash payment otherwise contemplated to be made to the Company upon such exercise in payment of the Aggregate Exercise Price, elect instead to receive upon such exercise the “Net Number” of shares of Common Stock determined according to the following formula (a “**Cashless Exercise**”):

$$\text{Net Number} = \frac{(A \times B) - (A \times C)}{B}$$

For purposes of the foregoing formula:

A= the total number of shares with respect to which this Warrant is then being exercised.

B= as applicable: (i) the Closing Sale Price of the Common Stock on the Trading Day immediately preceding the date of the applicable Exercise Notice if such Exercise Notice is (1) both executed and delivered pursuant to Section 1(a) hereof on a day that is not a Trading Day or (2) both executed and delivered pursuant to Section 1(a) hereof on a Trading Day prior to the opening of “regular trading hours” (as defined in Rule 600(b)(68) of Regulation NMS promulgated under the federal securities laws) on such Trading Day, (ii) at the option of the Holder, either (y) the Weighted Average Price on the Trading Day immediately preceding the date of the applicable Exercise Notice or (z) the Bid Price of the Common Stock as of the time of the Holder’s execution of the applicable Exercise Notice if such Exercise Notice is executed during “regular trading hours” on a Trading Day and is delivered within two (2) hours thereafter (including until two (2) hours after the close of “regular trading hours” on a Trading Day) pursuant to Section 1(a) hereof or (iii) the Closing Sale Price of the Common Stock on the date of the applicable Exercise Notice if the date of such Exercise Notice is a Trading Day and such Exercise Notice is both executed and delivered pursuant to Section 1(a) hereof after the close of “regular trading hours” on such Trading Day.

C= the Exercise Price then in effect for the applicable Warrant Shares at the time of such exercise.

If Warrant Shares are issued in such a cashless exercise, the Company acknowledges and agrees that in accordance with Section 3(a)(9) of the Securities Act of 1933, as amended, the Warrant Shares shall take on the characteristics of the Warrants being exercised, and the holding period of the Warrants being exercised may be tacked on to the holding period of the Warrant Shares. The Company agrees not to take any position contrary to this Section 1(d). Without limiting the rights of a Holder to receive Warrant Shares on a “cashless exercise,” and to receive the cash payments contemplated pursuant to Sections 1(c) and 4(b), in no event will the Company be required to net cash settle a Warrant exercise.

(e) Disputes. In the case of a dispute as to the determination of the Exercise Price or the arithmetic calculation of the Warrant Shares, the Company shall promptly issue to the Holder the number of Warrant Shares that are not disputed and resolve such dispute in accordance with Section 11.

(f) **Beneficial Ownership.** Notwithstanding anything to the contrary contained herein, the Company shall not effect the exercise of any portion of this Warrant, and the Holder shall not have the right to exercise any portion of this Warrant, pursuant to the terms and conditions of this Warrant and any such exercise shall be null and void and treated as if never made, to the extent that after giving effect to such exercise, the Holder together with the other Attribution Parties collectively would beneficially own in excess of 9.99% (the “**Maximum Percentage**”) of the number of shares of Common Stock outstanding immediately after giving effect to such exercise. For purposes of the foregoing sentence, the aggregate number of shares of Common Stock beneficially owned by the Holder and the other Attribution Parties shall include the number of shares of Common Stock held by the Holder and all other Attribution Parties plus the number of shares of Common Stock issuable upon exercise of this Warrant with respect to which the determination of such sentence is being made, but shall exclude the number of shares of Common Stock which would be issuable upon (A) exercise of the remaining, unexercised portion of this Warrant beneficially owned by the Holder or any of the other Attribution Parties and (B) exercise or conversion of the unexercised or unconverted portion of any other securities of the Company (including, without limitation, any convertible notes or convertible preferred stock or warrants, including the other Warrants) beneficially owned by the Holder or any other Attribution Party subject to a limitation on conversion or exercise analogous to the limitation contained in this Section 1(f). For purposes of this Section 1(f), beneficial ownership shall be calculated in accordance with Section 13(d) of the Securities Exchange Act of 1934, as amended (the “**1934 Act**”). For purposes of this Warrant, in determining the number of outstanding shares of Common Stock the Holder may acquire upon the exercise of this Warrant without exceeding the Maximum Percentage, the Holder may rely on the number of outstanding shares of Common Stock as reflected in (x) the Company's most recent Annual Report on Form 10-K, Quarterly Report on Form 10-Q and Current Reports on Form 8-K or other public filing with the Securities and Exchange Commission (the “**SEC**”), as the case may be, (y) a more recent public announcement by the Company or (z) any other written notice by the Company or the Transfer Agent setting forth the number of shares of Common Stock outstanding (the “**Reported Outstanding Share Number**”). If the Company receives an Exercise Notice from the Holder at a time when the actual number of outstanding shares of Common Stock is less than the Reported Outstanding Share Number, the Company shall (i) notify the Holder in writing of the number of shares of Common Stock then outstanding and, to the extent that such Exercise Notice would otherwise cause the Holder's beneficial ownership, as determined pursuant to this Section 1(f), to exceed the Maximum Percentage, the Holder must notify the Company of a reduced number of Warrant Shares to be purchased pursuant to such Exercise Notice (the number of shares by which such purchase is reduced, the “**Reduction Shares**”) and (ii) as soon as reasonably practicable, the Company shall return to the Holder any exercise price paid by the Holder for the Reduction Shares. For any reason at any time, upon the written or oral request of the Holder, the Company shall within one (1) Business Day confirm orally and in writing or by electronic mail to the Holder the number of shares of Common Stock then outstanding. In any case, the number of outstanding shares of Common Stock shall be determined after giving effect to the conversion or exercise of securities of the Company, including this Warrant, by the Holder and any other Attribution Party since the date as of which the Reported Outstanding Share Number was reported. In the event that the issuance of Common Stock to the Holder upon exercise of this Warrant results in the Holder and the other Attribution Parties being deemed to beneficially own, in the aggregate, more than the Maximum Percentage of the number of outstanding shares of Common Stock (as determined under Section 13(d) of the 1934 Act), the number of shares so issued by which the Holder's and the other Attribution Parties' aggregate beneficial ownership exceeds the Maximum Percentage (the “**Excess Shares**”) shall be deemed null and void and shall be cancelled ab initio, and the Holder shall not have the power to vote or to transfer the Excess Shares. As soon as reasonably practicable after the issuance of the Excess Shares has been deemed null and void, the Company shall return to the Holder the exercise price paid by the Holder for the Excess Shares. Upon delivery of a written notice to the Company, the Holder may from time to time increase or decrease the Maximum Percentage to any other percentage not in excess of 9.99% as specified in such notice; provided that (i) any such increase in the Maximum Percentage will not be effective until the sixty-first (61<sup>st</sup>) day after such notice is delivered to the Company and (ii) any such increase or decrease will apply only to the Holder and the other Attribution Parties and not to any other holder of Warrants that is not an Attribution Party of the Holder. For purposes of clarity, the shares of Common Stock issuable pursuant to the terms of this Warrant in excess of the Maximum Percentage shall not be deemed to be beneficially owned by the Holder for any purpose including for purposes of Section 13(d) or Rule 16a-1(a)(1) of the 1934 Act. No prior inability to exercise this Warrant pursuant to this paragraph shall have any effect on the applicability of the provisions of this paragraph with respect to any subsequent determination of exercisability. The provisions of this paragraph shall be construed and implemented in a manner otherwise than in strict conformity with the terms of this Section 1(f) to the extent necessary to correct this paragraph or any portion of this paragraph which may be defective or inconsistent with the intended beneficial ownership limitation contained in this Section 1(f) or to make changes or supplements necessary or desirable to properly give effect to such limitation. The limitation contained in this paragraph may not be waived and shall apply to a successor holder of this Warrant.

(g) Required Reserve Amount. So long as this Warrant remains outstanding, the Company shall at all times keep reserved for issuance under this Warrant a number of shares of Common Stock at least equal to 100% of the maximum number of shares of Common Stock as shall be necessary to satisfy the Company's obligation to issue shares of Common Stock under the Warrants then outstanding (without regard to any limitations on exercise) (the "**Required Reserve Amount**"); provided that at no time shall the number of shares of Common Stock reserved pursuant to this Section 1(g) be reduced other than in connection with any exercise of Warrants or such other event covered by Section 2(c) below. The Required Reserve Amount (including, without limitation, each increase in the number of shares so reserved) shall be allocated pro rata among the holders of the Warrants based on the number of shares of Common Stock issuable upon exercise of Warrants held by each holder thereof on the Issuance Date (without regard to any limitations on exercise) (the "**Authorized Share Allocation**"). In the event that a holder shall sell or otherwise transfer any of such holder's Warrants, each transferee shall be allocated a pro rata portion of such holder's Authorized Share Allocation. Any shares of Common Stock reserved and allocated to any Person which ceases to hold any Warrants shall be allocated to the remaining holders of Warrants, pro rata based on the number of shares of Common Stock issuable upon exercise of the Warrants then held by such holders thereof (without regard to any limitations on exercise).

(h) Insufficient Authorized Shares. If at any time while this Warrant remains outstanding the Company does not have a sufficient number of authorized and unreserved shares of Common Stock to satisfy its obligation to reserve for issuance the Required Reserve Amount (an "**Authorized Share Failure**"), then the Company shall promptly take all action reasonably necessary to increase the Company's authorized shares of Common Stock to an amount sufficient to allow the Company to reserve the Required Reserve Amount for this Warrant then outstanding. Without limiting the generality of the foregoing sentence, as soon as practicable after the date of the occurrence of an Authorized Share Failure, but in no event later than ninety (90) days after the occurrence of such Authorized Share Failure, the Company shall hold a meeting of its stockholders for the approval of an increase in the number of authorized shares of Common Stock. In connection with such meeting, the Company shall provide each stockholder with a proxy statement and shall use its reasonable best efforts to solicit its stockholders' approval of such increase in authorized shares of Common Stock and to cause its board of directors to recommend to the stockholders that they approve such proposal. Notwithstanding the foregoing, if any such time of an Authorized Share Failure, the Company is able to obtain the written consent of a majority of the shares of its issued and outstanding shares of Common Stock to approve the increase in the number of authorized shares of Common Stock, the Company may satisfy this obligation by obtaining such consent and submitting for filing with the SEC an Information Statement on Schedule 14C.



2. ADJUSTMENT OF EXERCISE PRICE AND NUMBER OF WARRANT SHARES. The Exercise Price and the number of Warrant Shares shall be adjusted from time to time as follows:

(a) Intentionally omitted.

(b) Voluntary Adjustment By Company. The Company may at any time during the term of this Warrant reduce the then current Exercise Price to any amount and for any period of time deemed appropriate by the Board of Directors of the Company.

(c) Adjustment Upon Subdivision or Combination of Common Stock. If the Company at any time on or after the Subscription Date subdivides (by any stock split, stock dividend, recapitalization or otherwise) one or more classes of its outstanding shares of Common Stock into a greater number of shares, the Exercise Price in effect immediately prior to such subdivision will be proportionately reduced and the number of Warrant Shares will be proportionately increased. If the Company at any time on or after the Subscription Date combines (by combination, reverse stock split or otherwise) one or more classes of its outstanding shares of Common Stock into a smaller number of shares, the Exercise Price in effect immediately prior to such combination will be proportionately increased and the number of Warrant Shares will be proportionately decreased. Any adjustment under this Section 2(c) shall become effective at the close of business on the date the subdivision or combination becomes effective.

3. RIGHTS UPON DISTRIBUTION OF ASSETS. In addition to any adjustments pursuant to Section 2 above, if, on or after the Subscription Date and on or prior to the Expiration Date, the Company shall declare or make any dividend or other distribution of its assets (or rights to acquire its assets) to holders of shares of Common Stock, by way of return of capital or otherwise (including, without limitation, any distribution of cash, stock or other securities, property, options, evidence of indebtedness or any other assets by way of a dividend, spin off, reclassification, corporate rearrangement, scheme of arrangement or other similar transaction) (a “**Distribution**”), at any time after the issuance of this Warrant, then, in each such case, the Holder shall be entitled to participate in such Distribution to the same extent that the Holder would have participated therein if the Holder had held the number of shares of Common Stock acquirable upon complete exercise of this Warrant (without regard to any limitations or restrictions on exercise of this Warrant, including without limitation, the Maximum Percentage) immediately before the date on which a record is taken for such Distribution, or, if no such record is taken, the date as of which the record holders of shares of Common Stock are to be determined for the participation in such Distribution (provided, however, that to the extent that the Holder's right to participate in any such Distribution would result in the Holder and the other Attribution Parties exceeding the Maximum Percentage, then the Holder shall not be entitled to participate in such Distribution to such extent (and shall not be entitled to beneficial ownership of such shares of Common Stock as a result of such Distribution (and beneficial ownership) to such extent) and the portion of such Distribution shall be held in abeyance for the benefit of the Holder until such time or times as its right thereto would not result in the Holder and the other Attribution Parties exceeding the Maximum Percentage, at which time or times the Holder shall be granted such Distribution (and any Distributions declared or made on such initial Distribution or on any subsequent Distribution held similarly in abeyance) to the same extent as if there had been no such limitation).

4. PURCHASE RIGHTS; FUNDAMENTAL TRANSACTIONS.

(a) Purchase Rights. In addition to any adjustments pursuant to Section 2 above, if at any time on or after the Subscription Date and on or prior to the Expiration Date the Company grants, issues or sells any Options, Convertible Securities or rights to purchase stock, warrants, securities or other property pro rata to the record holders of any class of Common Stock (the "**Purchase Rights**"), then the Holder will be entitled to acquire, upon the terms applicable to such Purchase Rights, the aggregate Purchase Rights which the Holder could have acquired if the Holder had held the number of shares of Common Stock acquirable upon complete exercise of this Warrant (without regard to any limitations or restrictions on exercise of this Warrant, including without limitation, the Maximum Percentage) immediately before the date on which a record is taken for the grant, issuance or sale of such Purchase Rights, or, if no such record is taken, the date as of which the record holders of Common Stock are to be determined for the grant, issuance or sale of such Purchase Rights (provided, however, that to the extent that the Holder's right to participate in any such Purchase Right would result in the Holder and the other Attribution Parties exceeding the Maximum Percentage, then the Holder shall not be entitled to participate in such Purchase Right to such extent (and shall not be entitled to beneficial ownership of such Common Stock as a result of such Purchase Right (and beneficial ownership) to such extent) and such Purchase Right to such extent shall be held in abeyance for the benefit of the Holder until such time or times as its right thereto would not result in the Holder and the other Attribution Parties exceeding the Maximum Percentage, at which time or times the Holder shall be granted such right (and any Purchase Right granted, issued or sold on such initial Purchase Right or on any subsequent Purchase Right to be held similarly in abeyance) to the same extent as if there had been no such limitation).

(b) **Fundamental Transaction.** The Company shall not enter into or be party to a Fundamental Transaction unless the Successor Entity assumes in writing all of the obligations of the Company under this Warrant in accordance with the provisions of this Section 4(b), including agreements to deliver to the Holder in exchange for this Warrant a security of the Successor Entity evidenced by a written instrument substantially similar in form and substance to this Warrant, including, without limitation, which is exercisable for a corresponding number of shares of capital stock equivalent to the shares of Common Stock acquirable and receivable upon exercise of this Warrant (without regard to any limitations on the exercise of this Warrant) prior to such Fundamental Transaction, and with an exercise price which applies the exercise price hereunder to such shares of capital stock (but taking into account the relative value of the shares of Common Stock pursuant to such Fundamental Transaction and the value of such shares of capital stock, such adjustments to the number of shares of capital stock and such exercise price being for the purpose of protecting the economic value of this Warrant immediately prior to the consummation of such Fundamental Transaction). Upon the consummation of each Fundamental Transaction, the Successor Entity shall succeed to, and be substituted for the Company (so that from and after the date of the applicable Fundamental Transaction, the provisions of this Warrant and the other Transaction Documents referring to the “Company” shall refer instead to the Successor Entity), and may exercise every right and power of the Company and shall assume all of the obligations of the Company under this Warrant with the same effect as if such Successor Entity had been named as the Company herein. Upon consummation of each Fundamental Transaction, the Successor Entity shall deliver to the Holder confirmation that there shall be issued upon exercise of this Warrant at any time after the consummation of the applicable Fundamental Transaction, in lieu of the shares of Common Stock (or other securities, cash, assets or other property (except such items still issuable under Sections 3 and 4(a) above, which shall continue to be receivable thereafter)) issuable upon the exercise of this Warrant prior to the applicable Fundamental Transaction, such shares of common stock (or its equivalent) of the Successor Entity (including its Parent Entity) which the Holder would have been entitled to receive upon the happening of the applicable Fundamental Transaction had this Warrant been exercised immediately prior to the applicable Fundamental Transaction (without regard to any limitations on the exercise of this Warrant), as adjusted in accordance with the provisions of this Warrant. Notwithstanding the foregoing, and without limiting Section 1(f) hereof, the Holder may elect, at its sole option, by delivery of written notice to the Company to waive this Section 4(b) to permit the Fundamental Transaction without the assumption of this Warrant. In addition to and not in substitution for any other rights hereunder, prior to the consummation of each Fundamental Transaction pursuant to which holders of shares of Common Stock are entitled to receive securities or other assets with respect to or in exchange for shares of Common Stock (a “**Corporate Event**”), the Company shall make appropriate provision to insure that the Holder will thereafter have the right to receive upon an exercise of this Warrant at any time after the consummation of the applicable Fundamental Transaction but prior to the Expiration Date, in lieu of the shares of the Common Stock (or other securities, cash, assets or other property (except such items still issuable under Sections 3 and 4(a) above, which shall continue to be receivable thereafter)) issuable upon the exercise of the Warrant prior to such Fundamental Transaction, such shares of stock, securities, cash, assets or any other property whatsoever (including warrants or other purchase or subscription rights) (collectively, the “**Corporate Event Consideration**”) which the Holder would have been entitled to receive upon the happening of the applicable Fundamental Transaction had this Warrant been exercised immediately prior to the applicable Fundamental Transaction (without regard to any limitations on the exercise of this Warrant). The provision made pursuant to the preceding sentence shall be in a form and substance reasonably satisfactory to the Requisite Holders. The provisions of this Section 4(b) shall apply similarly and equally to successive Fundamental Transactions and Corporate Events.

5. **NONCIRCUMVENTION.** The Company hereby covenants and agrees that the Company will not, by amendment of its Certificate of Incorporation or Bylaws, or through any reorganization, transfer of assets, consolidation, merger, scheme of arrangement, dissolution, issuance or sale of securities, or any other voluntary action, avoid or seek to avoid the observance or performance of any of the terms of this Warrant, and will at all times in good faith carry out all of the provisions of this Warrant and take all action as may be required to protect the rights of the Holder. Without limiting the generality of the foregoing, the Company (i) shall not increase the par value of any shares of Common Stock receivable upon the exercise of this Warrant above the Exercise Price then in effect, (ii) shall take all such actions as may be necessary or appropriate in order that the Company may validly and legally issue fully paid and nonassessable shares of Common Stock upon the exercise of this Warrant, and (iii) shall, so long as any of the Warrants are outstanding, take all action necessary to reserve and keep available out of its authorized and unissued shares of Common Stock, solely for the purpose of effecting the exercise of the Warrants, the number of shares of Common Stock as shall from time to time be necessary to effect the exercise of the Warrants then outstanding (without regard to any limitations on exercise).

6. WARRANT HOLDER NOT DEEMED A STOCKHOLDER. Except as otherwise specifically provided herein, the Holder, solely in such Person's capacity as a holder of this Warrant, shall not be entitled to vote or receive dividends or be deemed the holder of capital stock of the Company for any purpose, nor shall anything contained in this Warrant be construed to confer upon the Holder, solely in such Person's capacity as the Holder of this Warrant, any of the rights of a stockholder of the Company or any right to vote, give or withhold consent to any corporate action (whether any reorganization, issue of stock, reclassification of stock, consolidation, merger, conveyance or otherwise), receive notice of meetings, receive dividends or subscription rights, or otherwise, prior to the issuance to the Holder of the Warrant Shares which such Person is then entitled to receive upon the due exercise of this Warrant. In addition, nothing contained in this Warrant shall be construed as imposing any liabilities on the Holder to purchase any securities (upon exercise of this Warrant or otherwise) or as a stockholder of the Company, whether such liabilities are asserted by the Company or by creditors of the Company. Notwithstanding this Section 6, the Company shall provide the Holder with copies of the same notices and other information given to the stockholders of the Company generally, contemporaneously with the giving thereof to the stockholders.

7. REISSUANCE OF WARRANTS.

(a) Transfer of Warrant. If this Warrant is to be transferred, the Holder shall surrender this Warrant to the Company, whereupon the Company will forthwith issue and deliver upon the order of the Holder a new Warrant (in accordance with Section 7(d)), registered as the Holder may request, representing the right to purchase the number of Warrant Shares being transferred by the Holder and, if less than the total number of Warrant Shares then underlying this Warrant is being transferred, a new Warrant (in accordance with Section 7(d)) to the Holder representing the right to purchase the number of Warrant Shares not being transferred.

(b) Lost, Stolen or Mutilated Warrant. Upon receipt by the Company of evidence reasonably satisfactory to the Company of the loss, theft, destruction or mutilation of this Warrant, and, in the case of loss, theft or destruction, of any indemnification undertaking by the Holder to the Company in customary form (but without the obligation to post a bond) and, in the case of mutilation, upon surrender and cancellation of this Warrant, the Company shall execute and deliver to the Holder a new Warrant (in accordance with Section 7(d)) representing the right to purchase the Warrant Shares then underlying this Warrant.

(c) Exchangeable for Multiple Warrants. This Warrant is exchangeable, upon the surrender hereof by the Holder at the principal office of the Company, for a new Warrant or Warrants (in accordance with Section 7(d)) representing in the aggregate the right to purchase the number of Warrant Shares then underlying this Warrant, and each such new Warrant will represent the right to purchase such portion of such Warrant Shares as is designated by the Holder at the time of such surrender.

(d) Issuance of New Warrants. Whenever the Company is required to issue a new Warrant pursuant to the terms of this Warrant, such new Warrant (i) shall be of like tenor with this Warrant, (ii) shall represent, as indicated on the face of such new Warrant, the right to purchase the Warrant Shares then underlying this Warrant (or in the case of a new Warrant being issued pursuant to Section 7(a) or Section 7(c), the Warrant Shares designated by the Holder which, when added to the number of shares of Common Stock underlying the other new Warrants issued in connection with such issuance, does not exceed the number of Warrant Shares then underlying this Warrant), (iii) shall have an issuance date, as indicated on the face of such new Warrant which is the same as the Issuance Date, and (iv) shall have the same rights and conditions as this Warrant.

8. NOTICES. Whenever notice is required to be given under this Warrant, including, without limitation, an Exercise Notice, unless otherwise provided herein, such notice shall be given in writing, (i) if delivered (a) from within the domestic United States, by first-class registered or certified airmail, or nationally recognized overnight express courier, postage prepaid, electronic mail or by facsimile or (b) from outside the United States, by International Federal Express, electronic mail or facsimile, and (ii) will be deemed given (A) if delivered by first-class registered or certified mail domestic, three (3) Business Days after so mailed, (B) if delivered by nationally recognized overnight carrier, one (1) Business Day after so mailed, (C) if delivered by International Federal Express, two (2) Business Days after so mailed and (D) at the time of transmission, if delivered by electronic mail to each of the email addresses specified in this Section 8 prior to 5:00 p.m. (New York time) on a Trading Day, (E) the next Trading Day after the date of transmission, if delivered by electronic mail to each of the email addresses specified in this Section 8 on a day that is not a Trading Day or later than 5:00 p.m. (New York time) on any Trading Day and (F) if delivered by facsimile, upon electronic confirmation of delivery of such facsimile, and will be delivered and addressed as follows:

(i) if to the Company, to:

Bionano Genomics, Inc.  
9540 Towne Centre Drive  
Suite 100  
San Diego, CA 92121  
Attention: R. Erik Holmlin, President and Chief Executive Officer  
Facsimile: (858) 888-7601  
Email: Eholmlin@bionanogenomics.com

(ii) if to the Holder, at such address or other contact information delivered by the Holder to Company or as is on the books and records of the Company.

The Company shall provide the Holder with prompt written notice of all actions taken pursuant to this Warrant, including in reasonable detail a description of such action and the reason therefor. Without limiting the generality of the foregoing, the Company will give written notice to the Holder (i) immediately upon any adjustment of the Exercise Price, setting forth in reasonable detail, and certifying, the calculation of such adjustment and (ii) at least fifteen (15) days prior to the date on which the Company closes its books or takes a record (A) with respect to any dividend or distribution upon the shares of Common Stock, (B) with respect to any grants, issuances or sales of any Options, Convertible Securities or rights to purchase stock, warrants, securities or other property to holders of shares of Common Stock or (C) for determining rights to vote with respect to any Fundamental Transaction, dissolution or liquidation; provided in each case that such information shall be made known to the public prior to or in conjunction with such notice being provided to the Holder. It is expressly understood and agreed that the time of exercise specified by the Holder in each Exercise Notice shall be definitive and may not be disputed or challenged by the Company.

9. AMENDMENT AND WAIVER. Except as otherwise provided herein, the provisions of this Warrant may be amended or waived and the Company may take any action herein prohibited, or omit to perform any act herein required to be performed by it, only if the Company has obtained the written consent of the Holder.

10. GOVERNING LAW; JURISDICTION; JURY TRIAL. This Warrant shall be governed by and construed and enforced in accordance with, and all questions concerning the construction, validity, interpretation and performance of this Warrant shall be governed by, the internal laws of the State of New York, without giving effect to any choice of law or conflict of law provision or rule (whether of the State of New York or any other jurisdictions) that would cause the application of the laws of any jurisdictions other than the State of New York. The Company hereby irrevocably submits to the exclusive jurisdiction of the state and federal courts sitting in The City of New York, Borough of Manhattan, for the adjudication of any dispute hereunder or in connection herewith or with any transaction contemplated hereby or discussed herein, and hereby irrevocably waives, and agrees not to assert in any suit, action or proceeding, any claim that it is not personally subject to the jurisdiction of any such court, that such suit, action or proceeding is brought in an inconvenient forum or that the venue of such suit, action or proceeding is improper. The Company hereby irrevocably waives personal service of process and consents to process being served in any such suit, action or proceeding by mailing a copy thereof to the Company at the address set forth in Section 8(i) above or such other address as the Company subsequently delivers to the Holder and agrees that such service shall constitute good and sufficient service of process and notice thereof. Nothing contained herein shall be deemed to limit in any way any right to serve process in any manner permitted by law. Nothing contained herein shall be deemed or operate to preclude the Holder from bringing suit or taking other legal action against the Company in any other jurisdiction to collect on the Company's obligations to the Holder, to realize on any collateral or any other security for such obligations, or to enforce a judgment or other court ruling in favor of the Holder. If either party shall commence an action, suit or proceeding to enforce any provisions of this Warrant, the prevailing party in such action, suit or proceeding shall be reimbursed by the other party for their reasonable attorneys' fees and other costs and expenses incurred with the investigation, preparation and prosecution of such action or proceeding. **THE COMPANY HEREBY IRREVOCABLY WAIVES ANY RIGHT IT MAY HAVE, AND AGREES NOT TO REQUEST, A JURY TRIAL FOR THE ADJUDICATION OF ANY DISPUTE HEREUNDER OR IN CONNECTION WITH OR ARISING OUT OF THIS WARRANT OR ANY TRANSACTION CONTEMPLATED HEREBY.**

11. DISPUTE RESOLUTION. In the case of a dispute as to the determination of the Exercise Price or the arithmetic calculation of the Warrant Shares, the Company shall submit the disputed determinations or arithmetic calculations via facsimile or electronic mail within two (2) Business Days of receipt of the Exercise Notice or other event giving rise to such dispute, as the case may be, to the Holder. If the Holder and the Company are unable to agree upon such determination or calculation of the Exercise Price or the Warrant Shares within three (3) Business Days of such disputed determination or arithmetic calculation being submitted to the Holder, then the Company shall, within two (2) Business Days submit via facsimile or electronic mail (a) the disputed determination of the Exercise Price to an independent, reputable investment bank selected by the Company and approved by the Holder or (b) the disputed arithmetic calculation of the Warrant Shares to the Company's independent, outside accountant. The Company shall cause at its expense the investment bank or the accountant, as the case may be, to perform the determinations or calculations and notify the Company and the Holder of the results no later than ten (10) Business Days from the time it receives the disputed determinations or calculations. Such investment bank's or accountant's determination or calculation, as the case may be, shall be binding upon all parties absent demonstrable error.

12. REMEDIES, OTHER OBLIGATIONS, BREACHES AND INJUNCTIVE RELIEF. The remedies provided in this Warrant shall be cumulative and in addition to all other remedies available under this Warrant and any other Transaction Documents, at law or in equity (including a decree of specific performance and/or other injunctive relief), and nothing herein shall limit the right of the Holder to pursue actual damages for any failure by the Company to comply with the terms of this Warrant. The Company acknowledges that a breach by it of its obligations hereunder will cause irreparable harm to the Holder and that the remedy at law for any such breach may be inadequate. The Company therefore agrees that, in the event of any such breach or threatened breach, the holder of this Warrant shall be entitled, in addition to all other available remedies, to an injunction restraining any breach, without the necessity of showing economic loss and without any bond or other security being required.

13. TRANSFER. Subject to compliance with any applicable securities laws and the provisions of Section 2.3 of the Purchase Agreement, this Warrant and the Warrant Shares may be offered for sale, sold, transferred, pledged or assigned without the consent of the Company.

14. SEVERABILITY; CONSTRUCTION; HEADINGS. If any provision of this Warrant is prohibited by law or otherwise determined to be invalid or unenforceable by a court of competent jurisdiction, the provision that would otherwise be prohibited, invalid or unenforceable shall be deemed amended to apply to the broadest extent that it would be valid and enforceable, and the invalidity or unenforceability of such provision shall not affect the validity of the remaining provisions of this Warrant so long as this Warrant as so modified continues to express, without material change, the original intentions of the parties as to the subject matter hereof and the prohibited nature, invalidity or unenforceability of the provision(s) in question does not substantially impair the respective expectations or reciprocal obligations of the parties or the practical realization of the benefits that would otherwise be conferred upon the parties. The parties will endeavor in good faith negotiations to replace the prohibited, invalid or unenforceable provision(s) with a valid provision(s), the effect of which comes as close as possible to that of the prohibited, invalid or unenforceable provision(s). This Warrant shall be deemed to be jointly drafted by the Company and the Holder and shall not be construed against any Person as the drafter hereof. The headings of this Warrant are for convenience of reference and shall not form part of, or affect the interpretation of, this Warrant.

15. **DISCLOSURE.** Upon receipt or delivery by the Company of any notice in accordance with the terms of this Warrant, unless the Company has in good faith determined that the matters relating to such notice do not constitute material, nonpublic information relating to the Company or its subsidiaries, the Company shall contemporaneously with any such receipt or delivery publicly disclose such material, nonpublic information on a Current Report on Form 8-K or otherwise. In the event that the Company believes that a notice contains material, nonpublic information relating to the Company or its subsidiaries, the Company so shall indicate to such Holder contemporaneously with delivery of such notice, and in the absence of any such indication, the Holder shall be allowed to presume that all matters relating to such notice do not constitute material, nonpublic information relating to the Company or its subsidiaries.

16. **CERTAIN DEFINITIONS.** For purposes of this Warrant, the following terms shall have the following meanings:

(a) **“Affiliate”** means, with respect to any Person, any other Person that directly or indirectly controls, is controlled by, or is under common control with, such Person, it being understood for purposes of this definition that “control” of a Person means the power directly or indirectly either to vote 10% or more of the stock having ordinary voting power for the election of directors of such Person or direct or cause the direction of the management and policies of such Person whether by contract or otherwise.

(b) **“Attribution Parties”** means, collectively, the following Persons and entities: (i) any investment vehicle, including, any funds, feeder funds or managed accounts, currently, or from time to time after the Subscription Date, directly or indirectly managed or advised by the Holder's investment manager or any of its Affiliates or principals, (ii) any direct or indirect Affiliates of the Holder or any of the foregoing, (iii) any Person acting or who could be deemed to be acting as a Group together with the Holder or any of the foregoing and (iv) any other Persons whose beneficial ownership of the Company's Common Stock would or could be aggregated with the Holder's and the other Attribution Parties for purposes of Section 13(d) of the 1934 Act. For clarity, the purpose of the foregoing is to subject collectively the Holder and all other Attribution Parties to the Maximum Percentage.

(c) **“Bid Price”** means, for any security as of the particular time of determination, the bid price for such security on the Principal Market as reported by Bloomberg as of such time of determination, or, if the Principal Market is not the principal securities exchange or trading market for such security, the bid price of such security on the principal securities exchange or trading market where such security is listed or traded as reported by Bloomberg as of such time of determination, or if the foregoing does not apply, the bid price of such security in the over-the-counter market on the electronic bulletin board for such security as reported by Bloomberg as of such time of determination, or, if no bid price is reported for such security by Bloomberg as of such time of determination, the average of the bid prices of any market makers for such security as reported on the Pink Open Market as of such time of determination. If the Bid Price cannot be calculated for a security as of the particular time of determination on any of the foregoing bases, the Bid Price of such security as of such time of determination shall be the fair market value as mutually determined by the Company and the Holder. If the Company and the Holder are unable to agree upon the fair market value of such security, then such dispute shall be resolved in accordance with the procedures in Section 11. All such determinations shall be appropriately adjusted for any stock dividend, stock split, stock combination or other similar transaction during such period.



(d) **“Bloomberg”** means Bloomberg Financial Markets.

(e) **“Business Day”** means any day other than Saturday, Sunday or other day on which commercial banks in The City of New York are authorized or required by law to remain closed.

(f) **“Change of Control”** means any Fundamental Transaction other than (i) any reorganization, recapitalization or reclassification of the Common Stock in which holders of the Company’s voting power immediately prior to such reorganization, recapitalization or reclassification continue after such reorganization, recapitalization or reclassification to hold publicly traded securities and, directly or indirectly, are, in all material respect, the holders of the voting power of the surviving entity (or entities with the authority or voting power to elect the members of the board of directors (or their equivalent if other than a corporation) of such entity or entities) after such reorganization, recapitalization or reclassification, (ii) pursuant to a migratory merger effected solely for the purpose of changing the jurisdiction of incorporation of the Company or (iii) a merger in connection with a bona fide acquisition by the Company of any Person in which (x) the gross consideration paid, directly or indirectly, by the Company in such acquisition is not greater than 20% of the Company’s market capitalization as calculated on the date of the consummation of such merger and (y) such merger does not contemplate a change to the identity of a majority of the board of directors of the Company. Notwithstanding anything herein to the contrary, any transaction or series of transactions that, directly or indirectly, results in the Company or the Successor Entity not having Common Stock or common stock, as applicable, registered under the 1934 Act and listed on an Eligible Market shall be deemed a Change of Control.

(g) **“Closing Bid Price”** and **“Closing Sale Price”** means, for any security as of any date, the last closing bid price and last closing trade price, respectively, for such security on the Principal Market, as reported by Bloomberg, or, if the Principal Market begins to operate on an extended hours basis and does not designate the closing bid price or the closing trade price, as the case may be, then the last bid price or the last trade price, respectively, of such security prior to 4:00:00 p.m., New York time, as reported by Bloomberg, or, if the Principal Market is not the principal securities exchange or trading market for such security, the last closing bid price or last trade price, respectively, of such security on the principal securities exchange or trading market where such security is listed or traded as reported by Bloomberg, or if the foregoing do not apply, the last closing bid price or last trade price, respectively, of such security in the over-the-counter market on the electronic bulletin board for such security as reported by Bloomberg, or, if no closing bid price or last trade price, respectively, is reported for such security by Bloomberg, the average of the bid prices, or the ask prices, respectively, of any market makers for such security as reported in the OTC Link or on the Pink Open Market. If the Closing Bid Price or the Closing Sale Price cannot be calculated for a security on a particular date on any of the foregoing bases, the Closing Bid Price or the Closing Sale Price, as the case may be, of such security on such date shall be the fair market value as mutually determined by the Company and the Holder. If the Company and the Holder are unable to agree upon the fair market value of such security, then such dispute shall be resolved pursuant to Section 11. All such determinations to be appropriately adjusted for any stock dividend, stock split, stock combination, reclassification or other similar transaction during the applicable calculation period.

(h) **“Common Stock”** means (i) the Company's Common Stock, par value \$0.0001 per share, and (ii) any capital stock into which such Common Stock shall have been changed or any capital stock resulting from a reclassification of such Common Stock.

(i) **“Convertible Securities”** means any stock or securities (other than Options) directly or indirectly convertible into or exercisable or exchangeable for shares of Common Stock.

(j) **“Eligible Market”** means The Nasdaq Capital Market, the NYSE American LLC, The Nasdaq Global Select Market, The Nasdaq Global Market or The New York Stock Exchange, Inc.

(k) **“Expiration Date”** means the date sixty (60) months after the Initial Exercisability Date or, if such date falls on a day other than a Business Day or on which trading does not take place on the Principal Market (a **“Holiday”**), the next day that is not a Holiday.

(l) **“Fundamental Transaction”** means (A) that the Company shall, directly or indirectly, including through subsidiaries, Affiliates or otherwise, in one or more related transactions, (i) consolidate or merge with or into (whether or not the Company is the surviving corporation) another Subject Entity, or (ii) sell, assign, transfer, convey or otherwise dispose of all or substantially all of the properties or assets of the Company or any of its “significant subsidiaries” (as defined in Rule 1-02 of Regulation S-X) to one or more Subject Entities, or (iii) make, or allow one or more Subject Entities to make, or allow the Company to be subject to or have its shares of Common Stock be subject to or party to one or more Subject Entities making, a purchase, tender or exchange offer that is accepted by the holders of at least either (x) 50% of the outstanding shares of Common Stock, (y) 50% of the outstanding shares of Common Stock calculated as if any shares of Common Stock held by all Subject Entities making or party to, or Affiliated with any Subject Entities making or party to, such purchase, tender or exchange offer were not outstanding; or (z) such number of shares of Common Stock such that all Subject Entities making or party to, or Affiliated with any Subject Entity making or party to, such purchase, tender or exchange offer, become collectively the beneficial owners (as defined in Rule 13d-3 under the 1934 Act) of at least 50% of the outstanding shares of Common Stock, or (iv) consummate a stock purchase agreement or other business combination (including, without limitation, a reorganization, recapitalization, spin-off or scheme of arrangement) with one or more Subject Entities whereby all such Subject Entities, individually or in the aggregate, acquire, either (x) at least 50% of the outstanding shares of Common Stock, (y) at least 50% of the outstanding shares of Common Stock calculated as if any shares of Common Stock held by all the Subject Entities making or party to, or Affiliated with any Subject Entity making or party to, such stock purchase agreement or other business combination were not outstanding; or (z) such number of shares of Common Stock such that the Subject Entities become collectively the beneficial owners (as defined in Rule 13d-3 under the 1934 Act) of at least 50% of the outstanding shares of Common Stock, or (v) reorganize, recapitalize or reclassify its shares of Common Stock, (B) that the Company shall, directly or indirectly, including through subsidiaries, Affiliates or otherwise, in one or more related transactions, allow any Subject Entity individually or the Subject Entities in the aggregate to be or become the “beneficial owner” (as defined in Rule 13d-3 under the 1934 Act), directly or indirectly, whether through acquisition, purchase, assignment, conveyance, tender, tender offer, exchange, reduction in outstanding shares of Common Stock, merger, consolidation, business combination, reorganization, recapitalization, spin-off, scheme of arrangement, reorganization, recapitalization or reclassification or otherwise in any manner whatsoever, of either (x) at least 50% of the aggregate ordinary voting power represented by issued and outstanding shares of Common Stock, (y) at least 50% of the aggregate ordinary voting power represented by issued and outstanding shares of Common Stock not held by all such Subject Entities as of the Subscription Date calculated as if any shares of Common Stock held by all such Subject Entities were not outstanding, or (z) a percentage of the aggregate ordinary voting power represented by issued and outstanding shares of Common Stock or other equity securities of the Company sufficient to allow such Subject Entities to effect a statutory short form merger or other transaction requiring other stockholders of the Company to surrender their Common Stock without approval of the stockholders of the Company or (C) directly or indirectly, including through subsidiaries, Affiliates or otherwise, in one or more related transactions, the issuance of or the entering into any other instrument or transaction structured in a manner to circumvent, or that circumvents, the intent of this definition in which case this definition shall be construed and implemented in a manner otherwise than in strict conformity with the terms of this definition to the extent necessary to correct this definition or any portion of this definition which may be defective or inconsistent with the intended treatment of such instrument or transaction.

(m) **“Group”** means a “group” as that term is used in Section 13(d) of the 1934 Act and as defined in Rule 13d-5 thereunder.

(n) **“Options”** means any rights, warrants or options to subscribe for or purchase shares of Common Stock or Convertible Securities.

(o) **“Parent Entity”** of a Person means an entity that, directly or indirectly, controls the applicable Person, including such entity whose common stock or equivalent equity security is quoted or listed on an Eligible Market (or, if so elected by the Holder, any other market, exchange or quotation system), or, if there is more than one such Person or such entity, the Person or such entity designated by the Holder or in the absence of such designation, such Person or entity with the largest public market capitalization as of the date of consummation of the Fundamental Transaction or Change of Control.

(p) **“Person”** means an individual, a limited liability company, a partnership, a joint venture, a corporation, a trust, an unincorporated organization, any other entity and a government or any department or agency thereof.

(q) **“Principal Market”** means The Nasdaq Capital Market.

(r) **“Required Holders”** means the holders of the Warrants representing a majority of the shares of Common Stock underlying the Warrants then outstanding.

(s) **“Standard Settlement Period”** means the standard settlement period, expressed in a number of Trading Days, for the Company’s primary trading market or quotation system with respect to the Common Stock that is in effect on the date of receipt of an applicable Exercise Notice.

(t) **“Subject Entity”** means any Person, Persons or Group or any Affiliate or associate of any such Person, Persons or Group.

(u) **“Successor Entity”** means one or more Person or Persons (or, if so elected by the Holder, the Company or Parent Entity) formed by, resulting from or surviving any Fundamental Transaction or Change of Control or one or more Person or Persons (or, if so elected by the Holder, the Company or the Parent Entity) with which such Fundamental Transaction or Change of Control shall have been entered into.

(v) **“Trading Day”** means any day on which the Common Stock is traded on the Principal Market, or, if the Principal Market is not the principal trading market for the Common Stock, then on the principal securities exchange or securities market on which the Common Stock is then traded.

(w) **“Transaction Documents”** means any agreement entered into by and between the Company and the Holder, as applicable.

(x) **“Weighted Average Price”** means, for any security as of any date, the dollar volume-weighted average price for such security on the Principal Market during the period beginning at 9:30:01 a.m., New York time (or such other time as the Principal Market publicly announces is the official open of trading), and ending at 4:00:00 p.m., New York time (or such other time as the Principal Market publicly announces is the official close of trading), as reported by Bloomberg through its “Volume at Price” function or, if the foregoing does not apply, the dollar volume-weighted average price of such security in the over-the-counter market on the electronic bulletin board for such security during the period beginning at 9:30:01 a.m., New York time (or such other time as such market publicly announces is the official open of trading), and ending at 4:00:00 p.m., New York time (or such other time as such market publicly announces is the official close of trading), as reported by Bloomberg, or, if no dollar volume-weighted average price is reported for such security by Bloomberg for such hours, the average of the highest Closing Bid Price and the lowest closing ask price of any of the market makers for such security as reported in the OTC Link or on the Pink Open Market. If the Weighted Average Price cannot be calculated for a security on a particular date on any of the foregoing bases, the Weighted Average Price of such security on such date shall be the fair market value as mutually determined by the Company and the Holder. If the Company and the Holder are unable to agree upon the fair market value of such security, then such dispute shall be resolved pursuant to Section 11 with the term “Weighted Average Price” being substituted for the term “Exercise Price.” All such determinations shall be appropriately adjusted for any stock dividend, stock split, stock combination, reclassification or other similar transaction during the applicable calculation period.

**[Signature Page Follows]**

**IN WITNESS WHEREOF**, the Company has caused this Warrant to Purchase Common Stock to be duly executed as of the Issuance Date set out above.

**Bionano Genomics, Inc.**

By: \_\_\_\_\_

Name: R. Erik Holmlin, Ph.D.

Title: President and Chief Executive Officer

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EXERCISE NOTICE

TO BE EXECUTED BY THE REGISTERED HOLDER TO EXERCISE THIS  
WARRANT TO PURCHASE COMMON STOCK

BIONANO GENOMICS, INC.

The undersigned holder hereby exercises the right to purchase \_\_\_\_\_ shares of Common Stock (“**Warrant Shares**”) of Bionano Genomics, Inc., a company organized under the laws of Delaware (the “**Company**”), evidenced by the attached Warrant to Purchase Common Stock (the “**Warrant**”). Capitalized terms used herein and not otherwise defined shall have the respective meanings set forth in the Warrant.

1. Form of Exercise Price. The Holder intends that payment of the Exercise Price shall be made as:

\_\_\_\_\_ a “Cash Exercise” with respect to \_\_\_\_\_ Warrant Shares; and/or

\_\_\_\_\_ a “Cashless Exercise” with respect to \_\_\_\_\_ Warrant Shares.

2. Payment of Exercise Price. In the event that the holder has elected a Cash Exercise with respect to some or all of the Warrant Shares to be issued pursuant hereto, the holder shall pay the Aggregate Exercise Price in the sum of \$ \_\_\_\_\_ to the Company in accordance with the terms of the Warrant.

3. Delivery of Warrant Shares. The Company shall deliver to the holder \_\_\_\_\_ Warrant Shares in accordance with the terms of the Warrant.

Date: \_\_\_\_\_ , \_\_\_\_\_

\_\_\_\_\_  
Name of Registered Holder

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

\_\_\_\_\_

**ACKNOWLEDGMENT**

The Company hereby acknowledges this Exercise Notice and hereby directs American Stock Transfer & Trust Company, LLC to issue the above indicated number of shares of Common Stock on or prior to the applicable Share Delivery Date.

**Bionano Genomics, Inc.**

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

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