

PROSPECTUS SUPPLEMENT
(To Prospectus dated May 10, 2023)



Up to \$45,000,000 of Senior Secured Convertible Notes due 2025

Warrants to Purchase Up to 21,660,650 Shares of our Common Stock

We entered into a Securities Purchase Agreement, dated October 11, 2023 (the "*Purchase Agreement*") with High Trail Special Situations LLC (the "*Purchaser*"), relating to our offering of (i) \$45,000,000 aggregate principal amount of senior secured convertible notes due 2025 (the "*Notes*") and (ii) warrants (the "*Warrants*") to purchase up to 21,660,650 shares of our common stock, \$0.0001 par value per share ("*common stock*"), offered by this prospectus supplement and the accompanying prospectus. The Warrants are immediately exercisable at an exercise price of \$3.1855 per share, and will expire five years from the date of issuance. This offering also relates to the offering of the shares of our common stock issuable upon conversion of the Notes and exercise of the Warrants (the shares issuable upon conversion of the Notes, the "*Note Shares*," and the shares issuable upon exercise of the Warrants, the "*Warrant Shares*," and collectively, the "*Shares*"). The Purchaser is also purchasing \$35,000,000 aggregate principal amount of senior secured convertible notes due 2025 (the "*Private Placement Notes*") in a concurrent private placement (the "*Concurrent Private Placement*") exempt from the registration requirements of the Securities Act of 1933, as amended (the "*Securities Act*"), on substantially the same terms as the Notes being offered by this prospectus supplement and the accompanying prospectus. The Concurrent Private Placement is contingent on the closing of this offering and the satisfaction of certain other customary conditions, and this offering is contingent on the closing of the Concurrent Private Placement and the satisfaction of certain other customary conditions. See the section titled "Concurrent Private Placement" on page S-48.

The Notes

The Notes will not bear regular interest. The Notes will mature on September 1, 2025 (the "*Maturity Date*"), unless earlier repurchased, redeemed or converted. We are selling the Notes at an issue price of 100% of the principal amount, and, as described in more detail in this prospectus supplement, when we repay the principal of the Notes at maturity pursuant to the terms of the Notes, we will be required to pay 115% of the principal amount repaid (the "*Repayment Price*"). Holders of the Notes will have the option to partially redeem the Notes on the first day of each month beginning November 1, 2023 for the principal amounts described in this prospectus supplement at the Repayment Price.

Holders of the Notes may convert their Notes into shares of our common stock at any time prior to the close of business on the second scheduled trading day (or, if earlier, the standard settlement period for the primary Eligible Exchange (as defined herein) (measured in terms of trading volume for its common stock) on which the common stock is traded) immediately before the Maturity Date. The initial conversion rate for the Notes will be 349.1925 shares of our common stock per \$1,000 principal amount of Notes, equivalent to an initial conversion price of approximately \$2.8638 per share of our common stock. The conversion rate will also be subject to adjustment as described in this prospectus supplement.

We will issue \$80,000,000 aggregate principal amount of the Notes and Private Placement Notes (collectively, the "*Initial Notes*") at the closing of this offering and the Concurrent Private Placement, which is expected to occur on October 13, 2023 or such later date as we and the Purchaser may agree (the "*Closing Date*"). In addition, the Purchaser will have the option to purchase up to an additional \$25,000,000 aggregate principal amount of the senior secured convertible notes due 2025 in a private placement exempt from the registration requirements of the Securities Act on substantially the same terms as the Notes being offered by this prospectus supplement and the accompanying prospectus (the "*Additional Notes*" and, together with the Initial Notes, the "*Transaction Notes*"). All Transaction Notes will mature on September 1, 2025.

Subject to certain conditions, at our option, we can require conversion of all, but not less than all, of the Initial Notes if the last reported sale price of our common stock exceeds 175% of the conversion price for at least 20 volume-weighted average price (“VWAP”) trading days in any 30 consecutive trading day period.

Subject to terms, conditions and certain exceptions set forth in the Notes, we will have the right to redeem all (but not less than all) of the then outstanding principal amount of the Notes for cash at the redemption price described in this prospectus supplement under the section titled “Description of Securities We Are Offering—Notes—Redemption at Our Option.” If a Fundamental Change (as defined herein) occurs the holders of the Notes may require us to repurchase the Initial Notes for a cash amount equal to the price described in this prospectus supplement under the section titled “Description of Securities We Are Offering—Notes—Repurchase of the Notes upon a Fundamental Change.”

The Notes will be secured by a first-priority lien, subject only to certain permitted liens, on substantially all our and our subsidiaries’ (other than certain foreign subsidiaries) assets, whether now owned or hereafter acquired (other than certain excluded property).

As described in more detail in this prospectus supplement, the Notes will be our senior secured obligations, will rank *pari passu* with the Private Placement Notes and any Additional Notes, senior in right of payment to all of our indebtedness that is expressly subordinated to the Notes in right of payment, effectively senior to all our unsecured indebtedness to the extent of the collateral securing the Notes, effectively junior to all of our indebtedness secured by permitted liens, to the extent of the value of the assets subject to such permitted liens and to the extent such permitted liens have lien priority by contract or law and structurally junior to all indebtedness and other liabilities (including trade payables) of our subsidiaries that are not party to the security documents (as defined in “Description of Securities We Are Offering—Notes—Security”).

The Warrants

The Purchaser will receive Warrants to purchase an aggregate of 21,660,650 shares of our common stock. Each Warrant will have an exercise price of \$3.1855 per share, be immediately exercisable and will expire on the fifth anniversary of the date of issuance. The exercise price is subject to appropriate adjustment in the event of certain stock dividends and distributions, stock splits, stock combinations, reclassifications or similar events affecting our common stock and also upon any distributions of assets, including cash, stock or other property to our stockholders.

The Warrants will be exercisable, at the option of each holder, in whole or in part by delivering to us a duly executed exercise notice and either by payment in full in immediately available funds for the number of shares of common stock purchased upon such exercise or through a cashless exercise, if at the time of exercise hereof there is no effective registration statement registering, or the prospectus contained therein is not available for the issuance of, the common stock to the holder, in which case the holder would receive upon such exercise the net number of shares of common stock determined according to the formula set forth in the Warrant. No fractional shares of our common stock will be issued in connection with the exercise of a Warrant. In lieu of fractional shares, we will round to the next whole share.

In connection with any issuance of Additional Notes to the Purchaser, we will also issue additional warrants (the “*Additional Warrants*” and together with the Additional Notes, the “*Additional Securities*”) exercisable for the aggregate number of Warrant Shares equal to 75% of the aggregate principal amount of such Additional Notes in a private placement exempt from the registration requirements of the Securities Act.

Our common stock is listed on The Nasdaq Capital Market (“*Nasdaq*”) under the symbol “BNGO.” On October 10, 2023, the last reported sale price on Nasdaq of our common stock was \$2.95 per share. There is currently no established trading market for the Warrants or the Notes, and we do not expect a market to develop. We do not intend to list the Notes or the Warrants on Nasdaq or any other national securities exchange or any other nationally recognized trading system. Without an active trading market, the liquidity of the Notes and the Warrants will be limited.

We are a “smaller reporting company” as defined under the federal securities laws and, as such, have elected to comply with certain reduced reporting requirements for this prospectus supplement and may elect to do so in future filings.

We have retained Cowen and Company, LLC and Stifel, Nicolaus & Company, Incorporated to act as our co-lead placement agents and BTIG, LLC to act as our placement agent (together, the “*Placement Agents*”) for the sale of the Notes and the Warrants, and have entered into a placement agent agreement, dated October 11, with the Placement Agents. We have agreed to pay the Placement Agents a cash fee equal to \$2,700,000 at the closing of the offering and a cash fee equal to 6.0% of the gross proceeds from the sale of any Subsequently Purchased Securities (as defined herein). See the section titled “Plan of Distribution” beginning on page S-49 of this prospectus supplement regarding the compensation to be paid to the Placement Agents.

Our business and an investment in our securities involve significant risks. These risks are described under the caption “Risk Factors” beginning on page S-7 of this prospectus supplement and in the documents incorporated by reference into this prospectus supplement and the accompanying prospectus.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the accuracy or adequacy of this prospectus supplement and the accompanying prospectus. Any representation to the contrary is a criminal offense.

Delivery of the securities in this offering is expected to be made on or about October 13, 2023 or such later date as we and the Purchaser may agree.

Lead Placement Agents

TD Cowen

Stifel

Placement Agent

BTIG

The date of this prospectus supplement is October 11, 2023

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Prospectus

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ABOUT THIS PROSPECTUS SUPPLEMENT

This prospectus supplement and the accompanying prospectus is a part of a registration statement on Form S-3 that we filed with the Securities and Exchange Commission (the “SEC”), utilizing a “shelf” registration process. This prospectus supplement describes the specific terms of this offering and also adds to and updates the information contained in the accompanying prospectus and the documents incorporated by reference into this prospectus supplement and the accompanying prospectus. The accompanying prospectus gives more general information, some of which may not apply to this offering. If there is a difference between the information contained in this prospectus supplement and the information contained in the accompanying prospectus or any document incorporated by reference, you should rely on the information in this prospectus supplement. Generally, when we refer to the prospectus, we are referring to this prospectus supplement and the accompanying prospectus combined.

We have not, and the Placement Agents have not, authorized anyone to provide you with information different than or inconsistent with the information contained in or incorporated by reference in this prospectus supplement, the accompanying prospectus and in any free writing prospectus that we have authorized for use in connection with this offering. Neither we nor the Placement Agents take responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. We are not, and the Placement Agents are not, making an offer to sell these securities in any jurisdiction where the offer or sale is not permitted or in which the person making that offer or solicitation is not qualified to do so or to anyone to whom it is unlawful to make an offer or solicitation. You should assume that the information appearing in this prospectus supplement, the accompanying prospectus, the documents incorporated by reference in this prospectus supplement and the accompanying prospectus, and in any free writing prospectus that we have authorized for use in connection with this offering, is accurate only as of the date of those respective documents, regardless of the time of delivery of those respective documents. Our business, financial condition, results of operations and prospects may have changed since those dates. You should read this prospectus supplement, the accompanying prospectus, the documents incorporated by reference in this prospectus supplement and the accompanying prospectus, and any free writing prospectus that we have authorized for use in connection with this offering, in their entirety before making an investment decision. You should also read and consider the information in the documents to which we have referred you in the sections titled “Where You Can Find Additional Information” and “Incorporation of Certain Information by Reference.”

We are offering to sell, and seeking offers to buy, our securities only in jurisdictions where offers and sales are permitted. The distribution of this prospectus supplement and the accompanying prospectus and this offering of our securities in certain jurisdictions may be restricted by law. Persons outside the United States who come into possession of this prospectus supplement and the accompanying prospectus must inform themselves about, and observe any restrictions relating to, this offering of our securities and the distribution of this prospectus supplement and the accompanying prospectus outside the United States. This prospectus supplement and the accompanying prospectus do not constitute, and may not be used in connection with, an offer to sell, or a solicitation of an offer to buy, any securities offered by this prospectus supplement and the accompanying prospectus by any person in any jurisdiction in which it is unlawful for such person to make such an offer or solicitation.

Unless otherwise mentioned or unless the context indicates otherwise, all references in this prospectus to “Bionano,” “the Company,” “we,” “us,” “our” and similar references refer to Bionano Genomics, Inc. and its subsidiaries or, as the context may require, Bionano Genomics, Inc. only. “Bionano Laboratories,” “BioDiscovery” and “Purigen” refer to our wholly owned subsidiaries, Lineagen, Inc. (doing business as Bionano Laboratories), BioDiscovery, LLC and Purigen Biosystems, Inc., respectively.

Our design logo, “Bionano,” and our other registered and common law trade names, trademarks and service marks are the property of Bionano Genomics, Inc. The trademarks, trade names and service marks appearing in this prospectus supplement and the accompanying prospectus are the property of their respective owners. We do not intend our use or display of other companies’ trademarks, trade names or service marks to imply a relationship with, or endorsement or sponsorship of us by, any other companies or products.

PROSPECTUS SUPPLEMENT SUMMARY

The following summary highlights certain information about us, this offering and selected information contained elsewhere in or incorporated by reference into this prospectus supplement. This summary is not complete and does not contain all of the information that you should consider before deciding whether to invest in our securities. For a more complete understanding of our company and this offering, you should read and consider carefully the more detailed information included or incorporated by reference in this prospectus supplement and the accompanying prospectus, including the factors described under the heading “Risk Factors,” as well as the information included in any free writing prospectus that we have authorized for use in connection with this offering.

Company Overview

We are a provider of genome analysis solutions that can enable researchers and clinicians to reveal answers to challenging questions in biology and medicine. Our mission is to transform the way the world sees the genome through optical genome mapping (“OGM”) solutions, diagnostic services and software. We offer OGM solutions for applications across basic, translational and clinical research, and for other applications including bioprocessing. Through our Bionano Laboratories business, we also provide diagnostic testing for patients with clinical presentations consistent with autism spectrum disorder and other neurodevelopmental disabilities. Through our BioDiscovery business, we offer an industry-leading, platform-agnostic software solution, which integrates next-generation sequencing and microarray data designed to provide analysis, visualization, interpretation and reporting of copy number variants, single-nucleotide variants and absence of heterozygosity across the genome in one consolidated view. Through our Purigen business, we offer nucleic acid extraction and purification solutions using proprietary isotachopheresis technology through our Ionic Purification system.

Recent Developments

Preliminary Unaudited Financial and Business Results

- Estimated revenues for the third quarter 2023 are expected to be in the range of \$9.1 million to \$9.3 million, an estimated increase of 26% to 29% compared to the third quarter of 2022.
- The installed base of Saphyr® systems is estimated to total 301 at the end of the third quarter 2023, which was an increase of 20 systems over the end of the second quarter of 2023 and represents a 39% increase over the 217 installed systems reported at the end of the third quarter of 2022.
- Nanochannel array flowcells sold in the third quarter are expected to be 6,176, an estimated increase of 55% over the 3,975 flowcells sold during the third quarter of 2022.

We have not completed preparation of our consolidated financial statements for the third quarter of 2023. The financial performance measures and business results presented above as of and for the quarter ended September 30, 2023 are preliminary and unaudited, based on management’s initial review of the information presented, and are thus inherently uncertain and subject to change as we complete our end-of-period reporting process and related activities for the third quarter of 2023. We are in the process of completing our customary quarter-end close and review procedures as of and for the quarter ended September 30, 2023, and the final results for this period could differ from the preliminary estimated results disclosed herein. During the course of the preparation of our unaudited consolidated financial statements and related notes as of and for the quarter ended September 30, 2023, our independent registered public accountants may identify items that could cause final reported results to be materially different from the preliminary estimates presented herein. Additional information and disclosures would be required for a more complete understanding of our financial position and results of operations as of and for the quarter ended September 30, 2023. Accordingly, undue reliance should not be placed on this preliminary information. Our independent registered public accounting firm has not audited, reviewed, compiled, or performed any procedures with respect to our preliminary unaudited results and, accordingly, does not express an opinion or any other form of assurance on them. In addition, these preliminary unaudited financial and business results should not be viewed as a substitute for financial statements prepared in accordance with accounting principles generally accepted in the United States and are not necessarily indicative of the results to be achieved in any future period. We assume no duty to update these preliminary estimates except as required by law.

Operating and Manufacturing Cost Reductions

- On October 9, 2023, we committed to a series of cost savings initiatives including a reduction in force and reducing facility costs and discretionary spending unrelated to headcount that, taken together with cost savings realized from the reduction in force we announced in May 2023, is expected to result in a reduction of non-GAAP operating expenses by approximately \$31.6 million on an annualized basis starting in 2024, excluding savings in stock-based compensation.
- Part of the savings comes from a reduction in force of 66 positions eliminated as part of the October 2023 initiatives, which, when combined with the positions eliminated since May 2023, is expected to bring the number of employees planned for December 31, 2023 to 321.
- Cost of goods sold is expected to be reduced by approximately \$1.4 million on an annual basis, starting in 2024, in connection with the October 2023 initiatives, which will be a component of anticipated improvements to gross margin going forward.

We refer to non-GAAP total expenses and non-GAAP operating expenses above but we do not provide guidance for the most directly comparable GAAP measures, total expenses and operating expenses. Similarly, we cannot provide a reconciliation between our most directly comparable GAAP measures, total expenses and operating expenses without unreasonable effort due to the unavailability of reliable estimates for certain components including stock-based compensation, which are not within our control and may vary greatly between periods and could significantly impact our financial results calculated in accordance with GAAP.

Reverse Stock Split

On August 4, 2023, we filed a Certificate of Amendment to our Amended and Restated Certificate of Incorporation with the Secretary of State of the State of Delaware to effect a reverse stock split of all issued and outstanding shares of our common stock at a ratio of 1-for-10. The reverse stock split did not change the par value or the authorized number of shares of our common stock.

Corporate Information

We were formed in January 2003 as BioNanomatrix LLC, a Delaware limited liability company. In August 2007, we became BioNanomatrix Inc., a Delaware corporation. In October 2011, we changed our name to BioNano Genomics, Inc., and in July 2018, we changed our name to Bionano Genomics, Inc.

Our principal executive offices are located at 9540 Towne Centre Drive, Suite 100, San Diego, California 92121, and our telephone number is (858) 888-7600. Our website address is www.bionanogenomics.com, and we regularly post copies of our press releases as well as additional information about us on our website. Information contained in, or that can be accessed through, our website is not incorporated by reference into this prospectus supplement and the accompanying prospectus, and you should not consider information on our website to be part of this prospectus or in deciding whether to purchase our securities.

Concurrent Private Placement

The Purchaser is also purchasing up to \$35,000,000 aggregate principal amount of senior secured convertible notes due 2025 in the Concurrent Private Placement exempt from the registration requirements of the Securities Act on substantially the same terms as the Notes being offered by this prospectus supplement and the accompanying prospectus. The Concurrent Private Placement is contingent on the closing of this offering and the satisfaction of certain other customary conditions, and this offering is contingent on the closing of the Concurrent Private Placement and the satisfaction of certain other customary conditions. The Purchaser will be entitled to certain registration rights with respect to the Private Placement Notes.

Implications of Being a Smaller Reporting Company

We are a “smaller reporting company” meaning that the market value of our common stock held by non-affiliates is less than \$250.0 million measured on the last business day of our second fiscal quarter or our annual revenue is less than \$100.0 million during the most recently completed fiscal year and the market value of our common stock held by non-affiliates is less than \$700.0 million measured on the last business day of our second fiscal quarter. Accordingly, we may provide less public disclosure than larger public companies, including the inclusion of only two years of audited financial statements and only two years of management’s discussion and analysis of financial condition and results of operations disclosure. As a result, the information that we provide to our stockholders may be different than you might receive from other public reporting companies in which you hold equity interests.

THE OFFERING

Securities Offered by Us	We are offering (i) \$45,000,000 aggregate principal amount of Notes and (ii) Warrants to purchase up to 21,660,650 shares of our common stock pursuant to this prospectus supplement and the accompanying prospectus. This offering also relates to the offering of the shares of our common stock issuable upon conversion of the Notes and exercise of the Warrants.
Issue Price	100%.
Concurrent Private Placement; Additional Notes and Additional Warrants	<p>The Purchaser is also purchasing up to \$35,000,000 aggregate principal amount of the Private Placement Notes in the Concurrent Private Placement exempt from the registration requirements of the Securities Act, on substantially the same terms as the Notes being offered by this prospectus supplement and the accompanying prospectus. The Concurrent Private Placement is contingent on the closing of this offering and the satisfaction of certain other customary conditions, and this offering is contingent on the closing of the Concurrent Private Placement and the satisfaction of certain other customary conditions. The Purchaser will be entitled to certain registration rights with respect to the Private Placement Notes. The Private Placement Notes and the shares of our common stock issuable upon the conversion of the Private Placement Notes are not being offered pursuant to this prospectus supplement and the accompanying prospectus. See “Concurrent Private Placement” on page S-48.</p> <p>The Purchaser will have the option to purchase up to \$25,000,000 aggregate principal amount of Additional Notes and Additional Warrants exercisable for the aggregate number of Warrant Shares equal to 75% of the aggregate principal amount of such Additional Notes in a private placement exempt from the registration requirements of the Securities Act, on substantially the same terms as the Notes being offered by this prospectus supplement and the accompanying prospectus and the Private Placement Notes being offered in the Concurrent Private Placement. Any Additional Securities issued pursuant to the Purchase Agreement will be issued pursuant to exemptions from the Securities Act, and the holders thereof will be entitled to certain registration rights with respect to such Additional Securities. The Additional Notes, Additional Warrants and the shares of our common stock issuable upon the conversion of the Additional Notes and upon the exercise of the Additional Warrants are not being offered pursuant to this prospectus supplement and the accompanying prospectus.</p>
The Notes	
Maturity Date	September 1, 2025, unless earlier repurchased, redeemed or converted.
Interest	The Notes will not bear regular interest.
Retirement Fee	On the earlier to occur of (i) the date that no principal amount of the Notes remain outstanding or (ii) the Maturity Date, we will pay to the holders of the Notes a cash retirement fee equal to the product of (x) \$2,812,500 <i>multiplied by</i> (y) a fraction, whose numerator is an amount equal to \$45,000,000 less the aggregate principal amount of the Notes converted into shares of our common stock pursuant to the terms of the Notes during the period beginning on, and including, the issue date of the Notes and ending on, and including, the date on which the Notes cease to be outstanding, and whose denominator is \$45,000,000.
Ranking	As described in more detail below under “Description of Securities We Are Offering—Notes—Ranking,” the Notes will be our senior secured obligations, will rank <i>pari passu</i> with the Private Placement Notes and any Additional Notes, senior in right of payment to all of our indebtedness that is expressly subordinated to the Notes in right of payment, effectively senior to all our unsecured indebtedness to the extent of the collateral securing the Notes, effectively junior to all of our indebtedness secured by permitted liens, to the extent of the value of the assets subject to such permitted liens and to the extent such permitted liens have lien priority by contract or law and structurally junior to all indebtedness and other liabilities (including trade payables) of our subsidiaries that are not party to the security documents (as defined in “Description of Securities We Are Offering—Notes—Security”).

Conversion Rights	<p>Holders of the Notes may convert their Notes into shares of our common stock at any time prior to the close of business on the second scheduled trading day (or, if earlier, the standard settlement period for the primary Eligible Exchange (as defined in “Description of Securities We Are Offering—Notes—Certain Definitions”) (measured in terms of trading volume for its common stock) on which the common stock is traded) immediately before the Maturity Date.</p> <p>The initial conversion rate for the Notes will be 349.1925 shares of our common stock per \$1,000 principal amount of Notes, equivalent to an initial conversion price of approximately \$2.8638 per share of our common stock. The conversion rate will also be subject to adjustment as described in this prospectus supplement.</p>
Security	<p>The Purchase Agreement provides that, as of the issue date of the Notes, we and each subsidiary party to the security documents will have delivered to the collateral agent for the Purchaser under the Notes a U.S. security agreement, a U.S. intellectual property security agreement and UCC financing statements, which will create a first lien security interest in all of our and such subsidiary’s tangible and intangible assets, now owned and hereafter created or acquired (except for certain excluded property).</p>
Partial Redemptions	<p>Holders of the Notes will have the option to partially redeem the Notes on the first day of each month beginning November 1, 2023 for the principal amounts described in “Description of Securities We Are Offering—Notes—Redemption” at the Repayment Price. Notwithstanding the foregoing, holders of the Notes may subsequently defer any partial redemptions one or more times in the manner and subject to the conditions described in “Description of Securities We Are Offering—Notes—Redemption.”</p>
Redemption at our Option	<p>Subject to terms, conditions and certain exceptions set forth in the Notes, we will have the right to redeem all (but not less than all) of the then outstanding principal amount of the Notes for a cash redemption price equal to the greater of (A) 120% of the outstanding principal amount of the Notes, plus accrued and unpaid interest on the Notes; and (B) the sum of (i) 120% of the product of (a) the applicable conversion rate in effect as of the trading day immediately preceding the Company Redemption Date (as defined in “Description of Securities We Are Offering—Notes—Redemption—Redemption at our Option”); (b) the total then outstanding principal amount (expressed in thousands) of the Notes; and (c) the highest Daily VWAP (as defined in “Description of Securities We Are Offering—Notes—Certain Definitions”) per share of our common stock during the period beginning on, and including, the fifth VWAP Trading Day (as defined in “Description of Securities We Are Offering—Notes—Certain Definitions”) prior to the date that the Company’s redemption notice is delivered and ending on, and including, the VWAP Trading Day immediately preceding such Company Redemption Date; and (ii) the accrued and unpaid interest on the Notes.</p>

Repurchase or Redemption Upon a Fundamental Change	Holders of the Notes may require us to repurchase the Notes upon a Fundamental Change (as defined in “Description of Securities We Are Offering—Notes—Repurchase of the Notes upon a Fundamental Change”) for a cash amount equal to the greater of (A) 115% of the outstanding principal amount of the Notes to be repurchased, plus accrued and unpaid interest on such Notes; and (B) the sum of (i) 115% of the product of (a) the applicable conversion rate in effect as of the trading day immediately preceding the effective date of such Fundamental Change; (b) the total then outstanding principal amount (expressed in thousands) of the Notes to be repurchased; and (c) the average of the five Daily VWAPs per share of our common stock during the five consecutive VWAP Trading Days ending on, and including the VWAP Trading Day immediately preceding the effective date of such Fundamental Change; and (ii) accrued and unpaid interest on such Notes.
Forced Conversion	Subject to certain conditions, at our option, we can require conversion of all, but not less than all, the Notes if the Last Reported Sale Price of our common stock exceeds 175% of the conversion price for at least 20 VWAP Trading Days in any 30 consecutive Trading Day period beginning on any VWAP Trading Day after the effective date with respect to the registration statement registering the resale of the Private Placement Notes and the shares of common stock underlying the Private Placement Notes (the “ <i>Resale Registration Statement</i> ”) and ending on the date upon which the conversion notice is delivered by us to the holders.
Events of Default	If an Event of Default (as defined in “Description of Securities We Are Offering—Notes—Events of Default”) occurs, the holders may declare the Notes due and payable for cash in an amount equal to the Event of Default Acceleration Amount (as defined in “Description of Securities We Are Offering—Notes—Events of Default”).
The Warrants	
Warrants Offered by Us	We are offering Warrants to purchase an aggregate of 21,660,650 shares of our common stock. Each Warrant has an exercise price of \$3.1855 per share, is immediately exercisable and will expire on the fifth anniversary of the date of issuance. This offering also relates to the offering of the shares of our common stock issuable upon exercise of the Warrants. For additional information regarding the Warrants, see the section titled “Description of Securities We Are Offering” below.
Other Terms of this Offering	
Financing Restrictions	The Purchase Agreement provides that for 30 calendar days after the effectiveness of the Resale Registration Statement, neither the Company nor any of its subsidiaries may directly or indirectly issue, offer, sell, grant any option or right to purchase, or otherwise dispose of (or register or amend any outstanding registration statements or file any shelf registration statements or announce any issuance, offer, sale, grant of any option or right to purchase or other disposition of) any equity security or any equity-linked or related security, subject to limited exceptions, including without limitation, sales pursuant to an “at-the-market” sales program (an “ <i>ATM Sales Program</i> ”).

So long as the Notes are outstanding, the Purchase Agreement provides that the Company will not, directly or indirectly, offer, sell, grant any option to purchase, or otherwise dispose of (or announce any offer, sale, grant or any option to purchase or other disposition of) any of its or any of its subsidiaries' equity, equity-linked, equity equivalent securities or securities convertible into or exercisable for equity (excluding offerings of common stock issued pursuant to an equity line of credit or through an ATM Sales Program (other than an issuance through an ATM Sales Program in which a single investor or group of related investors purchase in excess of \$3,000,000 of common stock)) unless the Company offers certain participation rights to the holders of the Notes as set forth in the Purchase Agreement, subject to limited exceptions.

So long as any Notes remain outstanding, the Purchase Agreement provides that we and each of our subsidiaries may not effect or enter into any "Variable Rate Transaction." "Variable Rate Transaction" is generally defined to mean a transaction involving the issuance of convertible securities with a conversion price, exercise price or exchange rate or other price that is based on trading prices of our common stock or varies based on changes in the trading price of our common stock or is subject to being reset at a future date upon the occurrence of specified or contingent events (not including customary structural adjustments). Sales of our common stock pursuant to an approved equity line of credit or an ATM Sales Program will not be considered Variable Rate Transactions.

Use of Proceeds

We expect to receive net proceeds from this offering and the Concurrent Private Placement of approximately \$75.6 million, after deducting estimated offering expenses payable by us and the fee of the Placement Agents, assuming no exercise of the Warrants offered hereby. If the Purchaser's option to purchase the Additional Notes is exercised, we estimate that we will receive net proceeds of up to approximately \$99.1 million. We intend to use the net proceeds from this offering, together with our existing cash and cash equivalents and available-for-sale securities, for working capital and general corporate purposes, including research and development expenses and capital expenditures. See the section titled "Use of Proceeds."

Risk Factors

Investing in our securities involves a high degree of risk. See the section titled "Risk Factors" on page S-7 of this prospectus supplement and under similar headings in other documents incorporated by reference herein.

Nasdaq Capital Market Symbol

Our common stock is listed under the symbol "BNGO." There is currently no established trading market for the Warrants or the Notes and we do not expect a market to develop. We do not intend to list the Notes or the Warrants on Nasdaq or any other national securities exchange or any other nationally recognized trading system. Without an active trading market, the liquidity of the Notes and the Warrants will be limited.

RISK FACTORS

An investment in our securities involves a high degree of risk. You should carefully consider the following risk factors and the risk factors discussed under the section titled “Risk Factors” contained in our Annual Report on Form 10-K for the year ended December 31, 2022, Quarterly Report on Form 10-Q for the quarter ended June 30, 2023, as updated by our subsequent filings, which are incorporated by reference into this prospectus supplement and accompanying prospectus in their entirety, together with all of the other information contained in this prospectus supplement and the accompanying prospectus or incorporated by reference into this prospectus supplement and the accompanying prospectus. The risks and uncertainties described in these documents are not the only ones we face. Other risks and uncertainties, including those that we do not currently consider material, may impair our business. If any of the risks discussed below or incorporated by reference actually occur, our business, financial condition, operating results or cash flows could be materially adversely affected. This could cause the value of our securities to decline, and you may lose all or part of your investment.

Risks Related to this Offering

Our future capital needs are uncertain and even with the net proceeds from this offering and the Concurrent Private Placement, we will require additional funding in the future to advance the commercialization of our optical genome mapping systems, Ionic Purification system, VIA software, and our other products, technologies and services, as well as continue our research and development efforts. If we fail to obtain additional funding, we will be forced to delay, reduce or eliminate our commercialization and development efforts.

Our operations have consumed substantial amounts of cash since our inception. We expect to continue to spend substantial amounts of cash in order to continue the commercialization of our products and technologies, fund our research and development programs and execute potential strategic transactions. In connection with the preparation of our financial statements for the fiscal year ended December 31, 2022, we had performed an analysis of our ability to continue as a going concern and, based on our current business plan, we believed that our existing cash and cash equivalents will not be sufficient for the next twelve months from the issuance of our report for the fiscal year ended December 31, 2022. Our ability to execute our operating plan depends on our ability to generate sales and obtain additional funding through equity offerings, debt financings or potential licensing and collaboration arrangements. For example, we will likely need to raise substantial additional capital to:

- expand our sales and marketing efforts to further commercialize our products, technologies and services and address competitive developments;
- expand our research and development efforts to improve our existing products, technologies and services and develop and launch new products, technologies and services, particularly if any of our products, technologies and services are deemed by the U.S. Food and Drug Administration (the “FDA”) to be medical devices or otherwise subject to additional regulation by the FDA;
- pursue a regulatory path with the FDA, or a regulatory body outside the United States, to market our existing “research use only” products or new products utilized for diagnostic purposes;
- lease additional facilities or build-out existing facilities as we continue to grow our inventory and research and development;
- further expand our operations outside the United States;
- enter into collaboration arrangements, if any, or in-license products and technologies;
- acquire or invest in complimentary businesses or assets;
- add operational, financial and management information systems; and
- cover increased costs incurred as a result of continued operation as a public company, including costs resulting from our no longer qualifying as an emerging growth company and, if applicable, in the future, loss of our status as a smaller reporting company or changes in our status from a non-accelerated filer to an accelerated filer or large accelerated filer.

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

- the cost of integrating our newly acquired businesses or of acquiring future businesses;
- market acceptance of our products, technologies and services, and the variability in costs to achieve such acceptance;
- the cost and timing of establishing additional sales, marketing and distribution capabilities;
- the cost of our research and development activities;
- our ability to satisfy any outstanding or future debt obligations;
- increasing interest rates;
- supply chain disruptions;
- the success of our existing distribution and marketing arrangements and our ability to enter into additional arrangements in the future;
- the effects of geopolitical or macroeconomic developments, such as the ongoing military conflict between Russia and Ukraine, related sanctions, recent and potential future disruptions in access to bank deposits or lending commitments due to bank failures and global pandemics; and
- the effect of competing technological and market developments.

As of June 30, 2023, we had \$77.1 million in cash, cash equivalents and short-term investments. Based on our current business plans, we believe that the net proceeds from this offering and the Concurrent Private Placement, together with our existing cash, cash equivalents and short-term investments, will be sufficient to fund our operating expenses and capital expenditure requirements through at least 2024. However, this estimate assumes the inclusion of \$35.0 million that we are required to hold as restricted cash in the Restricted Cash Account (as defined in “Description of Securities We Are Offering - Funding Conditions”), which cash may only be released from such account upon the satisfaction of the Funding Conditions (as defined in “Description of Securities We Are Offering - Funding Conditions”). We expect the Funding Conditions may be difficult to achieve, and there is no assurance that we will be able to meet these Funding Conditions and access such restricted cash. Excluding this amount of restricted cash, we expect that the net proceeds from this offering and the Concurrent Private Placement, together with our existing cash, cash equivalents and short-term investments will only be sufficient to fund our operating expenses and capital expenditure requirements through at least into the third quarter of 2024. In either situation, the net proceeds from this offering and the Concurrent Private Placement, together with our existing cash and cash equivalents and available-for-sale securities, will not be sufficient for us to achieve cash-flow break even and we expect to need to seek additional capital based on favorable market conditions or strategic considerations alternatives in the future.

We have based this estimate on assumptions that may prove to be wrong, and we could use our capital resources sooner than we currently expect, requiring us to seek additional funds sooner than planned, through public or private equity or debt financings or other sources, such as strategic collaborations. The various ways we could raise additional capital carry potential risks. We cannot assure you that we will be able to obtain additional funds on acceptable terms, or at all. If we raise additional funds by issuing equity or equity-linked securities, our stockholders may experience dilution. Any equity or debt securities we issue could provide for rights, preferences, or privileges senior to those of holders of our common stock. Future debt financing, if available, may involve covenants restricting our operations or our ability to incur additional debt. Any debt or equity financing may contain terms that are not favorable to us or our stockholders. If we raise additional funds through collaboration and licensing arrangements with third parties, it may be necessary to relinquish some rights to our technologies or our products, or grant licenses on terms that are not favorable to us. In addition, we may not be able to access a portion of our existing cash, cash equivalents and investments or “restricted cash” in the account control agreement due to market conditions such as recent and potential future disruptions in access to bank deposits or lending commitments due to bank failures.

Global economic conditions have been worsening, with disruptions to, and volatility in, the credit and financial markets in the U.S. and worldwide resulting from the effects of ongoing geopolitical or macroeconomic developments. If these conditions persist or worsen, we could experience an inability to access additional capital. If we do not have, or are not able to obtain, sufficient funds, we may have to delay development or commercialization of our technologies and products. We also may have to reduce marketing, customer support or other resources devoted to our products or technologies or cease operations. Any of these factors could have a material adverse effect on our financial condition, operating results and business. Any of the foregoing could significantly harm our business, prospects, financial condition and results of operation and could cause the price of our securities to decline. Any additional fundraising efforts may divert our management from their day-to-day activities, which may adversely affect our ability to conduct our strategic operations.

Management will have broad discretion as to the use of the net proceeds from this offering, and we may not use the net proceeds effectively.

Our management will have broad discretion in the application of the net proceeds we receive from this offering, including for any of the purposes described in the section titled “Use of Proceeds,” and you will not have the opportunity as part of your investment decision to assess whether the net proceeds are being used appropriately. Because of the number and variability of factors that will determine our use of the net proceeds from this offering, their ultimate use may vary substantially from their currently intended use. Our management could spend the proceeds in ways that do not improve our results of operations or enhance the value of our common stock. Our failure to apply these funds effectively could have a material adverse effect on our business, delay the development of our product candidates and cause the price of our common stock to decline.

The Notes will be structurally subordinated to the indebtedness and other liabilities of our subsidiaries that are not party to the security documents.

The Notes will rank *pari passu* with the Private Placement Notes and any Additional Notes, senior in right of payment to all of our indebtedness that is expressly subordinated to the Notes in right of payment, effectively senior to all our unsecured indebtedness to the extent of the collateral securing the Notes, effectively junior to all of our indebtedness secured by permitted liens, to the extent of the value of the assets subject to such permitted liens and to the extent such permitted liens have lien priority by contract or law and structurally junior to all indebtedness and other liabilities (including trade payables) of our subsidiaries that are not party to the security documents. If we acquire or form a subsidiary, other than certain foreign subsidiaries exempted under the terms of the Notes, such subsidiary will be required to become a party to the security documents within 30 days. In the event of our bankruptcy, liquidation, reorganization or other winding up, the assets of our subsidiaries that are not party to the security documents will be available to pay obligations on the Notes only after all indebtedness and other liabilities (including trade payables) of such subsidiaries have been repaid in full.

The terms of the Notes and the Purchase Agreement will restrict our current and future operations. Upon an Event of Default, we may not be able to make any accelerated payments under the Notes or our other permitted indebtedness.

The Notes and the Purchase Agreement will contain a number of restrictive covenants that impose significant operating and financial restrictions on us and may limit our ability to engage in acts that may be in our long-term best interest. In particular, the Notes will contain customary affirmative and negative covenants (including covenants that limit our ability to incur debt, make investments, transfer assets, engage in certain transactions with affiliates and merge with other companies, in each case, other than those permitted by the Notes, and that require us to maintain a share reserve in respect of the Notes and Warrants) and events of default, and the Purchase Agreement will contain customary covenants (including covenants that limit our ability to issue additional securities during specified periods and enter into variable rate transactions, and that require us to maintain a share reserve in respect of the Notes and Warrants). Furthermore, we will be required to maintain: (A) cash and cash equivalents subject to account control agreements in favor of the Purchaser in a minimum amount equal to the greater of (i) \$30 million and (ii) the lesser of (x) \$50 million and (y) our trailing six-month cash burn rate (calculated in the manner set forth in the Notes); (B) an “at the market” program, equity line of credit, or similar program approved by the Purchaser with aggregate available, accessible and unused capacity to generate gross proceeds to us of at least \$50 million; and (C) beginning with the fiscal quarter ending March 31, 2024, our and our wholly owned subsidiaries’ Available Cash (as defined under “Description of Securities We Are Offering—Notes—Certain Covenants—Minimum Liquidity”) on the last calendar day of each quarter shall be greater than or equal to (x) our and our wholly owned subsidiaries’ cash and cash equivalents on the last day of the immediately preceding fiscal quarter, less (y) \$30 million. Our ability to meet the financial tests under the Notes can be affected by events beyond our control, and we may be unable to meet them. The Private Placement Notes and the Additional Notes, if any, will contain similar provisions restricting our current and future operations. Our ability to meet the financial tests, including minimum cash spend and minimum liquidity covenants, under the Notes can be affected by events beyond our control, and we may be unable to meet them. The Private Placement Notes and the Additional Notes, if any, will contain similar provisions restricting our current and future operations.

A breach of the covenants or restrictions under the Transaction Notes or under the agreements governing any of our other permitted indebtedness could result in an event of default under the applicable indebtedness. Such a default may allow holders of the Transaction Notes or the holders or lenders of our other permitted indebtedness, as applicable, to accelerate the related indebtedness, which may result in the acceleration of other indebtedness to which a cross-acceleration or cross-default provision applies. In addition, such lenders or holders could terminate commitments to lend money, if any. Furthermore, if we were unable to repay the Notes or other permitted indebtedness then due and payable, secured lenders could proceed against the assets, if any, securing such indebtedness. In the event such lenders or holders accelerate the repayment of the Transaction Notes or our other permitted borrowings, we may not have sufficient assets to repay that indebtedness. A default would also likely significantly diminish the market price of our common stock. Furthermore, as a result of these restrictions, we may be limited in how we conduct and grow our business, or unable to compete effectively or to take advantage of new business opportunities. These restrictions may affect our ability to grow in accordance with our strategy.

Servicing the Notes requires a significant amount of cash, and we may not have sufficient cash flow from our business to pay our obligations under the Notes or our other permitted indebtedness.

Our ability to make scheduled payments of principal or default interest, if any, or to refinance the Notes or our other permitted indebtedness, including the Private Placement Notes and the Additional Notes, if any, depends on our future performance, which is subject to economic, financial, competitive and other factors, some of which are beyond our control. After giving effect to the issuance of the Initial Notes, our and our subsidiaries’ outstanding indebtedness will be approximately \$80.0 million, and the terms of the Initial Notes require us to pay approximately \$92.0 million to repay the full principal amount of the Initial Notes at maturity. Our business may not continue to generate cash flow from operations in the future sufficient to satisfy our obligations under the Notes or our other permitted indebtedness. If we are unable to generate such cash flow, we may be required to adopt one or more alternatives, such as reducing or delaying investments or capital expenditures, selling assets, refinancing or obtaining additional equity capital on terms that may be onerous or highly dilutive. We may only prepay the Notes, including the Private Placement Notes and the Additional Notes, if any, in full without the consent of the holders under certain circumstances, and our ability to refinance the Notes or our other permitted indebtedness will also depend on the capital markets and our financial condition at such time. We may not be able to engage in any of these activities or engage in these activities on desirable terms, which could result in a default on the Notes or our other indebtedness, including the Private Placement Notes and the Additional Notes, if any.

Security over certain of the collateral that will secure the Notes may not be perfected by the Closing Date.

Security interests in certain of the collateral that will secure the Notes may not be perfected by the Closing Date of this offering. We cannot assure you that we will be able to perfect any such security interests in such collateral, which would reduce the amount of collateral that will secure the Notes. Because the security interests in such collateral will be perfected following the Closing Date, those security interests would be at risk of having been granted within 90 days of a bankruptcy filing (in which case it might be voided as a preferential transfer by a trustee in bankruptcy).

The value of the collateral securing the Notes may not be sufficient to pay the amounts owed under the Notes. As a result, holders of the Notes may not receive full payment on their Notes following an Event of Default.

The proceeds of any sale of collateral securing the Notes following an Event of Default with respect thereto may not be sufficient to satisfy, and may be substantially less than, amounts due on the Notes.

No appraisal of the value of the collateral securing the Notes has been made. The value of the collateral in the event of liquidation will depend upon market and economic conditions, the availability of buyers and similar factors. The value of the collateral could be impaired in the future as a result of changing economic and market conditions, our failure to successfully implement our business strategy, competition and other factors. By its nature, some or all of the collateral may not have a readily ascertainable market value or may not be saleable or, if saleable, there may be substantial delays in its liquidation.

Bankruptcy laws and other laws relating to foreclosure and sale also could substantially delay or prevent the ability of the collateral agent for the Purchaser under the Notes (the “*Collateral Agent*”), or any holder of the Notes to obtain the benefit of any collateral securing the Notes. Such delays could have a material adverse effect on the value of the collateral.

If the proceeds of any sale of collateral are not sufficient to repay all amounts due on the Notes, the holders of the Notes (to the extent not repaid from the proceeds of the sale of the collateral) would have only an unsecured claim against our remaining assets.

The imposition of certain permitted liens will cause the assets on which such liens are imposed to be excluded from the collateral securing the Notes.

The Notes and the security documents will permit certain liens and exclude certain assets from the collateral. If an Event of Default occurs and the Notes are accelerated, the Notes will be equal in right of payment with our permitted senior indebtedness with respect to such excluded assets and will be effectively subordinated to holders of obligations secured by a lien on such excluded assets.

It may be difficult to realize the value of the collateral securing the notes.

The collateral securing the Notes is subject to certain exceptions, defects, encumbrances, liens and other imperfections permitted by the Notes and the related security documents, whether existing on or after the date the Notes were issued. The existence of any such exceptions, defects, encumbrances, liens and other imperfections could adversely affect the value of the collateral securing the Notes as well as the ability of the Collateral Agent to realize or foreclose on such collateral. Additionally, future regulatory developments or other inability to obtain or comply with the required licenses or approvals may adversely affect the value of the collateral. In the event of foreclosure, the transfer of such licenses or other approvals may be prohibited, may not be possible or may require us to incur significant cost and expense. If the regulatory authorizations required for such transfers are not obtained or are delayed, the foreclosure may be delayed and the value of the collateral may be significantly impaired. The security interest of the Collateral Agent is subject to practical challenges generally associated with the realization of security interests in collateral. For example, additional filings and/or the consent of a third party may be required in connection with obtaining or enforcing a security interest in an asset. If we are unable to obtain these consents or make these filings, the security interests may be invalid and the holders will not be entitled to the benefits of the security interests in the collateral or any recovery with respect to the sale of such collateral. We cannot assure you that these filings will be made or any such consent of any third parties will be given when required to create a lien or facilitate a foreclosure on such assets. As a result, the Collateral Agent may not have the ability to foreclose upon those assets and the value of the collateral may be significantly impaired as a result, or the security interests may be invalid and the holders of the Notes will not be entitled to the collateral or any recovery with respect thereto.

Rights of holders of Notes in the Collateral may be adversely affected by bankruptcy proceedings.

The right of the Collateral Agent for the Notes to repossess and dispose of the collateral securing the Notes upon acceleration is likely to be significantly impaired by federal bankruptcy law if bankruptcy proceedings are commenced by or against us prior to or possibly even after the Collateral Agent has repossessed and disposed of the collateral. Under Chapter 7, Title 11 of the United States Code (the “*United States Bankruptcy Code*”), a secured creditor, such as the Collateral Agent for the Notes, is prohibited from repossessing its security from a debtor in a bankruptcy case, or from disposing of security repossessed from a debtor, without bankruptcy court approval, which may not be given. Moreover, applicable federal bankruptcy law permits the debtor to continue to retain and to use collateral, and the proceeds, products, rents or profits of the collateral, even though the debtor is in default under the applicable debt instruments, provided that the secured creditor is given “adequate protection.” The meaning of the term “adequate protection” may vary according to circumstances, but it is intended in general to protect the value of the secured creditor’s interest in the collateral as of the commencement of the bankruptcy case and may include cash payments or the granting of additional security, if and at such time as the bankruptcy court in its discretion determines, for any diminution in the value of the collateral as a result of the stay of repossession or disposition or any use of the collateral by the debtor during the pendency of the bankruptcy case. A bankruptcy court may determine that a secured creditor may not require compensation for a diminution in the value of its collateral if the value of the collateral exceeds the debt it secures.

In view of the broad discretionary powers of a bankruptcy court, it is impossible to predict how long payments under the Notes could be delayed following commencement of a bankruptcy case, whether or when the Collateral Agent would repossess or dispose of the collateral, or whether or to what extent holders of the Notes would be compensated for any delay in payment or loss of value of the collateral through the requirements of “adequate protection.” Furthermore, in the event the bankruptcy court determines that the value of the collateral is not sufficient to repay all amounts due on the Notes, the holders of the Notes would have “under secured claims” as to the difference. Federal bankruptcy laws do not permit the payment or accrual of interest, costs and attorneys’ fees for “under-secured claims” during the debtor’s bankruptcy case.

In the event of our bankruptcy, any holders of the Notes may be deemed to have an unsecured claim to the extent that our obligations in respect of the Notes exceed the fair market value of the collateral securing the Notes.

In we are subject to any bankruptcy proceeding, it is possible that the bankruptcy trustee, the debtor-in-possession or competing creditors will assert that the fair market value of the collateral with respect to the Notes on the date of the bankruptcy filing was less than the then-current principal amount of the Notes. Upon a finding by the bankruptcy court that the Notes are under-collateralized, the claims in the bankruptcy proceeding with respect to the Notes would be bifurcated between a secured claim and an unsecured claim, and the unsecured claim would not be entitled to the benefits of security in the collateral. Other consequences of a finding of under-collateralization would be, among other things, a lack of entitlement on the part of the Notes to receive post-petition interest and a lack of entitlement on the part of the unsecured portion of the Notes to receive “adequate protection” under federal bankruptcy laws. In addition, if any payments of post-petition interest had been made at any time prior to such a finding of under-collateralization, those payments would be recharacterized by the bankruptcy court as a reduction of the principal amount of the secured claim with respect to the Notes.

The value of the collateral securing the Notes may not be sufficient to secure post-petition interest.

In the event of a bankruptcy, liquidation, dissolution, reorganization or similar proceeding against us, holders of the Notes will only be entitled to post-petition interest under the United States Bankruptcy Code to the extent that the value of their security interest in the collateral is greater than their pre-bankruptcy claim. Holders of the Notes that have a security interest in collateral with a value equal or less than their pre-bankruptcy claim will not be entitled to post-petition interest under the United States Bankruptcy Code. No appraisal of the fair market value of the collateral was prepared in connection with the offering of the Notes and we therefore cannot assure you that the value of the holders’ interest in the collateral equals or exceeds the principal amount of the Notes.

Certain pledges of collateral and payments on the Notes might be avoidable by a trustee in bankruptcy.

Any future pledge of collateral, or any future perfection of any other pledge, to secure the Notes might be avoidable under the U.S. bankruptcy preference laws by the pledgor (as debtor in possession), by its trustee in bankruptcy or by someone else acting on behalf of the bankruptcy estate, if certain events or circumstances exist or occur, including, among others, if the pledgor is insolvent at the time of the pledge, the pledge permits the holders of the Notes to receive a greater recovery than they would in a liquidation case under the United States Bankruptcy Code, if the pledge had not been given, and a bankruptcy proceeding in respect of the pledgor is commenced within 90 days following the later of the pledge, and perfection of the pledge, or, in certain circumstances, a longer period. If any pledges of collateral are avoided, the collateral will not be available to the holders of the Notes to satisfy the obligations under the Notes. Certain payments on the Notes might be avoidable under the U.S. bankruptcy preference laws by us (as debtor in possession), by our trustee in bankruptcy or by someone else acting on behalf of the bankruptcy estate if certain events or circumstances exist or occur, including, among others, if we are insolvent at the time of the payment, the payment permits the holders of the Notes to receive a greater recovery than they would have received in a liquidation case under the United States Bankruptcy Code if the payment had not been made, and a bankruptcy proceeding in respect of us commenced within 90 days following the payment, or, in certain circumstances, a longer period.

Your rights in the collateral may be adversely affected by the failure to perfect security interests in certain collateral in the future.

Applicable law requires that a security interest in certain tangible and intangible assets can only be properly perfected and its priority retained through certain actions undertaken by the secured party. The liens on the collateral securing the Notes may not be perfected if we or the Collateral Agent are not able to take the actions necessary to perfect any of these liens on or prior to the date of the issuance of the Notes or thereafter. We have limited obligations to perfect the security interest of the holders of the Notes in specified collateral. Applicable law requires that certain property and rights acquired after the grant of a general security interest, such as certain proceeds, can only be perfected at the time such property and rights are acquired and identified. If we become subject to a bankruptcy proceeding, any collateral perfected after the closing date of this offering of Notes faces a greater risk of being invalidated than if they had been perfected on the closing date for this offering of Notes. In addition, the Collateral Agent may not monitor, or we may fail to inform the Collateral Agent of, the future acquisition of property and rights that constitute collateral, and necessary action may not be taken to properly perfect the security interest in such after-acquired collateral. The Collateral Agent for the Notes has no obligation to monitor the acquisition of additional property or rights that constitute collateral or the perfection of any security interest in favor of the Notes against third parties. Such failure may result in the loss of the security interest therein or the priority of the security interest in favor of the Notes against third parties.

The collateral is subject to casualty risks.

We maintain insurance or otherwise insure against hazards in a manner appropriate and customary for our business. There are, however, certain losses that may be either uninsurable or not economically insurable, in whole or in part. Insurance proceeds may not compensate us fully for our losses. If there is a complete or partial loss of any of the pledged collateral, the insurance proceeds may not be sufficient to satisfy all of the secured obligations, including obligations under the Notes.

Some significant restructuring transactions may not constitute a “Fundamental Change” under the Notes, in which case we would not be obligated to offer to repurchase the Notes.

Upon the occurrence of a Fundamental Change, holders of the Notes have the right to require us to repurchase their Notes. Events constituting a “Fundamental Change” include (a) any “person” or “group” (within the meaning of Section 13(d)(3) of the Exchange Act), other than us or our wholly-owned subsidiaries, our employee benefit plans or those of our wholly-owned subsidiaries or a holder of Notes or any of its affiliates (including a “group” including such holder or any of its affiliates) has become and files any report with the SEC indicating that such person or group has become the direct or indirect beneficial owner of the majority of the voting power of our common stock; provided, however, that, for these purposes, no “person” or “group” will be deemed to be the beneficial owner of any securities tendered pursuant to a tender or exchange offer made by or on behalf of such “person” or “group” until such tendered securities are accepted for purchase or exchange under such offer; (b) the consummation of any sale, lease or other transfer of all or substantially all of our assets, or any transfer or transaction which results in effectively the same; (c) the approval by our stockholders of a plan or proposal to liquidate or dissolve us; or (d) our common stock ceases to be listed on any Eligible Exchange (as defined and described under “Description of Securities We Are Offering—Notes—Repurchase of the Notes upon a Fundamental Change”). However, the Fundamental Change provisions will not afford protection to holders of the Notes in the event of other transactions that could adversely affect the Notes. For example, transactions such as leveraged recapitalizations, refinancings, restructurings, or acquisitions initiated by us may not constitute a Fundamental Change requiring us to repurchase the Notes. In the event of any such transaction, the holders would not have the right to require us to purchase the Notes, even though each of these transactions could increase the amount of our indebtedness, or otherwise adversely affect our capital structure or any credit ratings, thereby adversely affecting the holders of the Notes.

We may not have the ability to raise the funds necessary to repurchase the Notes as required upon a Fundamental Change, and our other then-existing debt may contain limitations on our ability to pay cash upon such repurchase of the Notes.

Following a Fundamental Change as described under “Description of Securities We Are Offering—Notes—Repurchase of the Notes upon a Fundamental Change,” holders of Notes will have the right to require us to repurchase their Notes for cash. A Fundamental Change may also constitute an event of default or prepayment under, and result in the acceleration of the maturity of, our other then-existing permitted indebtedness. We cannot assure you that we will have sufficient financial resources, or will be able to arrange financing, to pay the Fundamental Change Repurchase Price in cash with respect to any Notes surrendered by holders for repurchase upon a Fundamental Change. In addition, restrictions in our then-existing permitted indebtedness may not allow us to repurchase the Notes upon a Fundamental Change. Our failure to repurchase the Notes upon a Fundamental Change when required would result in an Event of Default with respect to the Notes, which could, in turn, constitute a default under the terms of our other permitted indebtedness. If the repayment of the related indebtedness were to be accelerated after any applicable notice or grace periods, we may not have sufficient funds to repay the indebtedness and repurchase the Notes.

The conversion rate of the Notes may not be adjusted for all dilutive events.

The conversion rate of the Notes is subject to adjustment for certain events, including, but not limited to, certain dividends on our common stock, the issuance of certain rights, options or warrants to holders of our common stock, subdivisions or combinations of our common stock, certain distributions of assets, debt securities, capital stock, cash or other property to holders of our common stock and certain tender or exchange offers, as described under the section titled “Description of Securities We Are Offering—Notes—Conversion Rights” in this prospectus supplement. The conversion rate will not be adjusted for other events, such as an issuance of our common stock for cash, that may adversely affect the trading price of the Notes and the market price of our common stock. An event may occur that is adverse to the interests of the holders of the Notes and their value, but that does not result in an adjustment to the conversion rate.

You will not be entitled to receive any shares of our common stock otherwise deliverable upon conversion of the Notes to the extent that such receipt would cause you to become, directly or indirectly, a beneficial owner of shares of our common stock in excess of the then applicable beneficial ownership limits.

Notwithstanding anything to the contrary herein, you will not be entitled to receive any shares of our common stock otherwise deliverable upon conversion of the Notes to the extent, but only to the extent, that such receipt would cause you to become, directly or indirectly, the “beneficial owner” (as defined under “Description of Securities We Are Offering—Notes—Certain Definitions”) of more than 4.99% of the shares of our common stock outstanding at such time. However, you may increase or decrease such percentage to any other percentage not in excess of 9.99%; provided that any increase in such percentage shall not be effective until 61 days after such notice to us. Any purported delivery of shares of our common stock upon conversion of the Notes shall be void and have no effect to the extent, but only to the extent, that such delivery would result in any person becoming the beneficial owner of shares of our common stock outstanding at such time in excess of the beneficial ownership limits then applicable to such person; provided, however that, in the event of a forced conversion (as described in “Description of the Securities—Notes—Forced Conversion”), the aggregate number of shares of common stock that would otherwise be required to be issued to such holder shall be held in abeyance for the benefit of such holder until such time or times as its right thereto would not result in such holder exceeding the applicable beneficial ownership limitation.

As a result of the beneficial ownership limits, shares otherwise deliverable upon conversion of a holder’s Notes may be delayed, or never delivered at all. These limitations on beneficial ownership may force a holder to sell shares of our common stock or other securities it owns in order to receive shares such holder would otherwise be entitled to receive upon conversion. If a holder converts its Notes and does not receive any shares otherwise deliverable upon conversion of its Notes, we will not be responsible for any lost value due to a delayed delivery, or if they are never delivered as a result of the conversion restrictions described above.

Conversion of the Notes or exercise of the Warrants may dilute the ownership interest of existing stockholders or may otherwise depress the price of our common stock.

The conversion of the Notes or exercise of the Warrants will dilute the ownership interests of existing stockholders to the extent we deliver shares upon conversion of the Notes or exercise of the Warrants. Any sales in the public market of the common stock issuable upon such conversion could adversely affect prevailing market prices of our common stock. In addition, the existence of the Notes and the Warrants may encourage short selling by market participants because the conversion of the Notes or exercise of the Warrants could be used to satisfy short positions, or anticipated conversion of the Notes into or exercise of the Warrants for shares of our common stock could depress the price of our common stock.

Upon conversion of the Notes, holders of the Notes may receive less valuable consideration than expected because the value of our common stock may decline after holders exercise their conversion right but before we settle our conversion obligation.

Under the Notes, a converting holder will be exposed to fluctuations in the value of our common stock during the period from the date such holder surrenders the Notes for conversion until the date we settle our conversion obligation. We will deliver the consideration due in respect of conversion on the second business day immediately following the relevant conversion date. Accordingly, if the price of our common stock decreases during this period, the amount and/or value of consideration a holder receives will be adversely affected.

The Fundamental Change repurchase feature of the Notes may delay or prevent an otherwise beneficial attempt to take over our company.

The terms of the Notes require us to repurchase the Notes in the event of a Fundamental Change. A takeover of our company would trigger an option of the holders of the Notes to require us to repurchase the Notes. This may have the effect of delaying or preventing a takeover of our company that would otherwise be beneficial to investors in the Notes or shares of our common stock.

Holders of the Notes will not be entitled to certain rights with respect to our common stock, but will be subject to all changes made with respect to them.

Holders of the Notes will not be entitled to certain rights with respect to our common stock (including, without limitation, voting rights) but holders of the Notes will be subject to all changes affecting our common stock. Holders of the Notes will not be entitled to the rights of the common stock underlying such Notes, except to the extent they convert such Notes, and, in such case, will be deemed to be the record holder of such shares of common stock as of the related conversion date. For example, if an amendment is proposed to our certificate of incorporation or bylaws requiring stockholder approval and the record date for determining the stockholders of record entitled to vote on the amendment occurs prior to the conversion date of any Note, then the holder of such Note will not be entitled to vote the shares due upon conversion on the amendment, although such holder will, upon conversion, nevertheless be subject to any changes affecting our common stock.

Holders of the Notes may be subject to tax if we make or fail to make certain adjustments to the applicable conversion rate of the Notes even though such holders do not receive a corresponding cash distribution.

The conversion rate of the Notes is subject to adjustment in certain circumstances, including the payment of cash dividends. If the applicable conversion rate is adjusted as a result of a distribution that is taxable to our common stockholders, such as a cash dividend, a holder of the Notes may be deemed to have received a dividend subject to U.S. federal income tax without the receipt of any cash. In addition, a failure to adjust (or to adjust adequately) the applicable conversion rate after an event that increases a holder's proportionate interest in us could be treated as a deemed taxable dividend to the holder. See the section titled "Material U.S. Federal Income Tax Consequences."

The price of our securities has been and may in the future be volatile or may decline regardless of our operating performance, and you could lose all or part of your investment.

Our stock price has been and may continue to be volatile. The daily closing market price for our common stock has varied significantly in the last 12 months, ranging between a high price of \$28.10 on November 15, 2022 and a low price of \$2.68 on October 4, 2023. During this time, the price per share of common stock has ranged from an intra-day low of \$2.61 per share to an intra-day high of \$30.10 per share.

The trading price of our securities is likely to be highly volatile and could be subject to wide fluctuations in response to various factors, some of which are beyond our control, including limited trading volume. We cannot predict the actions of market participants and, therefore, can offer no assurances that the market for our common stock will be stable or appreciate over time. The market price of our common stock may be influenced by many factors, including but not limited to:

- our commercial progress in marketing and selling our genome analysis systems, including sales and revenue trends;
- changes in laws or regulations applicable to our systems;
- adverse developments related to our laboratory facilities;
- increased competition in the diagnostics services industry;
- changes in the structure or funding of research at academic and governmental research institutions, as well as pharmaceutical, biotechnology and contract research companies, including changes that would affect their ability to purchase our products, consumables and technologies;
- the failure to obtain and/or maintain coverage and adequate reimbursement for our Bionano Laboratories products and diagnostic assays and patients' willingness to pay out-of-pocket in the absence of such coverage and adequate reimbursement;
- the failure of our customers to obtain and/or maintain coverage and adequate reimbursement for their services using our Saphyr systems, Ionic Purification systems or our NxClinical software;
- adverse developments concerning our manufacturers and suppliers;
- our inability to establish future collaborations;
- additions or departures of key scientific or management personnel;
- introduction of new testing services offered by us or our competitors;
- announcements of significant acquisitions, dispositions, strategic partnerships, joint ventures or capital commitments by us or our competitors;
- our ability to effectively manage our growth;
- the size and growth, if any, of our targeted markets;
- the failure or discontinuation of any of our product development and research programs;
- actual or anticipated variations in quarterly operating results;
- our cash position;

- our failure to meet the estimates and projections of the investment community and securities analysts or that we may otherwise provide to the public;
- publication of research reports about us or our industries or positive or negative recommendations or withdrawal of research coverage by securities analysts;
- changes in the market valuations of similar companies;
- overall performance of the equity markets;
- issuances of debt or equity securities;
- sales of our securities by us or our stockholders in the future;
- trading volume of our securities;
- changes in accounting practices;
- ineffectiveness of our internal controls;
- data breaches of our company, providers, vendors or customers;
- regulatory or legal developments in the United States and other countries;
- disputes or other developments relating to proprietary rights, including our ability to adequately protect our proprietary rights in our technologies;
- significant lawsuits, including patent or stockholder litigation;
- natural disasters, infectious diseases, conflict, including the ongoing military conflict between Russia and Ukraine and the related sanctions, civil unrest, epidemics or pandemics including COVID-19, outbreaks, resurgences or major catastrophic events;
- general political and economic conditions, including recent and potential future disruptions in access to bank deposits or lending commitments due to bank failures;
- our cost savings initiative announced in May 2023
- the reverse stock split of our common stock effected on August 4, 2023
- other events or factors, many of which are beyond our control; and
- other uncertainties affecting us including those described in the sections titled “Risk Factors” in this prospectus supplement, in our most recent Annual Report on Form 10-K, in our Quarterly Reports on Form 10-Q and in our Current Reports on Form 8-K filed with the SEC.

As a result, you may not be able to sell your shares of our common stock at or above the price at which you purchase them. In addition, the stock market in general, and the market for life science technology companies in particular (including companies in the diagnostic, genomic and biotechnology related sectors), have experienced extreme price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of these companies. Broad market and industry factors may negatively affect the market price of our securities, regardless of our actual operating performance. In the past, securities class action litigation has often been instituted against companies following periods of volatility in the market price of a company’s securities. Because of the volatility of our stock price, we may become the target of securities litigation in the future. This type of litigation, if instituted, could result in substantial costs and a diversion of management’s attention and resources, which would harm our business, operating results or financial condition.

We cannot assure you that an active trading market will develop for the Notes.

Prior to this offering, there has been no trading market for the Notes, and we do not intend to apply to list the Notes on any securities exchange or to arrange for quotation on any automated dealer quotation system. As a result, we cannot assure you that an active trading market will develop for the Notes. If an active trading market does not develop or is not maintained, the market price and liquidity of the Notes may be adversely affected. In that case holders may not be able to sell their Notes at a particular time or they may not be able to sell their Notes at a favorable price.

There is no public market for the Warrants being offered in this offering.

There is no established public trading market for the Warrants being offered in this offering, and we do not expect a market to develop. In addition, we do not intend to apply to list the Warrants on any securities exchange or nationally recognized trading system. Without an active market, the liquidity of the Warrants will be limited.

Holders of our Warrants and the Notes will have no rights as a common stockholder until they exercise their Warrants and/or convert their Notes to acquire our common stock.

Until you acquire shares of our common stock upon exercise of your Warrants and/or the conversion of your Notes, except as otherwise provided under the Warrants and the Notes, you will have no rights with respect to shares of our common stock issuable upon exercise of your Warrants or the conversion of the Notes. Upon exercise of your Warrants and conversion of the Notes, you will be entitled to exercise the rights of a common stockholder only as to matters for which the record date occurs after the exercise date.

The Warrants may not have any value.

The Warrants have an exercise price per share of \$3.1855 per share, subject to certain adjustments, will become exercisable commencing on the date of issuance and will expire five years from the date of issuance, after which date any unexercised Warrants will expire and have no further value. In the event our common stock price does not exceed the exercise price of the Warrants during the period when the Warrants are exercisable, the Warrants may not have any value.

Significant holders or beneficial holders of our common stock may not be permitted to exercise the Warrants that they hold.

A holder will not have the right to exercise any portion of a Warrant if the holder (together with its affiliates) would beneficially own in excess of 4.99% of the number of shares of our stock outstanding immediately after giving effect to the exercise, as such percentage ownership is determined in accordance with the terms of the Warrants. However, any holder may increase or decrease such percentage to any other percentage not in excess of 9.99%, provided that any increase in such percentage shall not be effective until 61 days after such notice to us. As a result, you may not be able to exercise your Warrants for shares of our common stock at a time when it would be financially beneficial for you to do so. In such circumstance you could seek to sell your common stock Warrants to realize value, but you may be unable to do so.

We may not receive any additional funds upon the exercise of the Warrants.

Each Warrant may be exercised by way of a cashless exercise if at the time of exercise hereof there is no effective registration statement registering, or the prospectus contained therein is not available for the issuance of, the common stock to the holder. Accordingly, we may not receive any additional funds upon exercise of the Warrants offered hereby.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus supplement and the accompanying prospectus, including the documents incorporated by reference herein and therein, and any free writing prospectus that we have authorized for use in connection with this offering, contain forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. These statements are based on our management's current beliefs, expectations and assumptions about future events, conditions and results and on information currently available to us. Discussions containing these forward-looking statements may be found, among other places, in the sections titled "Business," "Risk Factors" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" incorporated by reference from our most recent Annual Report on Form 10-K and our most recent Quarterly Report on Form 10-Q filed with the SEC, as well as any amendments thereto reflected in subsequent filings with the SEC.

Any statements in this prospectus supplement or the accompanying prospectus, or incorporated by reference herein or therein, and any free writing prospectus, about our expectations, beliefs, plans, objectives, assumptions or future events or performance are not historical facts and are forward-looking statements. Within the meaning of Section 27A of the Securities Act and Section 21E of the Securities and Exchange Act of 1934, as amended (the "Exchange Act"), these forward-looking statements may include, but are not limited to, statements regarding:

- our ability to finance our operations and business initiatives, including our ability to successfully implement our strategic restructuring plan and other cost-reduction activities;
- the size and growth potential of the markets for our products, and our ability to serve those markets;
- the rate and degree of market acceptance of our products;
- our ability to manage the growth of our business and integrate acquired businesses;
- our ability to expand our commercial organization to address effectively existing and new markets that we intend to target;
- the impact from future regulatory, judicial, and legislative changes or developments in the U.S. and foreign countries;
- our ability to successfully execute our strategy and meet anticipated goals and milestones;
- our ability to compete effectively in a competitive industry;
- the introduction of competitive technologies or improvements in existing technologies and the success of any such technologies;
- the performance of our third-party contract sales organizations, suppliers and manufacturers;
- our ability to attract and retain key scientific or management personnel;
- the accuracy of our estimates regarding expenses, future revenues, reimbursement rates, capital requirements and needs for additional financing;
- the impact of geopolitical and macroeconomic developments, such as the ongoing conflict between Ukraine and Russia, related sanctions and global pandemics on our business and operations, as well as the business or operations of our suppliers, customers, manufacturers, research partners and other third parties with whom we conduct business and our expectations with respect to the duration of such impacts and the resulting effects on our business;

- our ability to realize the anticipated benefits and synergies of our recent and any future acquisitions or other strategic transactions;
- use of our existing cash and cash equivalents, available-for-sale securities and the intended use of the net proceeds from this offering of our securities under this prospectus supplement;
- our ability to continue as a going concern and our ability to obtain funding for our operations;
- our ability to attract collaborators and strategic partnerships; and
- other uncertainties affecting us including those described in the sections titled “Risk Factors” in this prospectus supplement, in our most recent Annual Report on Form 10-K, in our Quarterly Reports on Form 10-Q and in our Current Reports on Form 8-K filed with the SEC.

In some cases, you can identify forward-looking statements by terminology such as “anticipate,” “believe,” “continue,” “could,” “estimate,” “expects,” “intend,” “may,” “might,” “plan,” “potential,” “predict,” “project,” “should,” “will,” “would” or the negative or plural of those terms, and similar expressions intended to identify statements about the future, although not all forward-looking statements contain these words. These statements involve known and unknown risks, uncertainties and other factors that may cause our actual results, levels of activity, performance or achievements to be materially different from the information expressed or implied by these forward-looking statements. In addition, statements that “we believe” and similar statements reflect our beliefs and opinions on the relevant subject. These statements are based upon information available to us as of the date of this prospectus supplement, and while we believe such information forms a reasonable basis for such statements, such information may be limited or incomplete, and our statements should not be read to indicate that we have conducted an exhaustive inquiry into, or review of, all potentially available relevant information. These statements are inherently uncertain and investors are cautioned not to unduly rely upon these statements.

You should refer to the risks and uncertainties described in the sections titled “Risk Factors” in this prospectus supplement, the accompanying prospectus and any related free writing prospectus, and under similar headings in the other documents that are incorporated by reference into this prospectus supplement and the accompanying prospectus, for a discussion of important factors that may cause our actual results to differ materially from those expressed or implied by our forward-looking statements. Given these risks, uncertainties and other factors, many of which are beyond our control, we cannot assure you that the forward-looking statements in this prospectus supplement and the accompanying prospectus will prove to be accurate, and you should not place undue reliance on these forward-looking statements. Although we believe that the expectations reflected in the forward-looking statements are reasonable, we cannot guarantee that the future results, levels of activity, performance or events and circumstances reflected in the forward-looking statements will be achieved or occur. Furthermore, if our forward-looking statements prove to be inaccurate, the inaccuracy may be material. In light of the significant uncertainties in these forward-looking statements, you should not regard these statements as a representation or warranty by us or any other person that we will achieve our objectives and plans in any specified time frame, or at all.

Except as required by law, we assume no obligation to update these forward-looking statements publicly, or to revise any forward-looking statements to reflect events or developments occurring after the date of this prospectus supplement, even if new information becomes available in the future.

USE OF PROCEEDS

We expect to receive approximately \$75.6 million in net proceeds from this offering and the Concurrent Private Placement, after deducting estimated offering expenses payable by us and the fee of the Placement Agents, assuming no exercise of the Warrants offered hereby. If the Purchaser's option to purchase the Additional Notes is exercised, we estimate that we will receive net proceeds of up to approximately \$99.1 million.

We currently intend to use the net proceeds from this offering and the Concurrent Private Placement, together with our existing cash and cash equivalents and available-for-sale securities, for working capital and general corporate purposes, including research and development expenses and capital expenditures.

As of June 30, 2023, we had \$77.1 million in cash, cash equivalents and short-term investments. Based on our current business plans, we believe that the net proceeds from this offering and the Concurrent Private Placement, together with our existing cash, cash equivalents and short-term investments, will be sufficient to fund our operating expenses and capital expenditure requirements through at least 2024. However, this estimate assumes the inclusion of \$35.0 million that we are required to hold as restricted cash in the Restricted Cash Account (as defined in "Description of Securities We Are Offering - Funding Conditions"), which cash may only be released from such account upon the satisfaction of the Funding Conditions (as defined in "Description of Securities We Are Offering - Funding Conditions"). We expect the Funding Conditions may be difficult to achieve, and there is no assurance that we will be able to meet the Funding Conditions and access such restricted cash. Excluding this amount of restricted cash, we expect that the net proceeds from this offering and the Concurrent Private Placement, together with our existing cash, cash equivalents and short-term investments will only be sufficient to fund our operating expenses and capital expenditure requirements through at least into the third quarter of 2024. In either situation, the net proceeds from this offering and the Concurrent Private Placement, together with our existing cash and cash equivalents and available-for-sale securities, will not be sufficient for us to achieve cash-flow break even and we expect to need to seek additional capital based on favorable market conditions or strategic considerations alternatives in the future. We have based this estimate on assumptions that may prove to be wrong, and we could use our capital resources sooner than we currently expect, requiring us to seek additional funds sooner than planned, through public or private equity or debt financings or other sources, such as strategic collaborations. The various ways we could raise additional capital carry potential risks, see "Risk Factors—Risks Related to this Offering—Our future capital needs are uncertain and even with the net proceeds from this offering and the Concurrent Private Placement, we will require additional funding in the future to advance the commercialization of our optical genome mapping systems, Ionic Purification system, VIA software, and our other products, technologies and services, as well as continue our research and development efforts. If we fail to obtain additional funding, we will be forced to delay, reduce or eliminate our commercialization and development efforts."

Our expected use of net proceeds from this offering and the Concurrent Private Placement represents our intentions based on our present plans and business conditions, which could change as our plans and business conditions evolve. The amounts and timing of our use of the net proceeds from this offering and the Concurrent Private Placement will depend on a number of factors, such as the timing and progress of our research and development efforts, the timing and progress of any partnering and commercialization efforts, technological advances and the competitive environment for our products. We may also use a portion of the net proceeds from this offering to in-license, acquire, or invest in complementary businesses, technologies, products or assets. However, we have no current plans, commitments or obligations to do so. As of the date of this prospectus supplement, we cannot specify with certainty all of the particular uses for the net proceeds to us from the sale of the securities offered by us hereunder. Accordingly, our management will retain broad discretion over the use of such proceeds. Pending these uses, we intend to invest the net proceeds primarily in money market mutual funds, obligations of the U.S. government and its agencies, money market instruments including commercial paper and negotiable certificates of deposit and corporate bonds.

The net proceeds from this offering and the Concurrent Private Placement, together with our existing cash and cash equivalents and available-for-sale securities, will not be sufficient for us to achieve cash-flow break even and we expect to need to seek additional capital opportunistically based on favorable market conditions or strategic considerations alternatives in the future.

DIVIDEND POLICY

We have never declared or paid cash dividends on our capital stock. We currently intend to retain any future earnings for use in the operation of our business and do not intend to declare or pay any cash dividends in the foreseeable future. Any future determination to pay dividends on our capital stock would be at the discretion of our board of directors, subject to applicable laws, and would depend on our financial condition, results of operations, capital requirements, general business conditions and other factors that our board of directors considers relevant.

DESCRIPTION OF SECURITIES WE ARE OFFERING

We are offering (i) \$45,000,000 aggregate principal amount of the Notes and (ii) Warrants to purchase up to 21,660,650 shares of our common stock, pursuant to this prospectus supplement and the accompanying prospectus. We are also registering for resale the shares of our common stock issuable from time to time upon conversion of the Notes and exercise of the Warrants offered hereby.

The following is a summary of the material terms and provisions of the Notes and Warrants that are being offered hereby. This summary is subject to and qualified in its entirety by the form of Note and related security documents and the form of Warrant, each of which will be filed with the SEC as an exhibit to a Current Report on Form 8-K to be filed by us in connection with this offering and incorporated by reference into the registration statement of which this prospectus supplement and the accompanying prospectus form a part. Prospective investors should carefully review the terms and provisions of the form of Note and related security documents and the form of Warrant for a complete description of the terms and conditions of the Notes and Warrants, respectively. See the section titled “Where You Can Find Additional Information” in this prospectus supplement.

Notes

We will issue the Notes offered by this prospectus supplement and the accompanying prospectus as a series of our senior debt securities described in the accompanying prospectus to the Purchaser.

For purposes of this summary, the terms “Company”, “we”, “us” and “our” refer only to Bionano Genomics, Inc. and not to any of our subsidiaries.

General

The Notes will be our senior secured obligations. We will issue \$45,000,000 aggregate principal amount of the Notes at the closing of the offering, which is expected to occur on October 13, 2023 or such later date as we and the Purchaser may agree (the “Closing Date”). We are selling the Notes to the Purchaser pursuant to the Purchase Agreement at an issue price of 100.00% of their principal amount. The Notes will be limited in aggregate principal amount to \$45,000,000.

The entire principal amount of the Notes will mature and become due and payable on September 1, 2025, unless earlier repurchased, redeemed or converted. On the maturity date, we will pay the holders an amount of cash equal to 115% for the then-outstanding principal amount of the Notes (the “Maturity Principal Amount”) plus any accrued and unpaid interest on the Notes.

The Notes are not subject to any sinking fund provision.

Concurrently with our issuance of the Notes, we will also issue an additional series of senior secured convertible notes due 2025 (the “Private Placement Notes”) to the Purchaser in a direct offering to the Purchaser that is exempt from registration under the Securities Act on substantially the same terms as the Notes.

In addition, the Purchaser will have the option to purchase an additional \$25,000,000 aggregate principal amount of the senior secured convertible notes due 2025 in a private placement exempt from the registration requirements of the Securities Act, on substantially the same terms as the Notes being offered by this prospectus supplement and the accompanying prospectus (the “Additional Notes”).

Ranking

As described below under “—Security,” the Notes will be our senior secured obligations, will be *pari passu* with the Private Placement Notes and any Additional Notes, senior in right of payment to all of our indebtedness that is expressly subordinated to the Notes in right of payment, effectively senior to all our unsecured indebtedness to the extent of the collateral securing the Notes, effectively junior to all of our indebtedness secured by permitted liens, to the extent of the value of the assets subject to such permitted liens and to the extent such permitted liens have lien priority by contract or law and structurally junior to all indebtedness and other liabilities (including trade payables) of our subsidiaries that are not party to the security documents (as defined in “—Security”). If we acquire or form a subsidiary, other than certain foreign subsidiaries exempted under the terms of the Notes, such subsidiary will be required to become a party to the security documents within 30 days. In the event of our bankruptcy, liquidation, reorganization or other winding up, the assets of our subsidiaries that are not party to the security documents will be available to pay obligations on the Notes only after all indebtedness and other liabilities (including trade payables) of such subsidiaries have been repaid in full.

Security

The Purchase Agreement provides that, on the Closing Date, we will deliver to the collateral agent for the Purchaser under the Notes (the “Collateral Agent”) a U.S. security agreement and a U.S. intellectual property security agreement (collectively, the “security documents”), which will create a first lien, subject only to certain permitted liens, on substantially all of the tangible and intangible assets, now owned and hereafter created or acquired (except for certain excluded property) by us and the subsidiaries party to the security documents.

Interest; Default Interest

The Notes will not bear regular interest. If a Default or an Event of Default (each as defined in “—Events of Default”) occurs, then in each case, to the extent lawful, interest will automatically accrue on the Notes outstanding as of the date of such Default or Event of Default at a rate per annum equal to 15%, from, and including, the date of such Default or Event of Default, as applicable, to, but excluding, the date such Default is cured and all outstanding Default Interest under this Note has been paid.

Funding Conditions

On the Closing Date, \$35,000,000 of the aggregate purchase price of the Notes and the Private Placement Notes will be deposited into a bank account subject to a “holder directed” account control agreement that does not provide us or our subsidiaries access to the amounts in such account and only permits funds to be released from such account upon the direction of the Collateral Agent (the “Restricted Cash Account”). Not more than once per calendar month (unless the Collateral Agent otherwise agrees), we may request the Collateral Agent to release cash to us from the Restricted Cash Account by delivering a written request duly executed by our chief executive officer or chief financial officer to the Collateral Agent (a “Restricted Cash Request”), including the amount of cash requested to be released and certifying to the satisfaction of the Funding Conditions (as defined below) specified below as of the date of such request, at least two Trading Days prior to the last day of a calendar month in order to make an effective election for such calendar month. Subject to the Funding Conditions (any of which may be waived by the Collateral Agent) continuing to be satisfied through and including the date upon which cash is released from the Restricted Cash Account, the Collateral Agent will cause the amount of cash set forth in the applicable request to be released to us from the Restricted Cash Account on the first business day of the calendar month commencing immediately following the receipt of such Restricted Cash Request (such date a “Restricted Cash Release Date”); provided that, if the Restricted Cash Request is delivered less than two Trading Days prior to the last day of a calendar month, the Restricted Cash Release Date shall be the first calendar day of the second calendar month following the calendar month in which the Restricted Cash Request is delivered.

“Funding Conditions” will be deemed to be satisfied as of any date if (A) the average daily dollar trading volume (as reported on Bloomberg) of our common stock on The Nasdaq Stock Market during the ten Trading Days prior to the date on which a Restricted Cash Request is delivered is not less than \$3,500,000; (B) the holder is not in possession of any material non-public information concerning us or any of our subsidiaries, which material non-public information was provided to the holder by or on behalf of us or by or on behalf of any of our employees, agents or advisors; (C) no pending, proposed or intended Fundamental Change or Fundamental Transaction (as defined in the Purchase Agreement) has occurred that has not been abandoned, terminated or consummated; (D) no Default will have occurred or be continuing and no Event of Default will have occurred; (E) our “Adjusted Indebtedness” (as defined below) is less than 25% of our daily market capitalization as calculated on each Trading Day during the 20 consecutive Trading Day period ending on the Trading Day immediately prior to the Restricted Cash Release Date, (F) the Resale Registration Statement (as defined in the Purchase Agreement) registering all shares of our common stock required to be registered pursuant to the Purchase Agreement shall be effective; (G) our common stock (1) shall be listed on The Nasdaq Stock Market and (2) shall not have been suspended by the SEC or Nasdaq from trading on The Nasdaq Stock Market nor shall suspension by the SEC or Nasdaq have been threatened either (x) in writing by the SEC or Nasdaq or (y) by falling below the minimum maintenance requirements of Nasdaq; and (H) we have no reason to believe that the ATM Program or Equity Line of Credit, as applicable, will not be accessible for the foreseeable future, but in any event not less than 12 months from such date. Notwithstanding the foregoing, any waiver of our satisfaction of any Funding Condition will only apply to the Restricted Cash Request and Restricted Cash Release Date to which such Funding Condition so waived relates.

“Adjusted Indebtedness” means (A) our total indebtedness at the time a Restricted Cash Request is delivered, less (B) an amount equal to the difference of (i) the balance of the Restricted Cash Account at the time a Restricted Cash Request is delivered less (ii) the amount of such Restricted Cash Request.

Redemption

Partial Redemption at the Option of the Holder

Beginning on November 1, 2023, on the first calendar day of each month through, and including, the Maturity Date (each, a “*Partial Redemption Date*”), the holders of the Notes will have the right to require us to redeem up to \$4,500,000 in aggregate principal amount of the Notes and Private Placement Notes for a Partial Redemption Payment, payable in cash.

A “*Partial Redemption Payment*” is an amount equal to 115% of the principal amount of a Note being redeemed.

Partial Redemption Payments will be applied to either the Notes or the Private Placement Notes at the holders’ option.

Notwithstanding the foregoing, holders of the Notes may, in their sole discretion, defer any Partial Redemption Payments (including any prior Deferred Partial Redemption Payment) (or any portion thereof) one or more times prior to the applicable Partial Redemption Date to any subsequent Partial Redemption Date (in which case such deferred Partial Redemption Payment shall become a “*Deferred Partial Redemption Payment*”), in which case, on the applicable Partial Redemption Date, we will pay such holders an amount in cash equal to such Partial Redemption Payment (including any Deferred Partial Redemption Payments) to be paid on such date, provided, that the holders may not defer any Partial Redemption Payment or prior Deferred Partial Redemption Payment (or any portion thereof) to the extent that, following such deferral, the total amount of Deferred Partial Redemption Payments outstanding pursuant the Initial Notes would exceed \$10,350,000.

Any Partial Redemption Payment (or applicable portion thereof) will reduce the principal amount of a Note by the paid amount divided by 1.15.

Upon our mutual agreement with the holders of the Notes, we may agree to increase any single Partial Redemption Payment.

Redemption at Our Option

Subject to terms, conditions and certain exceptions set forth in the Notes, we will have the right to redeem all (but not less than all) of the then outstanding principal amount of the Notes (a “*Company Redemption*”), beginning on the 30th day following the date that the Resale Registration Statement became effective, on a date to be determined by us (any such date a “*Company Redemption Date*”), for a cash redemption price equal to the Company Redemption Price (as defined below).

“*Company Redemption Price*” means, unless prior to the Company Redemption Date, (i) any default will have occurred and be continuing or Event of Default will have occurred under the Notes that has not been waived by the Required Holders or (ii) any event or circumstance will have occurred and be continuing which, with the giving of notice or passage of time or both, could constitute an Event of Default and has not been waived by the Required Holders (such circumstances constituting collectively a “*Company Default Redemption*”), means a cash amount equal to the greater of (A) 120% of the outstanding principal amount of the Notes, plus accrued and unpaid interest and (B) the sum of (i) 120% of the product of (a) the applicable conversion rate in effect as of the Trading Day immediately preceding such Company Redemption Date; (b) the total then outstanding principal amount (expressed in thousands) of the Notes; and (c) the highest Daily VWAP per share of our common stock during the period beginning on, and including, the fifth VWAP Trading Day prior to the date that the Company Redemption Notice is delivered and ending on, and including, the VWAP Trading Day immediately preceding such Company Redemption Date and (ii) the accrued and unpaid interest on the Notes. In the event of a Company Default Redemption, Company Redemption Price will mean, a cash amount equal to the greater of (A) the sum of (i) 110% of 115% of the then outstanding principal amount of the Notes and (ii) the accrued and unpaid interest on the Notes and (B) the sum of (i) 120% of the product of (a) the applicable conversion rate in effect as of the Trading Day immediately preceding such Company Redemption Date; (b) the total then outstanding principal amount (expressed in thousands) of the Notes; and (c) the greater of (x) the highest Daily VWAP per share of our common stock occurring during the 30 consecutive VWAP Trading Days ending on, and including, the VWAP Trading Day immediately before the date we deliver notice of our intent to exercise a Company Redemption and (y) the average of the five Daily VWAPs per share of our common stock occurring during the five consecutive VWAP Trading Days ending on, and including, the VWAP Trading Day immediately before the date the applicable Event of Default occurred (or the date on which the default underlying such Event of Default initially occurred, or the date on which the event or circumstance occurred which, with the giving of notice or passage of time or both, could constitute an Event of Default, if different than the date on which the Event of Default occurred) and (ii) the accrued and unpaid interest on the Notes.

Repurchase of the Notes upon a Fundamental Change

If a Fundamental Change occurs, a holder of Note will have the right to require us to repurchase such Note for a cash purchase price equal to the Fundamental Change Repurchase Price, plus accrued interest.

A “*Fundamental Change*” means any of the following events:

- any “person” or “group” (within the meaning of Section 13(d)(3) of the Exchange Act), other than us or our wholly-owned subsidiaries, or our employee benefit plans or those of our wholly-owned subsidiaries, or the holder of any Note or any affiliate of such holder (including a “group” including the holder of any of its affiliates) has become and files any report with the SEC indicating that such person or group has become the direct or indirect beneficial owner (as determined in accordance with Rule 13(d)(3) of the Exchange Act) of share of our common equity representing more than 50% of the voting power of all of our then-outstanding common equity; provided, however, that, for these purposes, no “person” or “group” will be deemed to be the beneficial owner of any securities tendered pursuant to a tender or exchange offer made by or on behalf of such “person” or “group” until such tendered securities are accepted for purchase or exchange under such offer;
- any sale, lease or other transfer, in one transaction or a series of transactions, of all or substantially all of our and our subsidiaries’ assets, taken as a whole, to any person (other than solely to one or more of our wholly-owned subsidiaries); or any transaction or series of related transactions in connection with which (whether by means of merger, consolidation, share exchange, combination, reclassification, recapitalization, acquisition, liquidation or otherwise) all of our common stock is exchanged for, converted into, acquired for, or constitutes solely the right to receive, other securities, cash or other property (other than a subdivision or combination, or solely a change in par value, of our common stock); provided, however, that any merger, consolidation, share exchange or combination of us pursuant to which the persons that directly or indirectly beneficially owned all classes of our common equity immediately before such transaction directly or indirectly beneficially own, immediately after such transaction, more than 50% of all classes of common equity of the surviving, continuing or acquiring company or other transferee, as applicable, or the parent thereof, in substantially the same proportions vis-à-vis each other as immediately before such transaction will be deemed not to be a Fundamental Change pursuant to this clause;
- the approval by our stockholders of a plan or proposal to liquidate or dissolve us; or
- our common stock ceases to be listed on any Eligible Exchange.

The “*Fundamental Change Repurchase Price*” means a cash amount equal to the greater of (A) 115% of the outstanding principal amount of the Note to be so repurchased, plus accrued and unpaid interest on such Note and (B) the sum of (i) 115% of the product of (a) the applicable conversion rate in effect as of the Trading Day immediately preceding the effective date of the Fundamental Change; (b) the total then outstanding principal amount (expressed in thousands) of the Notes repurchased; and (c) the average of the five Daily VWAPs per share of our common stock during the five consecutive VWAP Trading Days immediately preceding the effective date of such Fundamental Change and (ii) the accrued and unpaid interest on the Notes repurchased.

Retirement Fee

On the earlier to occur of (i) the date that no principal amount of the Notes remain outstanding (regardless of whether as a result of redemption, prepayment, payment of the Fundamental Change Repurchase Price, conversion, acceleration upon an Event of Default, or otherwise) or (ii) the Maturity Date, we will pay by wire transfer of immediately available funds the Retirement Fee to the holders of the Notes.

The “*Retirement Fee*” means an amount equal to the product of (x) \$2,812,500 multiplied by (y) a fraction, whose numerator is an amount equal to \$45,000,000 less the aggregate principal amount of the Notes converted into shares of our common stock pursuant to the terms of the Notes during the period beginning on, and including, the issue date of the Notes and ending on, and including, the date on which the Notes cease to be outstanding, and whose denominator is \$45,000,000.

Conversion Rights

General

The conversion rate will initially mean an amount (rounded to the nearest fourth decimal place) equal to a fraction (1) whose numerator is \$1,000; and (2) whose denominator is the sum of (a) \$0.09375 and (b) (A) with respect to the Initial Notes, the Nasdaq Minimum Price (as defined in Nasdaq Rule 5635(d)) on the date of the Purchase Agreement (or, in each case, if such date is not a Trading Day, or if the Purchase Agreement or the is signed before 4:00 p.m., New York City time, the Minimum Price (as defined in Nasdaq Rule 5635(d)) on the immediately preceding Trading Day) shares of common stock per \$1,000 principal amount of the Notes (equivalent to an initial conversion price of approximately \$2.8638 per share of common stock).

The conversion rate with respect to the Notes and the conversion price for Notes in effect at any given time are referred to as the “*applicable conversion rate*” and the “*applicable conversion price*”, respectively, and will also be subject to adjustment as described below. The applicable conversion price at any given time will be computed by dividing \$1,000 by the applicable conversion rate at such time.

Forced Conversion

If a Forced Conversion Trigger occurs, then we may elect to convert the entire principal amount of each Note into shares of our common stock; provided that (x) no forced conversion will be effected unless the Equity Conditions are satisfied on each VWAP Trading Day from the date of our conversion notice until the corresponding conversion consideration, as provided in the Note, is delivered and (y) if we receive a conversion notice from a holder prior to the date we deliver a notice of forced conversion and any conversion due thereunder remain undelivered by us, the forced conversion may not occur until after such conversion shares are delivered to such holder. The principal amount subject to forced conversion shall be subject to reduction by any principal amount for which a holder has submitted a conversion notice between the time that we provided its notice of forced conversion to the holder and the completion of such forced conversion.

“*Forced Conversion Trigger*” means (A) the Last Reported Sale Price exceeds 175% of the then applicable conversion price on at least 20 VWAP Trading Days in any 30 consecutive Trading Day period beginning on any VWAP Trading Day after the effective date with respect to the registration statement registering the resale of the Initial Private Placement Notes and the Underlying Shares pursuant to the Initial Private Placement Notes (as such terms are defined in the Purchase Agreement) and ending on the date upon which we deliver our conversion notice to the holder of the Note and (B) the Equity Conditions are satisfied on the date our conversion notice is delivered by us to the holder.

Additional Conversion Rate Adjustments

The applicable conversion rate, as provided in the Notes, is subject to adjustment as a result of the following events:

- our distribution of a common stock dividend or distribution on all or substantially all shares of our common stock, or our splitting or combining of shares of common stock;
- our issuance to all or substantially all holders of our common stock of rights, options or warrants (other than rights issued or otherwise distributed pursuant to a restricted right plan), entitling the holder, for a period of not more than 60 days after the record date of such distribution, to purchase shares of our common stock at a price less than the average of the Last Reported Sales Prices per share for the 10 consecutive Trading Days ending on the Trading Day immediately before such distribution is announced;
- our distribution of capital stock, evidence of indebtedness or other assets or property of ours, or other rights, options or warrants to acquire capital stock or other securities of ours, to all or substantially all holders of our common stock, subject to certain exceptions set forth in the Notes;
- our distribution or dividend of capital stock or a similar equity interest, which is listed or quoted on a U.S. national securities exchange, as a result of the spinning off of a subsidiary, affiliate or other business unit to all or substantially all holders of our common stock;
- our distribution of cash dividends to all or substantially all holders of our common stock; or
- our payment in respect of a tender or exchange offer for shares of our common stock and the value (determined as of the time such tender offer expires by our Board of Directors) of the cash and other consideration paid per share of common stock in such tender or exchange offer exceeds the Last Reported Sale Price per share of common stock on the Trading Day immediately after the last date on which tenders or exchanges may be made pursuant to such tender or exchange offer.

The conversion consideration, as provided in the Notes, is also subject to adjustment as a result of the following events:

- certain recapitalizations, reclassifications or changes of our common stock;
- certain consolidations, mergers, combinations or binding or statutory share exchanges involving us;
- the sale, lease or other transfer of all or substantially all of our assets; or
- other similar events

Limitations on Conversion

No party may convert all or a portion of a Note or otherwise issue shares of our common stock pursuant to the Note if as a result of the conversion or issuance, a holder and its affiliates would beneficially own in excess of 4.99% of the shares of our common stock. However, upon 61 days' advance notice to us, a holder may increase the limit of beneficially owned shares of our common stock from 4.99% to any amount up to 9.99% of the shares of our common stock. In the event that the issuance of shares of common stock to a holder upon conversion of, or otherwise pursuant to, the Notes results in such holder and its affiliates being deemed to beneficially own, in the aggregate, more than the maximum percentage described in the preceding sentence of the number of outstanding shares of our common stock (as determined under Section 13(d) of the Exchange Act), the number of shares so issued by which the holder's and its affiliates' aggregate beneficial ownership exceeds such maximum percentage will be deemed null and void and will be cancelled ab initio, and the holder will not have the power to vote or to transfer such excess shares; provided, however that, in the event of a forced conversion (as described herein under "—Forced Conversion"), if the aggregate number of shares of our common stock that would otherwise be required to be issued to a holder pursuant to such forced conversion would cause such holder to beneficially own shares of our common stock in excess of the maximum percentage described in the preceding sentence, such shares of common stock in excess of such maximum percentage will 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 its affiliates exceeding the maximum percentage, at which time or times the holder will be issued such shares (and any such shares declared or made on such initial issuance or on any subsequent issuance held similarly in abeyance) to the same extent as if there had been no such limitation.

Certain Covenants

Limitation on Indebtedness

The Notes require that we do not and do not permit any of our subsidiaries to:

- create, incur, assume, guarantee or be or remain liable with respect to any indebtedness, other than Permitted Indebtedness;
- prepay any indebtedness (other than Permitted Indebtedness) except by converting the indebtedness into equity securities (other than certain disqualified stock specified in the Notes) and paying cash in lieu of fractional shares in connection with such conversion;
- amend or modify the terms of any indebtedness (other than Permitted Indebtedness (excluding Permitted Indebtedness under the second and fourth bullet points of the definition thereof)) in such a way as to shorten the maturity date or any amortization, redemption or interest payment date thereof or otherwise impose additional material burdens on us or our subsidiaries without the prior written consent of a holder; or
- incur any indebtedness that would cause a breach or default under the Notes or prohibit or restrict the performance of our obligations under the Notes, including without limitation, the payment of interest and principal thereon.

"Permitted Indebtedness" includes:

- indebtedness under the Notes, the Private Placement Notes and the Additional Notes;
- certain indebtedness existing as of the date of the Purchase Agreement;
- indebtedness to trade creditors incurred in the ordinary course of business consistent with past practices;
- our subordinated indebtedness, but not subordinated indebtedness of our subsidiaries;
- reimbursement obligations in connection with letters of credit or similar instruments that are secured by cash or Cash Equivalents and issued on our behalf or on behalf of our subsidiaries in an aggregate amount not to exceed \$500,000 at any time then outstanding;
- Indebtedness constituting an investment described in the seventh bullet point under "Permitted Investments";
- indebtedness in respect of the financing of insurance premiums in the ordinary course of business;

- indebtedness outstanding at any time secured by liens permitted under the thirteenth bullet of the definition of “Permitted Liens”, provided such indebtedness does not exceed the cost of the equipment or real property interests and related expenses financed with such indebtedness or in the form of purchase money indebtedness (whether in the form of a loan or a lease) used solely to acquire equipment or real property interests used in the ordinary course of business and secured only by such equipment and sale and insurance proceeds in respect thereof; provided that the total amount of Permitted Indebtedness described in this bullet may not exceed \$1,000,000;
- indebtedness to any entity that provides worker’s compensation, health, disability, or other employee benefits or property, casualty or liability insurance to us or any one of our subsidiaries to pay customary reimbursements or indemnities to such entity;
- guarantees or liabilities incurred in the ordinary course of business for performance, surety, statutory, appeal or similar obligations but excluding guaranties for any obligations for borrowed money;
- indebtedness for payment processing services, netting services, overdrafts and related liabilities arising from treasury, depository and cash management services incurred in the ordinary course of business;
- indebtedness for business credit card programs in an aggregate amount not to exceed \$400,000 at any time;
- indebtedness for hedging agreements entered into for bona fide hedging purposes in the ordinary course and not for speculative purposes;
- performance based royalty or milestone obligations, in each case, characterized as such and arising expressly out of purchase and sale contracts, development arrangements or licensing arrangements not otherwise prohibited under the Notes; and
- contingent obligations that are guarantees of Permitted Indebtedness;

provided that the aggregate amount of indebtedness specified in sixth, seventh, ninth, tenth, eleventh and fifteenth bullets above may not collectively exceed \$2,000,000 at any time in the aggregate.

Limitation on Liens

The Notes require that we will not, and will not permit our subsidiaries to, directly or indirectly, create, incur, assume or permit to exist any lien of any kind on any asset now owned or hereafter acquired, other than the following “*Permitted Liens*”:

- liens in favor of holders of the Notes or the Collateral Agent;
- certain liens existing as of the date of the Purchase Agreement;
- liens for taxes, fees, assessments or other governmental charges or levies, either not delinquent or being contested in good faith by appropriate proceedings; provided, that we maintain adequate reserves therefor in accordance with U.S. generally accepted accounting principles (“GAAP”);
- liens securing claims or demands of materialmen, artisans, mechanics, carriers, warehousemen, landlords and other similar persons arising in the ordinary course of business, provided that such claims or demands are not yet delinquent;
- liens arising from judgments, decrees or attachments in circumstances which do not constitute a default or an Event of Default;
- the following deposits, to the extent made in the ordinary course of business: deposits under workers’ compensation, unemployment insurance, social security and other similar laws, or to secure the performance of bids, tenders or contracts (other than for the repayment of borrowed money) or to secure indemnity, performance or other similar bonds for the performance of bids, tenders or contracts (other than for the repayment of borrowed money) or to secure statutory obligations (other than liens arising under ERISA or environmental liens) or surety or appeal bonds, or to secure indemnity, performance or other similar bonds;

- leasehold interests in leases or subleases and licenses granted in the ordinary course of our business and not interfering in any material respect with the business of the licensor;
- liens in favor of customs and revenue authorities arising as a matter of law to secure payment of custom duties that are promptly paid on or before the date they become due;
- liens on insurance proceeds securing the payment of financed insurance premiums that are promptly paid on or before the date they become due (provided that such liens extend only to such insurance proceeds and not to any other property or assets);
- any liens, statutory and common law rights of set-off and other similar rights as to deposits of cash and securities in favor of banks, other depository institutions and brokerage firms;
- easements, zoning restrictions, rights-of-way and similar encumbrances on real property imposed by law or arising in the ordinary course of business, so long as they do not materially impair the value or marketability of the related property;
- liens on cash or Cash Equivalents securing obligations permitted under the fifth, eleventh, twelfth and thirteenth bullets of the definition of Permitted Indebtedness;
- purchase money liens, liens in respect of equipment leases, or liens securing indebtedness under the eighth bullet point listed under “Permitted Indebtedness” above, if the lien is confined to the property and improvements and the proceeds of the equipment;
- any other liens, solely to the extent not securing indebtedness for borrowed money, not to exceed collectively \$1,000,000 at any time in the aggregate;
- Permitted Intellectual Property Licenses; and
- liens incurred in connection with the extension, renewal or refinancing of the indebtedness secured by liens of the type described in the third through fifteenth bullets above; provided, that any extension, renewal or replacement lien will be limited to the property encumbered by the existing lien and the principal amount of the indebtedness being extended, renewed or refinanced (as may have been reduced by any payment thereon) does not increase.

Limitation on Investments

The Notes require that we do not directly or indirectly acquire or own, or make any investment in or to any person, or permit any of our subsidiaries to do so, other than the following permitted investments (each, a “*Permitted Investment*”):

- certain investments existing as of the date of the Purchase Agreement;
- investments in cash and Cash Equivalents;
- investments accepted in connection with Permitted Transfers;
- investments (including debt obligations) received in connection with the bankruptcy or reorganization of customers or suppliers and in settlement of delinquent obligations of, and other disputes with, customers or suppliers arising in the ordinary course of our business;

- investments consisting of notes receivable of, or prepaid royalties and other credit extensions, to customers and suppliers in the ordinary course of business and consistent with past practice, provided that this clause shall not apply to investments by us in any subsidiary;
- investments consisting of (i) loans not involving the net transfer on a substantially contemporaneous basis of cash proceeds to employees, officers or directors relating to the purchase of our capital stock pursuant to employee stock purchase plans or other similar agreements approved by our Board of Directors; and (ii) travel advances and employee relocation loans and other employees loans in the ordinary course of business, provided that the aggregate of all such loans outstanding may not exceed \$50,000 in the aggregate;
- investments in wholly-owned subsidiaries, subject to the limitations on Foreign Subsidiaries set forth in “—Limitations on Foreign Subsidiaries”;
- Permitted Intellectual Property Licenses;
- extensions of credit to customers or advances, deposits or payment to or with suppliers, lessors or utilities or for workers’ compensation incurred in the ordinary course of business; and
- additional investments that do not exceed \$500,000 in the aggregate in any twelve-month period.

In addition, the Notes will not permit us to make any investment (including a Permitted Investment), or to permit any of our subsidiaries to make any investment (including a Permitted Investment) (i) if the Notes have automatically accelerated as a result of a payment or bankruptcy Event of Default, (ii) if an Event of Default has occurred, unless we have delivered a notice of such Event of Default to the holders with respect to such Event of Default and the holders have not declared the Notes (or any portion of the principal amount thereunder) to become due and payable in connection with such Event of Default within two business days of the delivery of such notice, or (iii) any event or circumstance has occurred and is continuing which, with the giving of notice or passage of time or both, could constitute an Event of Default with respect to the third, eighth, ninth, tenth or thirteenth bullet points of the definition thereof.

Limitation on Distributions

The Notes require that we do not, and do not permit any subsidiary to:

- repurchase or redeem any class of stock or other equity interest of us or any of our subsidiaries other than (i) pursuant to employee, director or consultant equity incentive plan, stock purchase or repurchase plan or awards granted thereunder or similar agreements provided under plans approved by our Board of Directors, provided, however, that such repurchase or redemption price does not exceed the original consideration paid for such stock or equity interest, (ii) repurchases of equity interests deemed to occur upon the cashless or net exercise of stock options, warrants or other convertible or exchangeable securities, and (iii) repurchases of equity interests deemed to occur upon the withholding of a portion of the equity interests granted or awarded to a current or former officer, director, employee or consultant to pay for the taxes payable by such person upon such grant or award or upon vesting or exercise thereof;
- declare or pay any cash dividend or make a cash distribution on any class of stock or other equity interest of us or any of our subsidiaries, except (i) that a subsidiary of ours may pay dividends or make distributions to us or a parent company that is a direct or indirect wholly-owned subsidiary of ours and (ii) we may make payments of cash in lieu of issuing fractional shares;
- lend money to any employees, officers or directors (except as permitted under the sixth bullet of the definition of Permitted Investment), or guarantee the payment of any such loans granted by a third party in excess of \$50,000; or
- waive, release or forgive any indebtedness owed by any employees, officers or directors in excess of \$50,000.

If there are dividends or distributions made by us or any subsidiary to any third party pursuant to the distributions covenant, within one business day following the date on which we file an Annual Report on Form 10-K or Quarterly Report on Form 10-Q with the SEC, we will provide the holder with a written notice setting forth the aggregate amount of such dividends or distributions made by us or any subsidiary for the period covered by such Annual Report on Form 10-K or Quarterly Report on Form 10-Q, as applicable.

Notwithstanding the foregoing, we will not be permitted to, nor allow any of our subsidiaries to, take the actions described in clause (i) of the first bullet point above in this section, the third bullet point above in this section or the fourth bullet point above in this section if (A) any Event of Default has occurred and has not been waived by the Required Holders or (B) any event or circumstance has occurred and is continuing which, with the giving of notice or passage of time or both, could constitute an Event of Default with respect to the third, fifth, eighth, ninth, tenth or thirteenth bullet points thereof.

Limitation on Transfers

The Notes require that we do not, nor permit our subsidiaries to, voluntarily or involuntarily, transfer, sell, lease, license, lend or in any other manner convey any equitable, beneficial or legal interest in any material portion of our and our subsidiaries' assets (taken as a whole), other than Permitted Transfers and Permitted Investments.

“Permitted Transfers” include:

- dispositions of cash or Cash Equivalents in the ordinary course of business;
- dispositions of inventory, goods and other assets, lease assignments or subleases of any personal property in the ordinary course of business;
- entry into Permitted Intellectual Property Licenses;
- dispositions of worn-out, obsolete or surplus property in the ordinary course of business, provided that if any individual piece of property with a fair market value equal to or greater than \$25,000 is disposed of in reliance on this bullet, such disposition shall be made for fair market value consideration;
- the abandonment or other disposition of intellectual property that is, in our reasonable judgment, no longer profitable, economically practicable to maintain or useful in the conduct of our business or of our subsidiaries' business, taken as a whole;
- dispositions of accounts or payment intangibles (each as defined in the UCC) resulting from the compromise or settlement thereof in the ordinary course of business for less than the full amount thereof;
- transfers consisting of certain Permitted Investments in our wholly-owned subsidiaries (pursuant to the seventh bullet point under the definition of “Permitted Investments”);
- other transfers of assets to any person other than to a joint venture and which have a fair market value of not more than \$50,000 in the aggregate in any twelve-month period;
- dispositions in connection with Permitted Liens;
- the disposition of all or substantially all of our and our subsidiaries' assets in a manner permitted under “—Merger, Consolidation and Sale of Assets” below and any disposition that constitutes a Fundamental Change; and
- subleases of real property.

Minimum Liquidity

We are required to maintain at all times liquidity calculated as unrestricted, unencumbered cash and Cash Equivalents (and for the avoidance of doubt not including any cash or cash equivalents held in the Restricted Cash Account) in one or more deposit accounts and/or securities accounts located in the United States and subject to control agreements in favor of the Collateral Agent in a minimum amount equal to the greater of (i) \$30,000,000 and (ii) the lesser of (x) \$50,000,000 and (y) an amount equal to our cash and Cash Equivalents on the last calendar day of the Fiscal Half immediately preceding the most recently completed Fiscal Half less the Available Cash as of the last calendar day of the most recently completed Fiscal Half (such most recently completed Fiscal Half, the “*Liquidity Cash Burn Period*”).

For purposes of the liquidity covenant:

“*Available Cash*” means, as of any date of determination, (A) the sum of (i) our and our wholly owned subsidiaries’ cash and Cash Equivalents, (ii) any cash paid by us to a holder pursuant to a Note or any Private Placement Note or Additional Note during the Liquidity Cash Burn Period, and (iii) any cash paid by us or any of our wholly owned subsidiaries in respect of Covered Milestone Payments during the Liquidity Cash Burn Period, less (B) any cash actually received pursuant to any financings or series of related financings during the Liquidity Cash Burn Period, including for the avoidance of doubt, from the sale and issuance of our capital stock, convertible securities, equity-linked securities or indebtedness (including, for the avoidance of doubt, cash actually received in connection with the exercise or settlement of any convertible securities or equity-linked securities).

“*Fiscal Half*” means each six-month period ending March 31, June 30, September 30 and December 31.

Limitation on Transaction with Affiliates

The Notes require that we and our subsidiaries do not enter into, renew, extend, or be a party to, any transaction or series of related transactions (including, without limitation, the purchase, sale, lease, transfer or exchange of property or assets of any kind or the rendering of services of any kind) with any affiliate (other than us or any of our wholly owned subsidiaries), except transactions actually disclosed pursuant to the Purchase Agreement, as in effect on the Closing Date, and any transactions for fair consideration and on terms no less favorable than would be obtainable in a comparable arm’s length transaction with a person that is not an affiliate.

Required Funding Programs

So long as any Note remains outstanding, we are required at all times to have access to an ATM Program, Equity Line of Credit, or similar program approved by the Required Holders, with aggregate available, accessible and unused capacity to generate gross proceeds to us of at least \$50,000,000.

“*ATM Program*” means an “at-the-market” offering within the meaning of Rule 415(a)(4) of the Securities Act.

“*Equity Line of Credit*” means an equity line of credit approved by written agreement by the Required Holders (as defined in the Purchase Agreement) (which approval may be granted or revoked at any time by the Required Holders in their sole discretion).

Minimum Cash Spend Availability

So long as any Note remains outstanding, the Notes will require that, for each fiscal quarter beginning with the fiscal quarter ending March 31, 2024 (each such period, a “*Quarterly Cash Burn Period*”), we and our wholly owned subsidiaries’ Available Cash on the last calendar day of such Quarterly Cash Burn Period be an amount greater than or equal to (A) our and our wholly owned subsidiaries’ cash and Cash Equivalents on the last calendar day of the immediately preceding fiscal quarter, less (B) \$30,000,000.

For purposes of the quarterly cash spend covenant:

“*Available Cash*” means, as of any date of determination, (A) the sum of (i) our and our wholly owned subsidiaries’ cash and Cash Equivalents, (ii) any Cash paid by us to a holder pursuant to a Note or any Private Placement Note or Additional Note during the Quarterly Cash Burn Period, and (iii) any cash paid by us or any of our wholly owned subsidiaries in respect of Covered Milestone Payments during the Quarterly Cash Burn Period, less (B) any cash raised from any financings or series of related financings involving the holder during the Quarterly Cash Burn Period.

Merger, Consolidation and Sale of Assets

We will not consolidate with or merge with or into, or (directly, or indirectly through one or more of our subsidiaries) sell, lease or otherwise transfer, in one transaction or a series of transactions, all or substantially all of our and our subsidiaries’ assets, taken as a whole, to another person, other than a holder of a Note or any of its affiliates (a “*Business Combination Event*”), unless:

- the resulting, surviving or transferee person either (x) is us or (y) if not us, is a corporation (the “*Successor Corporation*”) duly organized and existing under the laws of the United States of America, any state thereof or the District of Columbia that expressly assumes (by executing and delivering to the holders, at or before the effective time of such Business Combination Event, a supplement to the Notes) all of the our obligations under the Notes; and
- immediately after giving effect to such Business Combination Event, no Event of Default will have occurred that has not been waived and no Default will have occurred and be continuing which has not been waived.

Limitations on Foreign Subsidiaries

At no time will any intellectual property (regardless of the value of such intellectual property) or any other assets with a fair market value in excess of \$2,000,000 in the aggregate be held by our foreign subsidiaries, unless the holder shall have been previously granted a perfected first lien security interest in such assets pursuant to security documents, in form and substance reasonably acceptable to the Collateral Agent. Notwithstanding the foregoing, no assets may be held by our foreign subsidiaries in the event that holding such assets would be in violation of the security documents.

Other Covenants

We are also required, among other covenants, to:

- maintain our corporate existence and our material rights, licenses and franchises, as well as the material rights, licenses and franchises of our subsidiaries;
- pay when due all taxes, fees or other charges and cause our subsidiaries to do the same;
- file on or before the due date therefor all personal property tax returns and cause our subsidiaries to do the same (except where the failure to pay would not, individually or in the aggregate, have a material effect on us or any of our subsidiaries); provided, that we and our subsidiaries may contest, in good faith and by appropriate proceedings, taxes for which we maintain adequate reserves therefor in accordance with GAAP;
- not engage, directly or indirectly in any material line of business substantially different from those lines of business conducted by or publicly contemplated to be conducted by us as of the issue date or any business substantially related or incidental thereto;
- maintain and preserve all of our tangible properties which are necessary or useful in the proper conduct of our business in good working order and condition, and comply in all material respects with the provisions of all leases to which we or our subsidiaries are a party as lessee or under which we or our subsidiaries occupy property, so as to prevent any loss or forfeiture thereof or thereunder, and cause our subsidiaries to do the same;

- take all action necessary or advisable to maintain and preserve all of our intellectual property rights that are necessary or material to the conduct of our business in full force and effect and cause our subsidiaries to do the same;
- maintain insurance with responsible and reputable insurance companies or associations with respect to our properties and business in such amounts covering such risks as is required by any governmental agency having jurisdiction over us or as is carried generally in accordance with sound business practice by companies in similar businesses similarly situated and cause our subsidiaries to do the same;
- so long as any Note remains outstanding, at all times have no less than a number of authorized but unissued shares of common stock equal to the sum of (i) 100% of the shares of common stock issuable upon the conversion of any warrants issued under the Purchase Agreement and outstanding, which shall be reserved for issuance pursuant to the terms of such warrants, and (ii) a fraction, the numerator of which shall be the then outstanding principal amount of all Notes, Private Placement Notes and Additional Notes issued pursuant to the Purchase Agreement, and the denominator of which shall be the conversion price of the Notes, which shall be reserved for issuance pursuant to the terms of the Notes and (iii) 50,000,000 shares of our common stock, which need not be reserved for issuance pursuant to the terms of such warrants or the Notes; and
- on a monthly basis, and immediately in the event certain Events of Default occur, we will be required to deliver compliance certificates to the holders of the Notes certifying as to our satisfaction of certain specified covenants for the period since the previously submitted compliance certificate.

Events of Default

A “*Default*” means any event that is (or, after notice, passage of time or both, would be) an Event of Default.

An “*Event of Default*” means the occurrence of any of the following:

- a default in the payment when due of any Partial Redemption Payment (or applicable portion thereof), principal amount, Maturity Principal Amount, Fundamental Change Repurchase Price, or the Retirement Fee;
- a default in our obligation to issue shares within three Trading Days of the applicable conversion settlement date;
- a default in our obligation to timely deliver a notice of a Fundamental Change or a Compliance Certificate, and such default continues for three business days, or the delivery of a materially false or inaccurate notice of a Fundamental Change, conversion notice, Compliance Certificate, Restricted Cash Request or notice of our intent to exercise an optional redemption;
- a default in our obligation to timely deliver a notice of an Event of Default or the delivery of a materially false or inaccurate certification as to whether an Event of Default has occurred or whether the Equity Conditions have been satisfied;
- certain defaults in the performance of any of our obligations or agreements under the Notes or the other transaction documents related to the Notes, or a breach of any representation or warranty in any material respect (other than representations or warranties subject to material adverse effect or materiality, which may not be breached in any respect) of any transaction document as of the date when made (except for representations and warranties that speak as of a specific date, which shall be true and correct as of such specific date); provided, however, that if such default or breach can be cured, then such default or breach will not be an Event of Default unless we have failed to cure such default within 20 days after its occurrence;

- any provision of any transaction document related to the Notes at any time for any reason (other than pursuant to the express terms thereof) ceases to be valid and binding on or enforceable against the parties thereto, or the validity or enforceability thereof is contested, directly or indirectly, by us or any of our subsidiaries, or a proceeding is commenced by us or any of our subsidiaries or any governmental authority having jurisdiction over any of them, seeking to establish the invalidity or unenforceability thereof;
- we fail to comply with certain specified covenants, including the covenants described above under “—Limitation on Indebtedness,” “—Limitation on Liens,” “—Limitation on Investments,” “—Limitation on Distributions,” “—Limitation on Transfers,” “—Minimum Liquidity,” “—Minimum Cash Spend Availability”, “—Required Funding Programs”, and “—Limitations on Foreign Subsidiaries”;
- the suspension from trading or failure of our common stock to be trading or listed on our primary Eligible Exchange (measured in terms of trading volume for our common stock) on which our common stock is traded for a period of five consecutive Trading Days;
- (i) our failure or the failure of any of our subsidiaries to pay when due or within any applicable grace period any of our or such subsidiary’s indebtedness having an individual principal amount in excess of at least \$250,000 (or its foreign currency equivalent) in the aggregate; or (ii) the occurrence of any breach or default under any terms or provisions of any of our or any of our subsidiaries’ other indebtedness of at least \$250,000 (or its foreign currency equivalent) in the aggregate, if the effect of such failure or occurrence is to cause or to permit the holder or holders of any such indebtedness, to cause, indebtedness having an individual principal amount in excess of \$250,000 to become or be declared due prior to its stated maturity;
- one or more final judgments, orders or awards (or any settlement of any litigation or other proceeding that, if breached, could result in a judgment, order or award) for the payment of at least \$250,000 (or its foreign currency equivalent) in the aggregate (excluding any amounts covered by insurance pursuant to which the insurer has been notified and has not denied coverage), is rendered against us or the subsidiaries and remains unsatisfied and (i) enforcement proceedings shall have been commenced by any creditor upon any such judgment, order, award or settlement or (ii) there shall be a period of 15 consecutive Trading Days after entry thereof during which (A) a stay of enforcement thereof is not in effect or (B) the same is not vacated, discharged, stayed or bonded pending appeal;
- we fail to timely file our quarterly reports on Form 10-Q or its annual reports on Form 10-K with the SEC in the manner and within the time periods required by the Exchange Act (it being understood that such time periods include any permitted filing deadline extension under Rule 12b-25 under the Exchange Act), or (B) we withdraw or restate (solely with respect to a “Big R” Restatement and not a “little r” restatement) any such quarterly report or annual report previously filed with the SEC or (C) we at any time cease to satisfy the eligibility requirements set forth under Section I.A of the General Instructions to Form S-3;
- any security document related to the Notes shall for any reason fail or cease to create a separate valid and perfected and, except to the extent permitted by the terms of the Notes or thereof, first priority lien on the Collateral, in each case, in favor of the Collateral Agent in accordance with the terms thereof, or any material provision of any such security document shall at any time for any reason cease to be valid and binding on or enforceable against us or the validity or enforceability thereof shall be contested by any party thereto, or a proceeding shall be commenced by us or any governmental authority having jurisdiction over us, seeking to establish the invalidity or unenforceability thereof;
- (A) any material damage to, or loss, theft or destruction of, any material portion of the Collateral (provided that any damage, loss, theft or destruction of the Collateral that reduces the value of such Collateral by \$500,000 or more shall be deemed to be material), whether or not insured, or (B) any strike, lockout, labor dispute, embargo, condemnation, act of God or public enemy, or other casualty which causes, for more than 15 consecutive days, the cessation or substantial curtailment of revenue producing activities at any facility of ours or any subsidiary, if in each case ((A) and (B)) any such event or circumstance could reasonably be expected to have a material adverse effect (as defined in the Purchase Agreement);

- at any time any shares of our common stock issuable pursuant to the Notes are not Freely Tradable;
- we or any of our significant subsidiaries, pursuant to or within the meaning of any Bankruptcy Law, either:
 - o commences a voluntary case or proceeding;
 - o consents to the entry of an order for relief against us or it in an involuntary case or proceeding;
 - o consents to the appointment of a custodian of us or it or for any substantial part of our or its property;
 - o makes a general assignment for the benefit of our creditors;
 - o takes any comparable action under any foreign Bankruptcy Law; or
 - o generally is not paying its debts as they become due;
- a court of competent jurisdiction enters an order or decree under any Bankruptcy Law that either:
 - o is for relief against us or any of our significant subsidiaries in an involuntary case or proceeding;
 - o appoints a custodian of us or any of our significant subsidiaries, or for any substantial part of our property or any of our significant subsidiaries;
 - o orders the winding up or liquidation of us or any of our significant subsidiaries; or
 - o grants any similar relief with respect to us or any of its Significant Subsidiaries under any foreign Bankruptcy Law; or
- our stockholders approve any plan for our liquidation or dissolution.

Acceleration Upon Event of Default and Event of Default Stock Payments

Automatic Acceleration in Certain Circumstances

If an Event of Default set forth in the fifteenth or sixteenth bullets under “—Events of Default” occurs with respect to the us (and not solely with respect to one of our significant subsidiaries), then the then outstanding portion of the Maturity Principal Amount of, and all accrued and unpaid interest on, the Notes will immediately become due and payable without any further action or notice by any person.

Optional Acceleration Upon Event of Default

If an Event of Default (other than an Event of Default set forth in the fifteenth or sixteenth bullets under “—Events of Default”) occurs with respect to us but not solely with respect to one of our subsidiaries and has not been waived, then a holder of a Note may declare such Note to become due and payable on the Business Day immediately following the date of such notice for cash in an amount equal to the Event of Default Acceleration Amount.

“*Event of Default Acceleration Amount*” means a cash amount equal to the greater of (A) the sum of (i) 110% of 115% of the then outstanding principal amount of the Note (or such lesser outstanding principal amount accelerated pursuant to such notice) and (ii) the accrued and unpaid interest on the Note and (B) the sum of (i) 115% of the product of (a) the applicable conversion rate in effect as of the Trading Day immediately preceding the date that the holder of the Note delivers the applicable acceleration notice; (b) the total then outstanding principal amount (expressed in thousands) of the Note; and (c) the greater of (x) the highest Daily VWAP per share of our common stock occurring during the thirty consecutive VWAP Trading Days ending on, and including, the VWAP Trading Day immediately before the date the holder delivers such notice and (y) the average of the five Daily VWAP per share of our common stock occurring during the five consecutive VWAP Trading Days ending on, and including, the VWAP Trading Day immediately before the date the applicable Event of Default occurred (or the date on which the default underlying such Event of Default initially occurred, if different than the date on which the Event of Default occurred) and (ii) the accrued and unpaid interest on the Note.

Certain Definitions

“*Bankruptcy Law*” means Title 11, United States Code, or any similar U.S. federal or state or non-U.S. law for the relief of debtors.

“*Cash Equivalents*” means, as of any date of determination, any of the following: (A) marketable securities (i) issued or directly and unconditionally guaranteed as to interest and principal by the United States Government, or (ii) issued by any agency of the United States the obligations of which are backed by the full faith and credit of the United States, in each case maturing within one year after such date; (B) marketable direct obligations issued by any state of the United States of America or any political subdivision of any such state or any public instrumentality thereof, in each case maturing within one year after such date and having, at the time of the acquisition thereof, a rating of at least A-1 from Standard & Poor’s Corporation or at least P-1 from Moody’s Investors Service; (C) commercial paper maturing no more than one year from the date of creation thereof and having, at the time of the acquisition thereof, a rating of at least A-1 from Standard & Poor’s Corporation or at least P-1 from Moody’s Investors Service; (D) certificates of deposit or bankers’ acceptances maturing within one (1) year after such date and issued or accepted by any commercial bank organized under the laws of the United States of America or any State, or the District of Columbia that (i) is at least “adequately capitalized” (as defined in the regulations of its primary federal banking regulator), and (ii) has Tier 1 capital (as defined in such regulations) of not less than \$5,000,000,000; and (E) shares of any money market mutual fund that (i) has substantially all of its assets invested continuously in the types of investments referred to in clauses (A) and (B) above, (ii) has net assets of not less than \$5,000,000,000, and (iii) has the highest rating obtainable from either Standard & Poor’s Corporation or Moody’s Investors Service.

“*Covered Milestone Payments*” means milestone payments paid by us pursuant to (i) that certain Agreement and Plan of Merger, dated as of November 23, 2022, by and among us, Mazdan Merger Sub, Inc., Purigen Biosystems, Inc. and Shareholder Representative Services LLC, as the Shareholders’ Representative, and (ii) that certain Agreement and Plan of Merger, dated October 8, 2021, by and among us, Starship Merger Sub I, Inc., Starship Merger Sub II, LLC, BioDiscovery, Inc., and Soheil Shams, as the Securityholders’ Representative, as amended by that certain First Amendment to Agreement and Plan of Merger, dated as of March 4, 2023, as such agreements are in effect as of the date of the Purchase Agreement.

“*Daily VWAP*” means, for any VWAP Trading Day, the per share volume-weighted average price of our common stock on The Nasdaq Stock Market (or the principal, in terms of volume, Eligible Exchange on which our common stock is listed for trading) as displayed under the heading “Bloomberg VWAP” on Bloomberg page “BNGO <EQUITY> VAP” (or, if such page is not available, its equivalent successor page) in respect of the period from the scheduled open of trading until the scheduled close of trading of the primary trading session on such VWAP Trading Day (or, if such volume-weighted average price is unavailable, the market value of one share of our common stock on such VWAP Trading Day, determined, using a volume-weighted average price method, by a nationally recognized independent investment banking firm selected by us). The Daily VWAP will be determined without regard to after-hours trading or any other trading outside of the regular trading session.

“*Eligible Exchange*” means any of The New York Stock Exchange, The NYSE American LLC, The Nasdaq Stock Market, The Nasdaq Capital Market, The Nasdaq Global Market or The Nasdaq Global Select Market (or any of their respective successors).

“*Equity Conditions*” will be deemed to be satisfied as of any date if all of the following conditions are satisfied: as of such date and on each of the 30 previous VWAP Trading Days (A) the holder is not in possession of any material non-public information provided by or on behalf of us or by or on behalf of any of our employees, agents or advisors; (B) the issuance of such shares will not be limited as provided under “—Limitations on Conversions”; (C) such shares will be newly issued or treasury shares and will be duly and validly issued, fully paid, non-assessable, free from preemptive rights and free of any lien or adverse claim, and will satisfy certain conditions set forth in the Notes; (D) no pending, proposed or intended Fundamental Change has occurred that has not been abandoned, terminated or consummated; (E) the daily dollar trading volume (as reported on Bloomberg) of our common stock on The Nasdaq Stock Market is not less than \$3,500,000; (F) no Default will have occurred and be continuing and no Event of Default will have occurred which has not been waived; and (G) the shares issuable pursuant to the Notes are Freely Tradable.

“*Equity Interest*” shall mean, with respect to any person, any and all shares, interests, participations or other equivalents, including preferred stock or membership interests (however designated, whether voting or non-voting), of equity of such person, including, if such person is a partnership, partnership interests (whether general or limited) and including, without limitation, any “equity security” (as that term is defined under Rule 405 promulgated under the Securities Act), and any other interest or participation that confers on a person the right to receive a share of the profits and losses of, or distributions of assets of, such partnership; provided that, the Notes shall not constitute Equity Interests.

“*Foreign Subsidiary*” means any Subsidiary that is organized under the laws of a jurisdiction other than the United States of America, any state thereof or the District of Columbia.

“*Freely Tradable*” means, with respect to any shares of our common stock issued or issuable pursuant to a Note, that (A) such shares are (or, when issued, will be) issued by us pursuant to an effective registration statement and would not constitute “restricted securities” within the meaning of Rule 144 under the Securities Act and without any requirement for registration under any state securities or “blue sky” laws; (B) such shares are (or, when issued, will be) (i) represented by book-entries at DTC and identified therein by an “unrestricted” CUSIP number; (ii) not represented by any certificate that bears a legend referring to transfer restrictions under the Securities Act or other securities laws; and (iii) listed and admitted for trading, without suspension or material limitation on trading, on an Eligible Exchange; and (C) no delisting or suspension by such Eligible Exchange is pending or has been threatened (with a reasonable prospect of delisting occurring after giving effect to all applicable notice, appeal, compliance and hearing periods) or reasonably likely to occur or pending as evidenced by (x) a writing by such Eligible Exchange or (y) our fall below the minimum listing maintenance requirements of such Eligible Exchange.

“*Last Reported Sale Price*” of the shares of our common stock for any Trading Day means the closing sale price per share (or, if no closing sale price is reported, the average of the last bid price and the last ask price per share or, if more than one in either case, the average of the average last bid prices and the average last ask prices per share) of our common stock on such Trading Day as reported in composite transactions for the principal U.S. national or regional securities exchange on which the shares of common stock are then listed. If our common stock is not listed on a U.S. national or regional securities exchange on such Trading Day, then the Last Reported Sale Price will be the last quoted bid price per share of our common stock on such Trading Day in the over-the-counter market as reported by OTC Markets Group Inc. or a similar organization. If our common stock is not so quoted on such Trading Day, then the Last Reported Sale Price will be the average of the mid-point of the last bid price and the last ask price per share of our common stock on such Trading Day from a nationally recognized independent investment banking firm selected by us. The “Last Reported Sale Price” will be determined without regard to after-hours trading or any other trading outside of the regular trading session.

“*Market Disruption Event*” means, with respect to any date, the occurrence or existence, during the one-half hour period ending at the scheduled close of trading on such date on the principal, in terms of volume, Eligible Exchange on which our common stock is listed for trading or trades, of any material suspension or limitation imposed on trading (by reason of movements in price exceeding limits permitted by the relevant exchange or otherwise) in our common stock or in any options contracts or futures contracts relating to our common stock.

“*Permitted Intellectual Property Licenses*” means (A) intellectual property licenses actually disclosed pursuant to the Purchase Agreement as of the date of the Purchase Agreement and (B) non-perpetual intellectual property licenses granted in the ordinary course of business on arm’s length terms consisting of the licensing of technology, the development of technology or the providing of technical support which may include licenses with unlimited renewal options solely to the extent such options require mutual consent for renewal or are subject to financial or other conditions as to the ability of licensee to perform under the license; provided such license was not entered into during an Event of Default or continuance of a default.

“*Required Holders*” means the holders of a majority of the Underlying Shares (as defined in the Purchase Agreement) in the aggregate as of such time issued or issuable hereunder or pursuant to the Notes or Warrants, as applicable.

“*Trading Day*” means any day on which (A) trading in our common stock generally occurs on the principal U.S. national or regional securities exchange on which our common stock is then listed or, if our common stock is not then listed on a U.S. national or regional securities exchange, on the principal, in terms of volume, Eligible Exchange on which our common stock is listed for trading; and (B) there is no Market Disruption Event, provided that the holder, by written notice to us, may waive any such Market Disruption Event. If our common stock is not so listed or traded, then “*Trading Day*” means a business day.

“*UCC*” means the Uniform Commercial Code as the same is, from time to time, in effect in the State of New York.

“*VWAP Market Disruption Event*” means, with respect to any date, (A) the failure by the principal U.S. national or regional securities exchange on which our common stock is then listed, or, if our common stock is not then listed on a U.S. national or regional securities exchange, the principal, in terms of volume, Eligible Exchange on which our common stock is then traded, to open for trading during its regular trading session on such date; or (B) the occurrence or existence, for more than one half hour period in the aggregate, of any suspension or limitation imposed on trading (by reason of movements in price exceeding limits permitted by the relevant exchange or otherwise) in our common stock or in any options contracts or futures contracts relating to our common stock, and such suspension or limitation occurs or exists at any time before 1:00 p.m., New York City time, on such date.

“*VWAP Trading Day*” means a day on which (A) there is no VWAP Market Disruption Event, provided that the holder, by written notice to us, may waive any such VWAP Market Disruption Event; and (B) trading in our common stock generally occurs on the principal U.S. national or regional securities exchange on which our common stock is then listed or, if our common stock is not then listed on a U.S. national or regional securities exchange, on the principal, in terms of volume, Eligible Exchange on which our common stock is then traded. If our common stock is not so listed or traded, then “*VWAP Trading Day*” means a business day.

Warrants

Duration and Exercise Price. Each Warrant offered hereby will have an initial exercise price per share equal to \$3.1855 per share. The Warrants are immediately exercisable and will expire on the fifth anniversary of the original issuance date. The exercise price and number of shares of our common stock issuable upon exercise is subject to appropriate adjustment in the event of stock dividends, stock splits, recapitalization, reorganizations or similar events affecting our common stock and the exercise price.

Exercisability. The Warrants are exercisable, at the option of each holder, in whole or in part, by delivering to us a duly executed exercise notice accompanied by payment in full for the number of shares of our common stock purchased upon such exercise (except in the case of a cashless exercise as discussed below). A holder (together with its affiliates) may not exercise any portion of the Warrant to the extent that the holder would own more than 4.99% of the outstanding common stock immediately after exercise, except that upon at least 61 days’ prior notice from the holder to us, the holder may increase the amount of ownership of outstanding stock after exercising the holder’s Warrants up to 9.99% of the number of shares of our common stock outstanding immediately after giving effect to the exercise, as such percentage ownership is determined in accordance with the terms of the Warrants. No fractional shares of our common stock will be issued in connection with the exercise of a Warrant. In lieu of fractional shares, we will round to the next whole share.

Cashless Exercise. If, at the time a holder exercises its Warrants, a registration statement registering the issuance or resale of the shares of our common stock underlying the Warrants under the Securities Act is not then effective or available and an exemption from registration under the Securities Act is not available for the issuance or resale, as applicable of such shares, then in lieu of making the cash payment otherwise contemplated to be made to us upon such exercise in payment of the aggregate exercise price, the holder may elect instead to receive upon such exercise the net number of shares of our common stock determined according to a formula set forth in the Warrants.

Transferability. Subject to applicable laws, a Warrant in book entry form may be transferred at the option of the holder through the facilities of the Depository Trust Company and Warrants in physical form may be transferred upon notice to us in writing and surrender of the Warrant to us together with the appropriate instruments of transfer.

Exchange Listing. There is no established public trading market for the Warrants, and we do not expect a market to develop. In addition, we do not intend to list the Warrants on any securities exchange or nationally recognized trading system. Without an active trading market, the liquidity of the Warrants will be limited.

Right as a Stockholder. Except as otherwise provided in the Warrants or by virtue of such holder's ownership of shares of our common stock, the holders of the Warrants do not have the rights or privileges of holders of our common stock, including any voting rights, until they exercise their Warrants.

Fundamental Transaction. In the event of a fundamental transaction, as described in the form of Warrant, and generally including any reorganization, recapitalization or reclassification of our common stock, the sale, transfer or other disposition of all or substantially all of our properties or assets, our consolidation or merger with or into another person, the acquisition of at least 50% of our outstanding common stock, or any person or group becoming the beneficial owner of at least 50% of the voting power represented by our outstanding common stock, the holders of the Warrants will be entitled to receive upon exercise of the Warrants the kind and amount of securities, cash or other property that the holders would have received had they exercised the Warrants immediately prior to such fundamental transaction.

MATERIAL U.S. FEDERAL INCOME TAX CONSEQUENCES

The following is a summary of certain material U.S. federal income tax considerations for a U.S. holder (as defined below) generally applicable to (i) the purchase, ownership, disposition, and conversion of the Notes, (ii) the purchase, ownership, disposition, exercise, and lapse of the Warrants, and (iii) the ownership and disposition of the Shares. For purposes of this discussion, the Notes, the Warrants, and the Shares are referred to collectively as the “Securities.”

This summary is based upon provisions of the Internal Revenue Code of 1986, as amended (the “Code”), applicable U.S. Treasury Regulations, administrative rulings, and judicial decisions in effect as of the date hereof, any of which may subsequently be changed or interpreted differently, possibly retroactively, so as to result in U.S. federal income tax consequences different from those discussed below. This summary applies only to Securities that are held as “capital assets” within the meaning of Section 1221 of the Code (generally, property held for investment) by a U.S. holder that purchased the Securities offered in this offering on original issuance at the “issue price” (which we assume will be the price indicated on the cover of this prospectus supplement). This summary is general in nature, and does not address all aspects of U.S. federal income taxation, any estate or gift tax consequences, any alternative minimum tax consequences, the Medicare contribution tax on net investment income, the special tax accounting rules under Section 451(b) of the Code, or any state, local, or non-U.S. tax consequences. In addition, this summary does not deal with all tax consequences that may be relevant to a U.S. holder in light of its personal circumstances or particular situations, such as:

- U.S. holders that may be subject to special tax treatment, including brokers or dealers in securities or currencies, banks, financial institutions, regulated investment companies, real estate investment trusts, tax-exempt entities, insurance companies, pension or retirement plans, or traders in securities that elect to use a mark-to-market method of tax accounting for their securities;
- U.S. holders holding the Securities as a part of a hedging, integrated, or conversion transaction or a straddle or persons deemed to sell the Securities under the constructive sale provisions of the Code;
- U.S. holders whose “functional currency” is not the U.S. dollar;
- corporations that accumulate earnings to avoid U.S. federal income tax;
- certain former citizens or long-term residents of the United States;
- U.S. holders that own, or are deemed to own, 5% or more (by vote or value) of our stock; or
- partnerships or other pass-through entities or investors in such entities.

If an entity or arrangement that is treated as a partnership for U.S. federal income tax purposes holds the Securities, the tax treatment of a partner generally will depend upon the status of the partner and the activities of the partnership. Partnerships holding the Securities and partners in such partnerships should consult their tax advisors regarding the tax consequences in their particular circumstances.

We have not sought, nor will we seek, a ruling from the Internal Revenue Service (the “IRS”), with respect to the matters discussed below. There can be no assurance that the IRS will not take a different position concerning the tax consequences described herein or that any such position would not be sustained by a court.

As used herein, the term “U.S. holder” means a beneficial owner of the Securities that is, for U.S. federal income tax purposes:

- an individual who is a citizen or resident of the United States;
- a corporation (or any other entity treated as a corporation for U.S. federal income tax purposes) created or organized in or under the laws of the United States, any state thereof, or the District of Columbia;
- an estate the income of which is subject to U.S. federal income taxation regardless of its source; or
- a trust, if it (i) is subject to the primary supervision of a court within the United States and one or more U.S. persons have the authority to control all substantial decisions of the trust or (ii) has a valid election in effect under applicable U.S. Treasury Regulations to be treated as a U.S. person.

A “non-U.S. holder” is a beneficial owner of the Securities (other than an entity or arrangement treated as a partnership for U.S. federal income tax purposes) that is not a U.S. holder. This summary does not apply to non-U.S. holders.

THIS SUMMARY OF CERTAIN U.S. FEDERAL INCOME TAX CONSIDERATIONS IS FOR GENERAL INFORMATION ONLY AND IS NOT TAX ADVICE. U.S. HOLDERS SHOULD CONSULT THEIR TAX ADVISORS REGARDING THE U.S. FEDERAL, STATE, AND LOCAL AND NON-U.S. INCOME AND NON-INCOME TAX CONSEQUENCES OF THE PURCHASE, OWNERSHIP, DISPOSITION, AND CONVERSION OF THE NOTES, THE PURCHASE, OWNERSHIP, DISPOSITION, EXERCISE, AND LAPSE OF THE WARRANTS, AND THE OWNERSHIP AND DISPOSITION OF THE SHARES IN THEIR PARTICULAR CIRCUMSTANCES.

Characterization of the Notes and the Warrants and Allocation of Purchase Price

We intend to treat the Notes (including for purposes of this subsection, the Private Placement Notes, but excluding Notes converted into shares of our common stock (the “*Initial Conversion Shares*”) pursuant to the “Initial Conversion” as that term is used in the Purchase Agreement), the Warrants and the Initial Conversion Shares as an “investment unit” for U.S. federal income tax purposes. The purchase price paid for the investment unit must be allocated between the Notes, the Warrants and the Initial Conversion Shares, each based on their relative fair market values at the time of the sale, and the portion of such purchase price allocated to the Notes will be the issue price of the Notes. Our allocation of the purchase price between the Notes, the Warrants and the Initial Conversion Shares is binding on a U.S. holder of the investment unit, unless the U.S. holder explicitly discloses that the U.S. holder’s allocation is different from our allocation. The disclosure generally must be made on a statement attached to the U.S. holder’s timely filed U.S. federal income tax return for the taxable year that includes the U.S. holder’s purchase of the investment unit. U.S. holders may obtain our allocation by contacting us as set forth in the section titled “Where You Can Find Additional Information.” There can be no assurance that the IRS will respect our allocation or, as applicable, a U.S. holder’s allocation. If the IRS successfully challenges our allocation or, as applicable, a U.S. holder’s allocation, the tax consequences resulting from the new allocation could be different from the tax consequences resulting from our allocation or, as applicable, the U.S. holder’s allocation. U.S. holders should consult their tax advisors regarding the tax treatment of the Notes, the Warrants and the Initial Conversion Shares and the allocation of the purchase price for the Notes, the Warrants and the Initial Conversion Shares.

Original Issue Discount on the Notes

The Notes will be issued with original issue discount (the “*OID*”) for U.S. federal income tax purposes. The amount of OID will be equal to the excess of the Notes’ “stated redemption price at maturity” over its “issue price.” Regardless of a U.S. holder’s method of accounting, the U.S. holder generally will be required to accrue OID on a constant yield to maturity basis, and include such accruals in gross income as ordinary interest income, potentially in advance of the receipt of cash attributable to that income.

The amount of OID allocable to an accrual period generally will equal to the excess of the product of the “adjusted issue price” of the Notes at the beginning of the accrual period and the Notes’ “yield to maturity” (generally determined on the basis of a compounding assumption that reflects the length of the accrual period). The adjusted issue price of the Notes at the beginning of the first accrual period will be the Notes’ issue price. The adjusted issue price of the Notes at the beginning of any subsequent accrual period generally will be the adjusted issue price of the Notes at the beginning of the previous accrual period, increased by the amount of OID allocable to the previous accrual period and decreased by the amount of any payment made on the Notes during the previous accrual period. The yield to maturity of the Notes is the rate that, when used to compute the present value of all payments to be made on the Notes (including for this purpose any scheduled redemption payments on the Notes), produces an amount equal to the issue price of the Notes. The payment schedule of the Notes for OID purposes will include assumptions regarding the holder’s “partial redemptions”, as described in “Description of Securities We Are Offering—Notes—Redemption.” If contrary to these assumptions, a partial redemption payment is not made, the Notes will be treated as retired and reissued solely for purposes of the OID rules described above.

The rules governing OID are complex. U.S. holders should consult their tax advisors regarding the application of such rules to the Notes, including the amount of OID and the inclusion of OID in gross income.

Contingent Payments on the Notes

We may be required to make additional payments on the Notes as described, for example, in the sections titled “Description of Securities we are Offering—Notes—Repurchase or Redemption upon a Fundamental Change” and “Description of Securities we are Offering—Notes,” and the amount and timing of certain other payments on the Notes are subject to contingencies. We intend to treat the foregoing contingencies as not causing the Notes to be subject to the rules governing contingent payment debt instruments. If, contrary to expectations, we make additional payments, although it is not free from doubt, such additional payments should be taxable to a U.S. holder as ordinary income at the time it accrues or is paid in accordance with the U.S. holder’s regular method of tax accounting. U.S. holders should consult their own tax advisors regarding the tax treatment of such additional payments.

Due to a lack of relevant authority regarding these payments, the applicability of the rules governing contingent payment debt instruments to the Notes is uncertain. Our position that the Notes are not subject to the rules governing contingent payment debt instruments is not binding on the IRS. If the IRS successfully challenged this position, and the Notes were treated as a contingent payment debt instrument, a U.S. holder generally would, among other things, be required to accrue interest income at a higher rate than the yield determined under the OID rules, and to treat any gain recognized on the sale or other taxable disposition, or upon the conversion, of the Notes as ordinary income rather than as capital gain. If a U.S. holder disagrees with our position, the U.S. holder generally must explicitly disclose the U.S. holder’s position on a statement attached to the U.S. holder’s timely filed U.S. federal income tax return for the taxable year that includes the U.S. holder’s purchase of the Notes. U.S. holders should consult their tax advisors regarding the applicability of the rules governing contingent payment debt instruments to the Notes and the tax consequences if the Notes were treated as a contingent payment debt instrument.

The remainder of this summary assumes that the Notes are not treated as contingent payment debt instruments.

Sale, Exchange, Redemption, Repurchase, or Other Taxable Disposition of the Notes

Except as provided below under the section titled “—Conversion of the Notes,” a U.S. holder generally will recognize capital gain or loss upon the sale, exchange, redemption, repurchase, or other taxable disposition of the Notes (for purposes of this subsection, excluding any scheduled redemption as described under “—Original Issue Discount on the Notes”) equal to the difference, if any, between the sum of the cash plus the fair market value of any other property received upon such disposition and such U.S. holder’s adjusted tax basis in the Notes. A U.S. holder’s adjusted tax basis in the Notes generally will be equal to the amount that the U.S. holder paid for the Notes (taking into account the allocation of purchase price discussion in the section titled “—Characterization of the Notes and the Warrants and Allocation of Purchase Price” above), plus the amount, if any, included in income by the U.S. holder as OID or on an adjustment to the conversion rate of the Notes, as described in the section titled “—Constructive Distributions” below, less the amount of any scheduled redemption payments received on the Notes. Such gain or loss will be capital gain or loss. If, at the time of the sale, exchange, redemption, repurchase, or other taxable disposition of the Notes, the U.S. holder held the Notes for more than one year, any such capital gain or loss would be long-term capital gain or loss. Long-term capital gains recognized by certain non-corporate U.S. holders, including individuals, generally will be subject to a reduced rate of U.S. federal income tax. A U.S. holder’s ability to deduct capital losses may be limited.

Conversion of the Notes

If a U.S. holder presents the Notes for conversion, the U.S. holder will receive shares of our common stock in exchange for the principal of the Notes and may receive a retirement fee in cash. The U.S. holder generally will not recognize gain or loss upon the conversion of the Notes, except with respect to the cash received, which may be treated as boot gain in a recapitalization transaction, or alternatively, as gain received in partial redemption of the Notes converted (with the remainder of the Notes treated as converted solely into stock). The tax basis of shares of our common stock received upon a conversion (excluding any Initial Conversion Shares, for which basis will be determined via allocation of purchase price as described in the section titled “—Characterization of the Notes and the Warrants and Allocation of Purchase Price” above) will equal the adjusted tax basis of the Notes that was converted, except that if cash is received in a transaction treated as a recapitalization, the basis will be increased by the amount of gain recognized and decreased by the amount of cash received, and, alternatively, if cash is received in partial redemption, the basis of the Notes will be allocated between the Notes treated as converted and the Notes treated as redeemed. The U.S. holder’s holding period for the shares of common stock will include the period during which the U.S. holder held the Notes.

Possible Effect of Change in the Notes’ Conversion Consideration after Certain Changes of our Common Stock

If we undergo certain of the events described in the section titled “Description of Notes—Conversion Rights—Additional Conversion Rate Adjustments,” the conversion rate and the related conversion consideration may be adjusted such that a U.S. holder would be entitled to convert the Notes into shares, property, or assets other than our common stock described in such section. Depending on the facts and circumstances at the time of such event, such adjustment may result in a deemed exchange of the Notes, which may be a taxable event for U.S. federal income tax purposes. Furthermore, depending on the circumstances, subsequent to any such event, the U.S. federal income tax consequences of the ownership and conversion of the modified Notes as well as the ownership of the property into which the Notes is convertible may be different from the U.S. federal income tax consequences addressed in this discussion. A U.S. holder should consult its tax advisor regarding the U.S. federal income tax consequences of such an adjustment.

Exercise and Lapse of the Warrants

A U.S. holder generally will not recognize gain or loss upon exercise of the Warrants and the related receipt of the Warrant Shares (unless cash is received in lieu of the issuance of a fractional Warrant Share). The U.S. holder generally will take a tax basis in the Warrant Shares equal to the sum of (i) the U.S. holder’s tax basis in the Warrant and (ii) the exercise price of such Warrant. The U.S. Holder’s holding period in the Warrant Shares generally should begin on the day after the date of exercise.

In certain circumstances, the Warrants may be exercised on a cashless basis. The U.S. federal income tax treatment of a cashless exercise of the Warrants on a cashless basis is not clear and may be different from the tax consequences described above. It is possible that a cashless exercise of a warrant could be a taxable event. U.S. holders should consult their tax advisors regarding the tax consequences of a cashless exercise of the Warrants, including their tax basis and holding period in the Warrant Shares, in their particular circumstances.

Upon the lapse or expiration of a Warrant, a U.S. holder generally will recognize a loss in an amount equal to the U.S. holder’s tax basis in the Warrant. Any such loss generally will be a capital loss and will be long-term capital loss if the U.S. holder has held the Warrant for more than one year. The deductibility of capital losses is subject to limitations.

Constructive Distributions

Under Section 305 of the Code, an adjustment to (or a failure to adjust) the number of the Warrant Shares issuable upon exercise of a Warrant, or an adjustment to (or a failure to adjust) the exercise price of a Warrant, may be treated as a constructive distribution to a U.S. holder to the extent such adjustment (or failure to adjust) has the effect of increasing such U.S. holder's proportionate interest in our assets or earnings and profits, as determined under U.S. federal income tax principles, depending on the circumstances of such adjustment (or failure to adjust) (for example, if such adjustment is to compensate for a distribution of cash or other property to our stockholders). Any such constructive dividend will be treated generally as described below under the section titled "—Distributions," whether or not there is an actual distribution of cash or other property.

Similarly, the conversion rate of a Note will be adjusted in certain circumstances. Adjustments (or failures to make adjustments) that have the effect of increasing a U.S. holder's proportionate interest in our assets or earnings may in some circumstances result in a constructive distribution to a U.S. holder for U.S. federal income tax purposes. Adjustments to the conversion rate made pursuant to a bona fide reasonable adjustment formula that has the effect of preventing the dilution of the interest of U.S. holders, however, generally will not be considered to result in a constructive distribution to a U.S. holder. Certain of the possible conversion rate adjustments provided in the Notes (including, without limitation, adjustments in respect of taxable dividends to holders of our common stock) will not qualify as being pursuant to a bona fide reasonable adjustment formula. If such adjustments are made, depending on the circumstances, including whether we have paid in the past or will pay in the future distributions on our stock or interest on other convertible debt, a U.S. holder may be deemed to have received a distribution even though the U.S. holder has not received any cash or property as a result of such adjustments. In addition, an adjustment to the conversion rate in connection with a make-whole fundamental change may be treated as a constructive distribution. Any constructive distributions will be taxable as a dividend, return of capital, or capital gain as described in the section titled "—Distributions" below.

It is not clear whether a constructive dividend deemed paid to a non-corporate U.S. holder would be eligible for the preferential rates of U.S. federal income tax applicable in respect of certain dividends received. It is also unclear whether corporate U.S. holders would be entitled to claim the dividends-received deduction with respect to any such constructive dividends. Because a constructive dividend deemed received by a U.S. holder would not give rise to any cash from which any applicable withholding could be satisfied, if backup withholding is paid on behalf of a U.S. holder (because such U.S. holder failed to establish an exemption from backup withholding), such backup withholding may be set off against payments of cash and the Shares (or, in certain circumstances, against any payments on the Shares).

We are required under current law to report the amount of any constructive distributions on our website or to the IRS and to U.S. holders not exempt from information reporting. The IRS has proposed regulations addressing the amount and timing of constructive distributions, obligations of withholding agents, and filing and notice obligations of issuers, effective for constructive distributions occurring on or after the date the regulations are adopted in final form. If adopted as proposed, the regulations generally would provide that (i) the amount of a constructive distribution is the excess of the fair market value of the right to acquire the Shares immediately after the conversion rate adjustment over the fair market value of the right to acquire the Shares without the adjustment, (ii) the constructive distribution occurs at the earlier of the date the adjustment occurs under the terms of the Notes or the Warrants and the date of the actual distribution of cash or other property that results in the constructive distribution, (iii) subject to certain limited exceptions, a withholding agent is required to impose any applicable withholding on constructive distributions and, if there is no associated cash payment, may set off its withholding obligations against payments on the Securities or sales proceeds received by, or other funds or assets, of the applicable U.S. holder, and (iv) we will continue to be required to report the amount of any constructive distributions on our website or to the IRS and to all U.S. holders (including those that would otherwise be exempt from information reporting). The final regulations will be effective for constructive distributions occurring on or after the date of adoption, but U.S. holders and withholding agents may rely on them prior to that date under certain circumstances.

U.S. holders should consult their tax advisors regarding the tax consequences of any constructive distributions in their particular circumstances.

Distributions

Distributions, if any, made on the Shares to a U.S. holder (and constructive distributions, if any, as described above under the section titled “— Constructive Distributions”) generally will be included in the U.S. holder’s income as ordinary dividend income to the extent of our current or accumulated earnings and profits, as determined under U.S. federal income tax principles. However, with respect to dividends received by individuals, such dividends generally are taxed at the lower applicable long-term capital gains rates, provided that certain holding period and other requirements are satisfied. Distributions (and constructive distributions) in excess of our current and accumulated earnings and profits will be treated as a return of capital to the extent of a U.S. holder’s tax basis in the Shares, Warrants or Notes, as applicable, and thereafter as capital gain from the sale or exchange of the Shares, Warrants or Notes, as applicable. Dividends received by a corporation may be eligible for a dividends-received deduction, subject to applicable limitations.

Sale or Other Taxable Disposition of the Shares or the Warrants

Upon the sale or other taxable disposition of the Shares or the Warrants, a U.S. holder generally will recognize capital gain or loss equal to the difference between (i) the amount of cash and the fair market value of all other property received upon such disposition and (ii) the U.S. holder’s tax basis in the Shares or the Warrants. Such capital gain or loss will be long-term capital gain or loss if the U.S. holder’s holding period in the Shares or the Warrants is more than one year at the time of the taxable disposition. Long-term capital gains recognized by certain non-corporate U.S. holders (including individuals) generally will be subject to reduced rates of U.S. federal income tax. A U.S. holder’s ability to deduct capital losses may be limited.

Information Reporting and Backup Withholding

Information reporting requirements generally will apply to OID accrued on the Notes, dividends paid on the Shares (and constructive dividends paid on the Notes or the Warrants) and proceeds from a sale or other taxable disposition of the Securities, unless the U.S. holder is an exempt recipient (such as a corporation). Backup withholding (currently at a 24% rate) will apply to those payments if the U.S. holder fails to provide its correct taxpayer identification number, or certification of exempt status, or if the U.S. holder is notified by the IRS that it has failed to report in full payments of interest and dividend income. Backup withholding is not an additional tax. Any amounts withheld under the backup withholding rules generally will be allowed as a refund or a credit against a U.S. holder’s U.S. federal income tax liability, provided that the required information is furnished timely to the IRS. U.S. holders should consult their tax advisors regarding their information reporting and backup withholding obligations in their particular circumstances.

THIS SUMMARY IS FOR GENERAL INFORMATION ONLY AND IS NOT TAX ADVICE. U.S. HOLDERS SHOULD CONSULT THEIR TAX ADVISORS REGARDING THE U.S. FEDERAL, STATE, AND LOCAL AND NON-U.S. INCOME AND NON-INCOME TAX CONSEQUENCES OF THE PURCHASE, OWNERSHIP, DISPOSITION, AND CONVERSION OF THE NOTES, THE PURCHASE, OWNERSHIP, DISPOSITION, EXERCISE, AND LAPSE OF THE WARRANTS, AND THE OWNERSHIP, AND DISPOSITION OF THE SHARES IN THEIR PARTICULAR CIRCUMSTANCES, INCLUDING ANY INFORMATION REPORTING REQUIREMENTS AND THE IMPACT OF ANY POTENTIAL CHANGE IN LAW.

CONCURRENT PRIVATE PLACEMENT

The Purchaser is also purchasing up to \$35,000,000 aggregate principal amount of Private Placement Notes in the Concurrent Private Placement exempt from the registration requirements of the Securities Act on substantially the same terms as the Notes being offered by this prospectus supplement and the accompanying prospectus. The Concurrent Private Placement is contingent on the closing of this offering and the satisfaction of certain other customary conditions and this offering is contingent on the closing of the Concurrent Private Placement and the satisfaction of certain other customary conditions. The Purchaser will be entitled to certain registration rights with respect to the Private Placement Notes. The Private Placement Notes and the shares of our common stock issuable upon the conversion of the Private Placement Notes are not being offered pursuant to this prospectus supplement and the accompanying prospectus. The Purchaser will be entitled to certain registration rights with respect to the Private Placement Notes.

PLAN OF DISTRIBUTION

We engaged Cowen and Company, LLC and Stifel, Nicolaus & Company, Incorporated as co-lead placement agents and BTIG, LLC as placement agent to solicit offers to purchase the Securities offered by this prospectus supplement pursuant to a placement agent agreement, dated October 11, 2023 (the “*Placement Agent Agreement*”). We have also entered into the Purchase Agreement directly with the Purchaser in connection with this offering. The Placement Agents are also acting as placement agents for the Concurrent Private Placement.

The Purchase Agreement provides that our obligation to issue and sell the Notes and Warrants to the Purchaser is subject to the conditions set forth in the Purchase Agreement. The Purchaser’s obligation to purchase the Notes and Warrants is subject to the conditions set forth in the Purchase Agreement as well. The Purchase Agreement provides that, subject to certain exceptions, neither us nor any of our subsidiaries will issue, enter into any agreement to issue or announce the issuance or proposed issuance of any equity security or any equity-linked or related security within 30 days following the effectiveness of a resale registration statement. The Purchaser may also elect to purchase Additional Securities in any subsequent closings.

We expect that the closing of the offering will occur on October 13, 2023 or such later date as we and the Purchaser may agree. The Purchase Agreement provides that the agreement may be terminated by the Purchaser if the closing of the offering has not been consummated on or before the fifth business day following the date of the Purchase Agreement. We estimate the total expenses of the offering, which will be payable by us, will be approximately \$1.8 million. After deducting our estimated offering expenses and the fee of the Placement Agents, we expect the net proceeds from the offering of the Notes and Warrants to be approximately \$75.6 million. If the Purchaser’s option to purchase the Additional Securities is exercised, we expect the net proceeds from the offering to be approximately \$99.1 million.

We have retained the Placement Agents to act as our exclusive placement agents for the offering and Concurrent Private Placement, and have entered into the Placement Agent Agreement with the Placement Agents in connection with the offering and Concurrent Private Placement. We have agreed to pay the Placement Agents a cash fee equal to \$2,700,000 at the closing of the offering and Concurrent Private Placement and a cash fee equal to 6.0% of the gross proceeds from the sale of any Additional Securities. We will also reimburse the Placement Agents’ reasonable and documented expenses in connection with this offering and Concurrent Private Placement, including fees and expenses of outside counsel, in the amount of up to \$150,000.

The Placement Agents are not purchasing or selling any Notes and Warrants subject to this prospectus supplement, nor did the Placement Agents agree to arrange for the purchase or sale of any specific amount of Notes and Warrants, but the Placement Agents have agreed to use their reasonable best efforts to arrange for the sale of the Notes and Warrants hereby.

The foregoing does not purport to be a complete description of the Placement Agent Agreement and the Purchase Agreement. A copy of the form of Purchase Agreement is included as an exhibit to a Current Report on Form 8-K to be filed by us in connection with this offering and incorporated by reference into the registration statement of which this prospectus supplement and the accompanying prospectus form a part.

Each Placement Agent may be deemed to be an underwriter within the meaning of Section 2(a)(11) of the Securities Act, and any commissions received by such Placement Agent might be deemed to be underwriting discounts or commissions under the Securities Act. As an underwriter, each Placement Agent would be required to comply with the requirements of the Securities Act and the Exchange Act, including, without limitation, Rule 10b-5 and Regulation M under the Exchange Act.

Other Relationships

The Placement Agents and their affiliates have provided and may in the future provide various investment banking and other financial services for us and our affiliates for which they have received and may receive customary fees and commissions.

Indemnification

We have agreed to indemnify the Placement Agents against liabilities arising out of or relating to (i) any breach of any of the representations, warranties, covenants or agreements made by us in the Placement Agent Agreement, as well as certain other proceedings and claims related to this offering and (ii) liabilities under the Securities Act, and to contribute to payments that the Placement Agents may be required to make in respect of those liabilities.

LEGAL MATTERS

Cooley LLP, which has acted as our counsel in connection with this offering, will pass on certain legal matters with respect to U.S. federal law in connection with this offering. Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C. has acted as counsel to the Placement Agents in connection with this offering. The validity of the securities offered hereby will be passed upon by Morris, Nichols, Arsht & Tunnell LLP, Wilmington, Delaware.

EXPERTS

The consolidated financial statements as of December 31, 2022 and 2021 and for each of the years then ended incorporated by reference in this prospectus supplement have been so incorporated in reliance on the report of BDO USA, LLP (n/k/a BDO USA, P.C.), an independent registered public accounting firm, incorporated herein by reference, given on the authority of said firm as experts in auditing and accounting. The report on the consolidated financial statements contains an explanatory paragraph regarding the Company's ability to continue as a going concern.

WHERE YOU CAN FIND ADDITIONAL INFORMATION

This prospectus supplement and the accompanying prospectus are part of the registration statement on Form S-3 we filed with the SEC under the Securities Act and do not contain all of the information set forth or incorporated by reference in the registration statement and the exhibits to the registration statement. For further information with respect to us and the securities we are offering under this prospectus supplement, we refer you to the registration statement and the exhibits and schedules filed as a part of the registration statement. We file annual, quarterly and current reports, proxy statements and other information with the SEC. The SEC maintains a website that contains reports, proxy and information statements and other information regarding issuers that file electronically with the SEC, including Bionano. The address of the SEC website is www.sec.gov.

We maintain a website at www.bionanogenomics.com. Information contained in or accessible through our website does not constitute a part of this prospectus supplement or the accompanying prospectus.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to "incorporate by reference" information into this prospectus supplement, which means that we can disclose important information to you by referring you to another document filed separately with the SEC. The SEC file number for the documents incorporated by reference in this prospectus supplement is 001-38613. The documents incorporated by reference into this prospectus supplement contain important information about us that you should read.

The following documents are incorporated by reference into this document:

- our Annual Report on Form 10-K for the year ended December 31, 2022, filed with the SEC on [March 9, 2023](#);
- our Definitive Proxy Statement on Schedule 14A, filed with the SEC on [April 28, 2023](#) (to the extent incorporated by reference into Part III of our Annual Report on Form 10-K for the fiscal year ended December 31, 2022);
- our Quarterly Reports on Form 10-Q for the quarters ended March 31, 2023 and June 30, 2023 filed with the SEC on [May 9, 2023](#) and [August 9, 2023](#) respectively;
- our Current Reports on Form 8-K (other than information furnished rather than filed) filed with the SEC on [February 3, 2023](#), [March 13, 2023](#), [April 14, 2023](#), [June 2, 2023](#), [June 16, 2023](#), [July 19, 2023](#), [August 4, 2023](#) and [August 14, 2023](#), to the extent the information in such reports is filed and not furnished; and
- the description of our common stock which is registered under Section 12 of the Exchange Act, in our registration statement on Form 8-A, filed on [August 17, 2018](#), including any amendments or reports filed for the purposes of updating this description.

Notwithstanding the statements in the preceding paragraphs, no document, report or exhibit (or portion of any of the foregoing) or any other information that we have “furnished” to the SEC pursuant to the Exchange Act shall be incorporated by reference into this prospectus supplement.

We also incorporate by reference into this prospectus supplement all documents (other than Current Reports furnished under Item 2.02 or Item 7.01 of Form 8-K and exhibits filed on such form that are related to such items) that are filed by us with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act after the date of this prospectus supplement but prior to the termination of this offering of the common stock covered by this prospectus supplement and the accompanying prospectus. These documents include periodic reports, such as Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q and Current Reports on Form 8-K, as well as proxy statements.

We will provide to each person, including any beneficial owner, to whom a prospectus is delivered, without charge upon written or oral request, a copy of any or all of the documents that are incorporated by reference into this prospectus supplement but not delivered with this prospectus supplement, including exhibits which are specifically incorporated by reference into such documents. You should direct any requests for documents to Bionano Genomics, Inc. 9540 Towne Centre Drive, Suite 100, San Diego, California 92121; telephone: (858) 888-7600.

Any statement contained herein or in a document incorporated or deemed to be incorporated by reference into this document will be deemed to be modified or superseded for purposes of the document to the extent that a statement contained in this document or any other subsequently filed document that is deemed to be incorporated by reference into this document modifies or supersedes the statement.

The information in this prospectus is not complete and may be changed. We may not sell these securities or accept an offer to buy these securities until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities and it is not soliciting offers to buy these securities in any state where such offer or sale is not permitted.

SUBJECT TO COMPLETION, DATED MARCH 10, 2023

PROSPECTUS



\$400,000,000

**Common Stock
Preferred Stock
Debt Securities
Warrants**

From time to time, we may offer and sell up to an aggregate amount of \$400,000,000 of any combination of the securities described in this prospectus in one or more offerings. We may also offer securities as may be issuable upon conversion, redemption, repurchase, exchange or exercise of any securities registered hereunder, including any applicable antidilution provisions.

This prospectus provides a general description of the securities we may offer. Each time we offer securities, we will provide specific terms of the securities offered in one or more supplements to this prospectus. We may also authorize one or more free writing prospectuses to be provided to you in connection with these offerings. The prospectus supplement and any related free writing prospectus may also add, update or change information contained in this prospectus. You should carefully read this prospectus, the applicable prospectus supplement and any related free writing prospectus, as well as any documents incorporated by reference, before you invest in any of the securities being offered.

This prospectus may not be used to consummate a sale of any securities unless accompanied by a prospectus supplement.

Our common stock is listed on the Nasdaq Capital Market under the trading symbol "BNGO." On March 8, 2023, the last reported sale price of our common stock was \$1.31 per share. The applicable prospectus supplement will contain information, where applicable, as to any other listing on the Nasdaq Capital Market or any securities market or other exchange of the securities, if any, covered by the applicable prospectus supplement.

We may sell these securities directly to investors, through agents designated from time to time or to or through underwriters or dealers, on a continuous or delayed basis. For additional information on the methods of sale, you should refer to the section entitled "Plan of Distribution" in this prospectus. If any agents or underwriters are involved in the sale of any securities with respect to which this prospectus is being delivered, the names of such agents or underwriters and any applicable fees, commissions, discounts or options to purchase additional securities will be set forth in a prospectus supplement. The price to the public of such securities and the net proceeds we expect to receive from such sale will also be set forth in a prospectus supplement.

Investing in our securities involves a high degree of risk. You should review carefully the risks and uncertainties described under the heading "Risk Factors" on page 6 of this prospectus as well as those contained in the applicable prospectus supplement and any related free writing prospectus, and under similar headings in the other documents that are incorporated by reference into this prospectus.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus supplement is truthful or complete. Any representation to the contrary is a criminal offense.

The date of this prospectus is _____, 2023.

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ABOUT THIS PROSPECTUS

This prospectus is a part of a registration statement on Form S-3 that we filed with the Securities and Exchange Commission, or SEC, utilizing a “shelf” registration process. Under this shelf registration process, we may offer and sell from time to time in one or more offerings up to a total dollar amount of \$400,000,000 of any combination of the securities described in this prospectus.

This prospectus provides you with a general description of the securities we may offer. Each time we offer securities under this prospectus, we will provide a prospectus supplement that will contain specific information about the terms of such securities and offering. We may also authorize one or more free writing prospectuses to be provided to you that may contain material information relating to these offerings. The prospectus supplement and any related free writing prospectus that we may authorize to be provided to you may also add, update or change information contained in this prospectus or in any documents that we have incorporated by reference into this prospectus. If there is any inconsistency between the information in this prospectus and the applicable prospectus supplement or free writing prospectus, you should rely on the prospectus supplement or free writing prospectus, as applicable. You should read this prospectus, any applicable prospectus supplement and any related free writing prospectus, together with the information incorporated herein by reference as described under the heading “Incorporation of Certain Information by Reference,” before investing in any of the securities offered.

THIS PROSPECTUS MAY NOT BE USED TO CONSUMMATE A SALE OF SECURITIES UNLESS IT IS ACCOMPANIED BY A PROSPECTUS SUPPLEMENT.

Neither we, nor any agent, underwriter or dealer has authorized any person to give any information or to make any representation other than those contained or incorporated by reference into this prospectus, any applicable prospectus supplement or any related free writing prospectus prepared by or on behalf of us or to which we have referred you. This prospectus, any applicable supplement to this prospectus or any related free writing prospectus do not constitute an offer to sell or the solicitation of an offer to buy any securities other than the registered securities to which they relate, nor do this prospectus, any applicable supplement to this prospectus or any related free writing prospectus constitute an offer to sell or the solicitation of an offer to buy securities in any jurisdiction to any person to whom it is unlawful to make such offer or solicitation in such jurisdiction.

You should not assume that the information contained in this prospectus, any applicable prospectus supplement or any related free writing prospectus is accurate on any date subsequent to the date set forth on the front of the document or that any information we have incorporated by reference is correct on any date subsequent to the date of the document incorporated by reference, even though this prospectus, any applicable prospectus supplement or any related free writing prospectus is delivered, or securities are sold, on a later date.

This prospectus contains summaries of certain provisions contained in some of the documents described herein, but reference is made to the actual documents for complete information. All of the summaries are qualified in their entirety by the actual documents. Copies of some of the documents referred to herein have been filed, will be filed or will be incorporated by reference as exhibits to the registration statement of which this prospectus is a part, and you may obtain copies of those documents as described below under the heading “Where You Can Find More Information.”

PROSPECTUS SUMMARY

This summary highlights selected information from this prospectus and does not contain all of the information that you need to consider in making your investment decision. You should carefully read the entire prospectus, the applicable prospectus supplement and any related free writing prospectus, including the risks of investing in our securities discussed under the heading “Risk Factors” contained herein, in any applicable prospectus supplement and any related free writing prospectus, and under similar headings in the other documents that are incorporated by reference into this prospectus. You should also carefully read the information incorporated by reference into this prospectus, including our financial statements, and the exhibits to the registration statement of which this prospectus is a part. Unless the context requires otherwise, references in this prospectus to “Bionano,” “we,” “us” and “our” refer to Bionano Genomics, Inc. and its subsidiaries or, as the context may require, Bionano Genomics, Inc. only. “Bionano Laboratories,” “BioDiscovery” and “Purigen” refer to our wholly owned subsidiaries, Lineagen, Inc. (doing business as Bionano Laboratories), BioDiscovery, LLC and Purigen Biosystems, Inc., respectively.

Company Overview

We are a provider of genome analysis solutions that can enable researchers and clinicians to reveal answers to challenging questions in biology and medicine. Our mission is to transform the way the world sees the genome through optical genome mapping, or OGM, solutions, diagnostic services and software. We offer OGM solutions, including our Saphyr system, for applications across basic, translational and clinical research, and for other applications including cell bioprocessing quality control. Through our Bionano Laboratories business, we also provide diagnostic testing for patients with clinical presentations consistent with autism spectrum disorder and other neurodevelopmental disabilities. Through our BioDiscovery business, we offer an industry-leading, platform-agnostic software solution, our NxClinical software, which integrates next-generation sequencing and microarray data designed to provide analysis, visualization, interpretation and reporting of copy number variants, single-nucleotide variants and absence of heterozygosity across the genome in one consolidated view. Through our Purigen business, we offer nucleic acid extraction and purification solutions using proprietary isotachopheresis technology, through our Ionic Purification system.

Corporate Information

We were formed in January 2003 as BioNanomatrix LLC, a Delaware limited liability company. In August 2007, we became BioNanomatrix Inc., a Delaware corporation. In October 2011, we changed our name to BioNano Genomics, Inc., and in July 2018, we changed our name to Bionano Genomics, Inc.

Our principal executive offices are located at 9540 Towne Centre Drive, Suite 100, San Diego, California 92121, and our telephone number is (858) 888-7600. Our website address is www.bionanogenomics.com and we regularly post copies of our press releases as well as additional information about us on our website. Information contained in, or that can be accessed through, our website is not incorporated by reference into this prospectus and any accompanying prospectus supplement, and you should not consider information on our website to be part of this prospectus or in deciding whether to purchase our securities.

Our design logo, “Bionano,” and our other registered and common law trade names, trademarks and service marks are the property of Bionano Genomics, Inc. The trademarks, trade names and service marks appearing in this prospectus and any accompanying prospectus supplement are the property of their respective owners. We do not intend our use or display of other companies’ trademarks, trade names or service marks to imply a relationship with, or endorsement or sponsorship of us by, any other companies or products.

The Securities We May Offer

We may offer shares of our common stock and preferred stock, various series of debt securities and warrants to purchase any of such securities, up to a total aggregate amount of \$400,000,000, either individually or in combination with other securities, from time to time in one or more offerings under this prospectus, together with the applicable prospectus supplement and any related free writing prospectus, at prices and on terms to be determined by market conditions at the time of the relevant offering. This prospectus provides you with a general description of the securities we may offer. Each time we offer a type or series of securities under this prospectus, we will provide a prospectus supplement that will describe the specific amounts, prices and other important terms of the securities, including, to the extent applicable:

- designation or classification;
- aggregate principal amount or aggregate offering price;
- maturity, if applicable;
- original issue discount, if any;
- rates and times of payment of interest or dividends, if any;
- redemption, conversion, exercise, exchange or sinking fund terms, if any;
- conversion or exchange prices or rates, if any, and, if applicable, any provisions for changes to or adjustments in the conversion or exchange prices or rates and in the securities or other property receivable upon conversion or exchange;
- ranking, if applicable;
- restrictive covenants, if any;
- voting or other rights, if any; and
- important U.S. federal income tax considerations.

The prospectus supplement and any related free writing prospectus that we may authorize to be provided to you may also add, update or change information contained in this prospectus or in documents we have incorporated by reference. However, no prospectus supplement or free writing prospectus will offer a security that is not registered and described in this prospectus at the time of the effectiveness of the registration statement of which this prospectus is a part.

This prospectus may not be used to consummate a sale of securities unless it is accompanied by a prospectus supplement.

We may sell the securities directly to investors or through underwriters, dealers or agents. We, and our underwriters or agents, reserve the right to accept or reject all or part of any proposed purchase of securities. If we do offer securities through underwriters or agents, we will include in the applicable prospectus supplement:

- the names of those underwriters or agents;
- applicable fees, discounts and commissions to be paid to them;
- details regarding options to purchase additional securities, if any; and
- the estimated net proceeds to us.

Common Stock. We may issue shares of our common stock from time to time. Holders of our common stock are entitled to one vote per share for the election of directors and on all other matters that require stockholder approval. Subject to any preferential rights of any then outstanding preferred stock, in the event of our liquidation, dissolution or winding up, holders of our common stock are entitled to share ratably in the assets remaining after payment of liabilities and the liquidation preferences of any then outstanding preferred stock. Our common stock does not carry any preemptive rights enabling a holder to subscribe for, or receive shares of, any class of our common stock or any other securities convertible into shares of any class of our common stock, or any redemption rights.

Preferred Stock. We may issue shares of our preferred stock from time to time, in one or more series. Under our amended and restated certificate of incorporation, as amended, our board of directors has the authority, without

further action by stockholders, to designate up to 10,000,000 shares of preferred stock in one or more series and to fix the rights, preferences, privileges, qualifications and restrictions granted to or imposed upon the preferred stock, including dividend rights, conversion rights, voting rights, rights and terms of redemption, liquidation preference and sinking fund terms, any or all of which may be greater than the rights of the common stock. To date, none of the 10,000,000 authorized shares of preferred stock have been designated by our board of directors. Convertible preferred stock will be convertible into our common stock or exchangeable for our other securities. Conversion may be mandatory or at the option of the holders of our preferred stock and would be at prescribed conversion rates.

We will fix the rights, preferences, privileges, qualifications and restrictions of the preferred stock of each series that we sell under this prospectus and applicable prospectus supplements in the certificate of designation relating to that series. We will incorporate by reference into the registration statement of which this prospectus is a part the form of any certificate of designation that describes the terms of the series of preferred stock we are offering before the issuance of the related series of preferred stock. We urge you to read the applicable prospectus supplement (and any related free writing prospectus that we may authorize to be provided to you) related to the series of preferred stock being offered, as well as the complete certificate of designation that contains the terms of the applicable series of preferred stock.

Debt Securities. We may issue debt securities from time to time, in one or more series, as either senior or subordinated debt or as senior or subordinated convertible debt. The senior debt securities will rank equally with any other unsecured and unsubordinated debt. The subordinated debt securities will be subordinate and junior in right of payment, to the extent and in the manner described in the instrument governing the debt, to all of our senior indebtedness. Convertible debt securities will be convertible into our common stock or preferred stock. Conversion may be mandatory or at the holder's option and would be at prescribed conversion rates.

The debt securities will be issued under one or more documents called indentures, which are contracts between us and a national banking association or other eligible party, as trustee. In this prospectus, we have summarized certain general features of the debt securities. We urge you, however, to read the applicable prospectus supplement (and any free writing prospectus that we may authorize to be provided to you) related to the series of debt securities being offered, as well as the complete indentures that contain the terms of the debt securities. A form of indenture has been filed as an exhibit to the registration statement of which this prospectus is a part, and supplemental indentures and forms of debt securities containing the terms of the debt securities being offered will be filed as exhibits to the registration statement of which this prospectus is a part or will be incorporated by reference from reports that we file with the SEC.

Warrants. We may issue warrants for the purchase of common stock, preferred stock and/or debt securities in one or more series. We may issue warrants independently or together with common stock, preferred stock and/or debt securities, and the warrants may be attached to or separate from these securities. In this prospectus, we have summarized certain general features of the warrants. We urge you, however, to read the applicable prospectus supplement (and any free writing prospectus that we may authorize to be provided to you) related to the particular series of warrants being offered, as well as the complete warrant agreements and warrant certificates that contain the terms of the warrants. Forms of the warrant agreements and forms of warrant certificates containing the terms of the warrants being offered have been filed as exhibits to the registration statement of which this prospectus is a part, and supplemental warrant agreements and forms of warrant certificates will be filed as exhibits to the registration statement of which this prospectus is a part or will be incorporated by reference from reports that we file with the SEC.

We will evidence each series of warrants by warrant certificates that we will issue. Warrants may be issued under an applicable warrant agreement that we enter into with a warrant agent. We will indicate the name and address of the warrant agent, if applicable, in the prospectus supplement relating to the particular series of warrants being offered.

Use of Proceeds

Except as described in the applicable prospectus supplement or in any free writing prospectuses we have authorized for use in connection with a specific offering, we currently intend to use the net proceeds from the sale of the securities offered hereby for general corporate purposes, which may include clinical trial and other research and development expenses, capital expenditures, working capital and general and administrative expenses. We may also use a portion of the net proceeds to acquire or invest in businesses, products and technologies that are complementary to our own, although we have no current plans, commitments or agreements with respect to any acquisitions as of the date of this prospectus. We will set forth in the applicable prospectus supplement or free writing prospectus our intended use for the net proceeds received from the sale of any securities sold pursuant to the prospectus supplement or free writing prospectus. Pending these uses, we intend to invest the net proceeds primarily in money market mutual funds, obligations of the U.S. government and its agencies, money market instruments including commercial paper and negotiable certificates of deposit and corporate bonds. See “Use of Proceeds” in this prospectus for additional information.

Risk Factor Summary

Below is a summary of the principal factors that make an investment in our securities speculative or risky. This summary does not address all of the risks that we face. Additional discussion of the risks and uncertainties summarized in this risk factor summary, and other risks and uncertainties that we face, are set forth below under the heading “Risk Factors” contained in the applicable prospectus supplement and in any free writing prospectuses we have authorized for use in connection with a specific offering, and under similar headings in the documents that are incorporated by reference into this prospectus.

- We are an early commercial-stage company and have a limited commercial history, which may make it difficult to evaluate our current business and predict our future performance;
- We have incurred recurring net losses since we were formed and expect to incur losses in the future. We cannot be certain that we will achieve or sustain profitability;
- Our quarterly and annual operating results and cash flows have fluctuated in the past and might continue to fluctuate, which makes our future operating results difficult to predict and could cause the market price of our securities to decline substantially;
- Our future capital needs are uncertain and we may require additional funding in the future to advance the commercialization of our Saphyr system, Ionic Purification system, NxClinical software, and our other products, technologies and services, as well as continue our research and development efforts. If we fail to obtain additional funding, we will be forced to delay, reduce or eliminate our commercialization and development efforts;
- Unfavorable geopolitical and macroeconomic developments could adversely affect our business, financial condition or results of operations;
- The COVID-19 pandemic has materially affected and could continue to materially affect our operations globally, including at our headquarters in San Diego, California, as well as the business or operations of our research partners, customers and other third parties with whom we conduct business;
- Acquisitions, joint ventures and other strategic transactions could disrupt or otherwise harm our business and may cause dilution to our stockholders;
- If our products or technologies fail to achieve and sustain sufficient market acceptance, our revenue will be adversely affected;
- In the near term, sales of our Saphyr system, Ionic Purification system, NxClinical software, consumables and genome analysis services will depend on levels of research and development spending by clinical research laboratories, academic and governmental research institutions and biopharmaceutical companies, a reduction in which could limit demand for our technologies and products and adversely affect our business and operating results;
- If we do not successfully manage the development and launch of new products and technologies, our financial results could be adversely affected;
- Our future success is dependent upon our ability to further penetrate our existing customer base, attract new customers and retain the customers of our acquired businesses;

- The size of the markets for our products and technologies may be smaller than we estimate, and new markets may not develop as quickly as we expect, or at all, limiting our ability to successfully sell our products and technologies.
- We are currently limited to “research use only,” or RUO, with respect to many of the materials and components used in our consumable products including our assays;
- If the FDA determines that our RUO products are medical devices or if we seek to market our RUO products for clinical diagnostic or health screening use, we will be required to obtain regulatory clearance(s) or approval(s), and may be required to cease or limit sales of our then marketed products, which could materially and adversely affect our business, financial condition and results of operations. Any such regulatory process would be expensive, time-consuming and uncertain both in timing and in outcome;
- If we are unable to protect our intellectual property, it may reduce our ability to maintain any technological or competitive advantage over our competitors and potential competitors, and our business may be harmed; and
- The price of our securities has been and may in the future be volatile or may decline regardless of our operating performance, and you could lose all or part of your investment.

RISK FACTORS

Investing in our securities involves a high degree of risk. Before deciding whether to invest in our securities, you should carefully consider the risks and uncertainties described under the heading “Risk Factors” contained in the applicable prospectus supplement and any related free writing prospectus, and discussed under the heading “Risk Factors” contained in our most recent Annual Report on Form 10-K and in our subsequent Quarterly Reports on Form 10-Q, as well as any amendments thereto reflected in subsequent filings with the SEC, which are incorporated by reference into this prospectus in their entirety, together with other information in this prospectus, the documents incorporated by reference and any free writing prospectus that we may authorize for use in connection with a specific offering. The risks described in these documents are not the only ones we face, but those that we consider to be material factors that make an investment in our common stock speculative or risky. There may be other unknown or unpredictable economic, business, competitive, regulatory or other factors that could have material adverse effects on our future results. Past financial performance may not be a reliable indicator of future performance, and historical trends should not be used to anticipate results or trends in future periods. If any of these risks actually occurs, our business, financial condition, results of operations or cash flow could be seriously harmed. This could cause the trading price of our securities to decline, resulting in a loss of all or part of your investment. Please also carefully read the section below entitled “Special Note Regarding Forward-Looking Statements.”

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus and any accompanying prospectus supplement, as well as the documents incorporated by reference in this prospectus or any accompanying prospectus supplement, contain “forward-looking statements” within the meaning of Section 27A of the Securities Act of 1933, as amended, or the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act. These statements relate to future events or to our future operating or financial performance and involve known and unknown risks, uncertainties and other factors that may cause our actual results, performance or achievements to be materially different from any future results, performances or achievements expressed or implied by the forward-looking statements. Within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act, these forward-looking statements may include, but are not limited to, statements about:

- the size and growth potential of the markets for our products, and our ability to serve those markets;
- the rate and degree of market acceptance of our products;
- our ability to manage the growth of our business and integrate acquired businesses;
- our ability to expand our commercial organization to address effectively existing and new markets that we intend to target;
- the impact from future regulatory, judicial, and legislative changes or developments in the U.S. and foreign countries;
- our ability to successfully execute our strategy and meet anticipated goals and milestones;
- our ability to compete effectively in a competitive industry;
- the introduction of competitive technologies or improvements in existing technologies and the success of any such technologies;
- the performance of our third-party contract sales organizations, suppliers and manufacturers;
- our ability to attract and retain key scientific or management personnel;
- the accuracy of our estimates regarding expenses, future revenues, reimbursement rates, capital requirements and needs for additional financing;
- the impact of geopolitical and macroeconomic developments, such as the ongoing conflict between Ukraine and Russia, related sanctions and the COVID-19 pandemic on our business and operations, as well as the business or operations of our suppliers, customers, manufacturers, research partners and other third parties with whom we conduct business and our expectations with respect to the duration of such impacts and the resulting effects on our business;
- our ability to realize the anticipated benefits and synergies of our recent and any future acquisitions or other strategic transactions;
- our intended use of the net proceeds from offerings of our securities under this prospectus;
- our ability to continue as a going concern within 12 months from the date of our Annual Report on Form 10-K for the year ended December 31, 2022 and our ability to obtain funding for our operations; and
- our ability to attract collaborators and strategic partnerships.

In some cases, you can identify forward-looking statements by terms such as “anticipates,” “believes,” “could,” “estimates,” “expects,” “may,” “plans,” “potential,” “predicts,” “projects,” “should,” “would,” “will” and similar expressions intended to identify forward-looking statements. These statements reflect our current views with respect to future events, are based on assumptions and are subject to risks and uncertainties. Given these risks and uncertainties, you should not place undue reliance on these forward-looking statements. We discuss in greater detail, and incorporate by reference into the registration statement of which this prospectus is a part in their entirety, many of these risks and uncertainties under the heading “Risk Factors” contained in the applicable prospectus supplement, in any free writing prospectus we may authorize for use in connection with a specific offering, and in our most recent Annual Report on Form 10-K and in our subsequent Quarterly Reports on Form 10-Q, as well as any amendments thereto reflected in subsequent filings with the SEC. Also, these forward-looking statements represent our estimates and assumptions only as of the date of the document containing the applicable statement. Unless

required by law, we undertake no obligation to update or revise any forward-looking statements to reflect new information or future events or developments. Thus, you should not assume that our silence over time means that actual events are bearing out as expressed or implied in such forward-looking statements. You should read this prospectus, the applicable prospectus supplement, together with the documents we have filed with the SEC that are incorporated by reference and any free writing prospectus we have authorized for use in connection with a specific offering completely and with the understanding that our actual future results may be materially different from what we expect. We qualify all of the forward-looking statements in the foregoing documents by these cautionary statements.

USE OF PROCEEDS

We will retain broad discretion over the use of the net proceeds from the sale of the securities offered hereby. Except as described in any prospectus supplement or any related free writing prospectus that we may authorize to be provided to you, we currently intend to use the net proceeds from the sale of the securities offered hereby for general corporate purposes, which may include clinical trial and other research and development expenses, capital expenditures, working capital and general and administrative expenses. We may also use a portion of the net proceeds to acquire or invest in businesses, products and technologies that are complementary to our own, although we have no current plans, commitments or agreements with respect to any acquisitions as of the date of this prospectus. We will set forth in the applicable prospectus supplement or free writing prospectus our intended use for the net proceeds received from the sale of any securities sold pursuant to the prospectus supplement or free writing prospectus. Pending these uses, we intend to invest the net proceeds primarily in money market mutual funds, obligations of the U.S. government and its agencies, money market instruments including commercial paper and negotiable certificates of deposit and corporate bonds.

DESCRIPTION OF CAPITAL STOCK

The following description of our capital stock, certain provisions of our certificate of incorporation and bylaws, and certain provisions of Delaware law are summaries. The following description is not complete and is subject to and qualified in its entirety by our certificate of incorporation and bylaws, which are filed as exhibits to the registration statement of which this prospectus is a part, as well as the relevant provisions of the General Corporation Law of the State of Delaware.

As of the date of this prospectus, our certificate of incorporation authorized us to issue 400,000,000 shares of common stock, par value \$0.0001 per share, and 10,000,000 shares of preferred stock, par value \$0.0001 per share.

Common Stock

Voting Rights

Our common stock is entitled to one vote for each share held of record on all matters submitted to a vote of the stockholders, including the election of directors, and does not have cumulative voting rights. Our amended and restated certificate of incorporation, as amended, establishes a classified board of directors that is divided into three classes with staggered three-year terms. Only the directors in one class will be subject to election by a plurality of the votes cast at each annual meeting of our stockholders, with the directors in the other classes continuing for the remainder of their respective three-year terms.

Economic Rights

Except as otherwise expressly provided in our certificate of incorporation or required by applicable law, all shares of common stock have the same rights and privileges and rank equally, share ratably, and are identical in all respects for all matters, including those described below.

Dividends. Subject to preferences that may be applicable to any then-outstanding preferred stock, the holders of common stock are entitled to receive dividends, if any, as may be declared from time to time by our board of directors out of legally available funds.

Liquidation Rights. In the event of our liquidation, dissolution or winding-up, holders of our common stock are entitled to share ratably in the net assets legally available for distribution to stockholders after the payment of all of our debts and other liabilities, subject to the satisfaction of any liquidation preference granted to the holders of any outstanding shares of preferred stock.

No Preemptive or Similar Rights

The holders of our shares of common stock are not entitled to preemptive rights, and are not subject to conversion, redemption or sinking fund provisions. The rights, preferences and privileges of the holders of our common stock are subject to, and may be adversely affected by, the rights of the holders of shares of any series of our preferred stock that we may designate and issue in the future.

Preferred Stock

Our board of directors may authorize the issuance of preferred stock with voting or conversion rights that could adversely affect the voting power or other rights of the holders of the common stock. The issuance of preferred stock, while providing flexibility in connection with possible acquisitions and other corporate purposes, could, among other things, have the effect of delaying, deferring or preventing a change in our control that may otherwise benefit holders of our common stock and may adversely affect the market price of the common stock and the voting and other rights of the holders of common stock. We have no current plans to issue any shares of preferred stock.

Anti-Takeover Provisions

We are subject to Section 203 of the General Corporation Law of the State of Delaware. Section 203 generally prohibits a public Delaware corporation from engaging in a “business combination” with an “interested stockholder” for a period of three years after the date of the transaction in which the person became an interested stockholder, unless:

- prior to the date of the transaction, the board of directors of the corporation approved either the business combination or the transaction which resulted in the stockholder becoming an interested stockholder;
- upon consummation of the transaction which resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the commencement of the transaction, excluding for purposes of determining the number of shares outstanding (but not the outstanding voting stock owned by the interested stockholder) (a) shares owned by persons who are directors and also officers and (b) shares owned by employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or
- on or subsequent to the consummation of the transaction, the business combination is approved by the board of directors and authorized at an annual or special meeting of stockholders, and not by written consent, by the affirmative vote of at least 66 2/3% of the outstanding voting stock which is not owned by the interested stockholder.

Section 203 of the DGCL defines a business combination to include:

- any merger or consolidation involving the corporation and the interested stockholder;
- any sale, lease, exchange, mortgage, pledge, transfer or other disposition involving the interested stockholder of 10% or more of the assets of the corporation;
- subject to exceptions, any transaction involving the corporation that has the effect of increasing the proportionate share of the stock of any class or series of the corporation beneficially owned by the interested stockholder;
- subject to exceptions, any transaction that results in the issuance or transfer by the corporation of any stock of the corporation to the interested stockholder; and
- the receipt by the interested stockholder of the benefit of any loans, advances, guarantees, pledges or other financial benefits provided by or through the corporation.

In general, Section 203 defines an interested stockholder as any entity or person beneficially owning 15% or more of the outstanding voting stock of the corporation and any entity or person affiliated with or controlling or controlled by the entity or person.

Certificate of Incorporation and Bylaws to be in Effect upon the Closing of this Offering

Among other things, our amended and restated certificate of incorporation, as amended, and amended and restated bylaws:

- do not provide stockholders with cumulative voting rights such that stockholders holding a majority of the voting power of our shares of common stock may be able to elect all of our directors;
- provide for stockholder actions to be taken at a duly called meeting of stockholders and not by written consent;
- provide that a special meeting of stockholders may only be called by a majority of our board of directors, the chair of our board of directors or our chief executive officer;
- establish an advance notice procedure for stockholder proposals to be brought before an annual meeting of our stockholders, including proposed nominations of persons for election to our board of directors;
- divide our board of directors into three classes with staggered three-year terms;
- provide that the authorized number of directors may be changed only by resolution adopted by a majority of the authorized number of directors constituting the board of directors;

- provide that the board of directors or any individual director may only be removed with cause and the affirmative vote of the holders of at least 66 2/3% of the voting power of all of our then outstanding common stock;
- provide that all vacancies, including newly created directorships, may, except as otherwise required by law or subject to the rights of holders of preferred stock as designated from time to time, be filled by the affirmative vote of a majority of directors then in office, even if less than a quorum;
- provide that the Court of Chancery of the State of Delaware will be the sole and exclusive forum for (i) any derivative action or proceeding brought on our behalf, (ii) any action asserting a claim of breach of a fiduciary duty owed by any of our directors or officers to us or our stockholders, (iii) any action asserting a claim against us arising pursuant to any provision of the General Corporation Law of the State of Delaware or our certificate of incorporation or bylaws, or (iv) any action asserting a claim against us governed by the internal affairs doctrine (these choice of forum provisions do not apply to suits brought to enforce a duty or liability created by the Securities Act, the Exchange Act, or any other claim for which the federal courts have exclusive jurisdiction).

The foregoing provisions make it difficult for another party to obtain control of us by replacing our board of directors. Since our board of directors has the power to retain and discharge our officers, these provisions could also make it more difficult for existing stockholders or another party to effect a change in management. In addition, the authorization of undesignated preferred stock makes it possible for our board of directors to issue preferred stock with voting or other rights or preferences that could impede the success of any attempt to change our control.

These provisions are designed to reduce our vulnerability to an unsolicited acquisition proposal and to discourage certain tactics that may be used in proxy fights. However, such provisions could have the effect of discouraging others from making tender offers for our shares and may have the effect of deterring hostile takeovers or delaying changes in our control or management. As a consequence, these provisions may also inhibit fluctuations in the market price of our stock that could result from actual or rumored takeover attempts.

Section 203 of the General Corporation Law of the State of Delaware

We are subject to Section 203 of the General Corporation Law of the State of Delaware, which prohibits a Delaware corporation from engaging in any business combination with any interested stockholder for a period of three years after the date that such stockholder became an interested stockholder, subject to certain exceptions.

Transfer Agent and Registrar

Our transfer agent and registrar for our common stock is American Stock Transfer & Trust Company, LLC. The transfer agent for any series of preferred stock that we may offer under this prospectus will be named and described in the prospectus supplement related to that series.

Listing on the Nasdaq Capital Market

Our common stock is listed on the Nasdaq Capital Market under the symbol “BNGO.” The applicable prospectus supplement will contain information, where applicable, as to any other listing, if any, on the Nasdaq Capital Market or any securities market or other exchange of the preferred stock covered by such prospectus supplement.

DESCRIPTION OF DEBT SECURITIES

We may issue debt securities from time to time, in one or more series, as either senior or subordinated debt or as senior or subordinated convertible debt. While the terms we have summarized below will apply generally to any debt securities that we may offer under this prospectus, we will describe the particular terms of any debt securities that we may offer in more detail in the applicable prospectus supplement. The terms of any debt securities offered under a prospectus supplement may differ from the terms described below. Unless the context requires otherwise, whenever we refer to the indenture, we also are referring to any supplemental indentures that specify the terms of a particular series of debt securities.

We will issue the debt securities under the indenture that we will enter into with the trustee named in the indenture. The indenture will be qualified under the Trust Indenture Act of 1939, as amended, or the Trust Indenture Act. We have filed the form of indenture as an exhibit to the registration statement of which this prospectus is a part, and supplemental indentures and forms of debt securities containing the terms of the debt securities being offered will be filed as exhibits to the registration statement of which this prospectus is a part or will be incorporated by reference from reports that we file with the SEC.

The following summary of material provisions of the debt securities and the indenture is subject to, and qualified in its entirety by reference to, all of the provisions of the indenture applicable to a particular series of debt securities. We urge you to read the applicable prospectus supplements and any related free writing prospectuses related to the debt securities that we may offer under this prospectus, as well as the complete indenture that contains the terms of the debt securities.

General

The indenture does not limit the amount of debt securities that we may issue. It provides that we may issue debt securities up to the principal amount that we may authorize and may be in any currency or currency unit that we may designate. Except for the limitations on consolidation, merger and sale of all or substantially all of our assets contained in the indenture, the terms of the indenture do not contain any covenants or other provisions designed to give holders of any debt securities protection against changes in our operations, financial condition or transactions involving us.

We may issue the debt securities issued under the indenture as “discount securities,” which means they may be sold at a discount below their stated principal amount. These debt securities, as well as other debt securities that are not issued at a discount, may be issued with “original issue discount,” or OID, for U.S. federal income tax purposes because of interest payment and other characteristics or terms of the debt securities. Material U.S. federal income tax considerations applicable to debt securities issued with OID will be described in more detail in any applicable prospectus supplement.

We will describe in the applicable prospectus supplement the terms of the series of debt securities being offered, including:

- the title of the series of debt securities;
- any limit upon the aggregate principal amount that may be issued;
- the maturity date or dates;
- the form of the debt securities of the series;
- the applicability of any guarantees;
- whether or not the debt securities will be secured or unsecured, and the terms of any secured debt;
- whether the debt securities rank as senior debt, senior subordinated debt, subordinated debt or any combination thereof, and the terms of any subordination;
- if the price (expressed as a percentage of the aggregate principal amount thereof) at which such debt securities will be issued is a price other than the principal amount thereof, the portion of the principal amount thereof payable upon declaration of acceleration of the maturity thereof, or if applicable, the portion of the principal amount of such debt securities that is convertible into another security or the method by which any such portion shall be determined;

- the interest rate or rates, which may be fixed or variable, or the method for determining the rate and the date interest will begin to accrue, the dates interest will be payable and the regular record dates for interest payment dates or the method for determining such dates;
- our right, if any, to defer payment of interest and the maximum length of any such deferral period;
- if applicable, the date or dates after which, or the period or periods during which, and the price or prices at which, we may, at our option, redeem the series of debt securities pursuant to any optional or provisional redemption provisions and the terms of those redemption provisions;
- the date or dates, if any, on which, and the price or prices at which we are obligated, pursuant to any mandatory sinking fund or analogous fund provisions or otherwise, to redeem, or at the holder's option to purchase, the series of debt securities and the currency or currency unit in which the debt securities are payable;
- the denominations in which we will issue the series of debt securities, if other than denominations of \$1,000 and any integral multiple thereof;
- any and all terms, if applicable, relating to any auction or remarketing of the debt securities of that series and any security for our obligations with respect to such debt securities and any other terms which may be advisable in connection with the marketing of debt securities of that series;
- whether the debt securities of the series shall be issued in whole or in part in the form of a global security or securities; the terms and conditions, if any, upon which such global security or securities may be exchanged in whole or in part for other individual securities; and the depositary for such global security or securities;
- if applicable, the provisions relating to conversion or exchange of any debt securities of the series and the terms and conditions upon which such debt securities will be so convertible or exchangeable, including the conversion or exchange price, as applicable, or how it will be calculated and may be adjusted, any mandatory or optional (at our option or the holders' option) conversion or exchange features, the applicable conversion or exchange period and the manner of settlement for any conversion or exchange;
- if other than the full principal amount thereof, the portion of the principal amount of debt securities of the series which shall be payable upon declaration of acceleration of the maturity thereof;
- additions to or changes in the covenants applicable to the particular debt securities being issued, including, among others, the consolidation, merger or sale covenant;
- additions to or changes in the events of default with respect to the securities and any change in the right of the trustee or the holders to declare the principal, premium, if any, and interest, if any, with respect to such securities to be due and payable;
- additions to or changes in or deletions of the provisions relating to covenant defeasance and legal defeasance;
- additions to or changes in the provisions relating to satisfaction and discharge of the indenture;
- additions to or changes in the provisions relating to the modification of the indenture both with and without the consent of holders of debt securities issued under the indenture;
- the currency of payment of debt securities if other than U.S. dollars and the manner of determining the equivalent amount in U.S. dollars;
- whether interest will be payable in cash or additional debt securities at our or the holders' option and the terms and conditions upon which the election may be made;
- the terms and conditions, if any, upon which we will pay amounts in addition to the stated interest, premium, if any and principal amounts of the debt securities of the series to any holder that is not a "United States person" for federal tax purposes;
- any restrictions on transfer, sale or assignment of the debt securities of the series; and
- any other specific terms, preferences, rights or limitations of, or restrictions on, the debt securities, any other additions or changes in the provisions of the indenture, and any terms that may be required by us or advisable under applicable laws or regulations.

Conversion or Exchange Rights

We will set forth in the applicable prospectus supplement the terms on which a series of debt securities may be convertible into or exchangeable for our common stock or our other securities. We will include provisions as to settlement upon conversion or exchange and whether conversion or exchange is mandatory, at the option of the holder or at our option. We may include provisions pursuant to which the number of shares of our common stock or our other securities that the holders of the series of debt securities receive would be subject to adjustment.

Consolidation, Merger or Sale

Unless we provide otherwise in the prospectus supplement applicable to a particular series of debt securities, the indenture will not contain any covenant that restricts our ability to merge or consolidate, or sell, convey, transfer or otherwise dispose of our assets as an entirety or substantially as an entirety. However, any successor to or acquirer of such assets (other than a subsidiary of ours) must assume all of our obligations under the indenture or the debt securities, as appropriate.

Events of Default under the Indenture

Unless we provide otherwise in the prospectus supplement applicable to a particular series of debt securities, the following are events of default under the indenture with respect to any series of debt securities that we may issue:

- if we fail to pay any installment of interest on any series of debt securities, as and when the same shall become due and payable, and such default continues for a period of 90 days; provided, however, that a valid extension of an interest payment period by us in accordance with the terms of any indenture supplemental thereto shall not constitute a default in the payment of interest for this purpose;
- if we fail to pay the principal of, or premium, if any, on any series of debt securities as and when the same shall become due and payable whether at maturity, upon redemption, by declaration or otherwise, or in any payment required by any sinking or analogous fund established with respect to such series; provided, however, that a valid extension of the maturity of such debt securities in accordance with the terms of any indenture supplemental thereto shall not constitute a default in the payment of principal or premium, if any;
- if we fail to observe or perform any other covenant or agreement contained in the debt securities or the indenture, other than a covenant specifically relating to another series of debt securities, and our failure continues for 90 days after we receive written notice of such failure, requiring the same to be remedied and stating that such is a notice of default thereunder, from the trustee or holders of at least 25% in aggregate principal amount of the outstanding debt securities of the applicable series; and
- if specified events of bankruptcy, insolvency or reorganization occur.

If an event of default with respect to debt securities of any series occurs and is continuing, other than an event of default specified in the last bullet point above, the trustee or the holders of at least 25% in aggregate principal amount of the outstanding debt securities of that series, by notice to us in writing, and to the trustee if notice is given by such holders, may declare the unpaid principal of, premium, if any, and accrued interest, if any, due and payable immediately. If an event of default specified in the last bullet point above occurs with respect to us, the principal amount of and accrued interest, if any, of each issue of debt securities then outstanding shall be due and payable without any notice or other action on the part of the trustee or any holder.

The holders of a majority in principal amount of the outstanding debt securities of an affected series may waive any default or event of default with respect to the series and its consequences, except defaults or events of default regarding payment of principal, premium, if any, or interest, unless we have cured the default or event of default in accordance with the indenture. Any waiver shall cure the default or event of default.

Subject to the terms of the indenture, if an event of default under an indenture shall occur and be continuing, the trustee will be under no obligation to exercise any of its rights or powers under such indenture at the request or direction of any of the holders of the applicable series of debt securities, unless such holders have offered the trustee reasonable indemnity. The holders of a majority in principal amount of the outstanding debt securities of any series will have the right to direct the time, method and place of conducting any proceeding for any remedy available to the trustee, or exercising any trust or power conferred on the trustee, with respect to the debt securities of that series, provided that:

- the direction so given by the holder is not in conflict with any law or the applicable indenture; and
- subject to its duties under the Trust Indenture Act, the trustee need not take any action that might involve it in personal liability or might be unduly prejudicial to the holders not involved in the proceeding.

A holder of the debt securities of any series will have the right to institute a proceeding under the indenture or to appoint a receiver or trustee, or to seek other remedies only if:

- the holder has given written notice to the trustee of a continuing event of default with respect to that series;
- the holders of at least 25% in aggregate principal amount of the outstanding debt securities of that series have made written request;
- such holders have offered to the trustee indemnity satisfactory to it against the costs, expenses and liabilities to be incurred by the trustee in compliance with the request; and
- the trustee does not institute the proceeding, and does not receive from the holders of a majority in aggregate principal amount of the outstanding debt securities of that series other conflicting directions within 90 days after the notice, request and offer.

These limitations do not apply to a suit instituted by a holder of debt securities if we default in the payment of the principal, premium, if any, or interest on, the debt securities.

We will periodically file statements with the trustee regarding our compliance with specified covenants in the indenture.

Modification of Indenture; Waiver

We and the trustee may change an indenture without the consent of any holders with respect to specific matters:

- to cure any ambiguity, defect or inconsistency in the indenture or in the debt securities of any series;
- to comply with the provisions described above under “Description of Debt Securities—Consolidation, Merger or Sale;”
- to provide for uncertificated debt securities in addition to or in place of certificated debt securities;
- to add to our covenants, restrictions, conditions or provisions such new covenants, restrictions, conditions or provisions for the benefit of the holders of all or any series of debt securities, to make the occurrence, or the occurrence and the continuance, of a default in any such additional covenants, restrictions, conditions or provisions an event of default or to surrender any right or power conferred upon us in the indenture;
- to add to, delete from or revise the conditions, limitations, and restrictions on the authorized amount, terms, or purposes of issue, authentication and delivery of debt securities, as set forth in the indenture;
- to make any change that does not adversely affect the interests of any holder of debt securities of any series in any material respect;
- to provide for the issuance of and establish the form and terms and conditions of the debt securities of any series as provided above under “Description of Debt Securities—General” to establish the form of any certifications required to be furnished pursuant to the terms of the indenture or any series of debt securities, or to add to the rights of the holders of any series of debt securities;
- to evidence and provide for the acceptance of appointment under any indenture by a successor trustee; or
- to comply with any requirements of the SEC in connection with the qualification of any indenture under the Trust Indenture Act.

In addition, under the indenture, the rights of holders of a series of debt securities may be changed by us and the trustee with the written consent of the holders of at least a majority in aggregate principal amount of the outstanding debt securities of each series that is affected. However, unless we provide otherwise in the prospectus supplement applicable to a particular series of debt securities, we and the trustee may make the following changes only with the consent of each holder of any outstanding debt securities affected:

- extending the fixed maturity of any debt securities of any series;
- reducing the principal amount, reducing the rate of or extending the time of payment of interest, or reducing any premium payable upon the redemption of any series of any debt securities; or
- reducing the percentage of debt securities, the holders of which are required to consent to any amendment, supplement, modification or waiver.

Discharge

Each indenture provides that we can elect to be discharged from our obligations with respect to one or more series of debt securities, except for specified obligations, including obligations to:

- provide for payment;
- register the transfer or exchange of debt securities of the series;
- replace stolen, lost or mutilated debt securities of the series;
- pay principal of and premium and interest on any debt securities of the series;
- maintain paying agencies;
- hold monies for payment in trust;
- recover excess money held by the trustee;
- compensate and indemnify the trustee; and
- appoint any successor trustee.

In order to exercise our rights to be discharged, we must deposit with the trustee money or government obligations sufficient to pay all the principal of, any premium, if any, and interest on, the debt securities of the series on the dates payments are due.

Form, Exchange and Transfer

We will issue the debt securities of each series only in fully registered form without coupons and, unless we provide otherwise in the applicable prospectus supplement, in denominations of \$1,000 and any integral multiple thereof. The indenture provides that we may issue debt securities of a series in temporary or permanent global form and as book-entry securities that will be deposited with, or on behalf of, The Depository Trust Company, or DTC, or another depository named by us and identified in the applicable prospectus supplement with respect to that series. To the extent the debt securities of a series are issued in global form and as book-entry, a description of terms relating to any book-entry securities will be set forth in the applicable prospectus supplement.

At the option of the holder, subject to the terms of the indenture and the limitations applicable to global securities described in the applicable prospectus supplement, the holder of the debt securities of any series can exchange the debt securities for other debt securities of the same series, in any authorized denomination and of like tenor and aggregate principal amount.

Subject to the terms of the indenture and the limitations applicable to global securities set forth in the applicable prospectus supplement, holders of the debt securities may present the debt securities for exchange or for registration of transfer, duly endorsed or with the form of transfer endorsed thereon duly executed if so required by us or the security registrar, at the office of the security registrar or at the office of any transfer agent designated by us for this purpose. Unless otherwise provided in the debt securities that the holder presents for transfer or exchange, we will impose no service charge for any registration of transfer or exchange, but we may require payment of any taxes or other governmental charges.

We will name in the applicable prospectus supplement the security registrar, and any transfer agent in addition to the security registrar, that we initially designate for any debt securities. We may at any time designate additional

transfer agents or rescind the designation of any transfer agent or approve a change in the office through which any transfer agent acts, except that we will be required to maintain a transfer agent in each place of payment for the debt securities of each series.

If we elect to redeem the debt securities of any series, we will not be required to:

- issue, register the transfer of, or exchange any debt securities of that series during a period beginning at the opening of business 15 days before the day of mailing of a notice of redemption of any debt securities that may be selected for redemption and ending at the close of business on the day of the mailing; or
- register the transfer of or exchange any debt securities so selected for redemption, in whole or in part, except the unredeemed portion of any debt securities we are redeeming in part.

Information Concerning the Trustee

The trustee, other than during the occurrence and continuance of an event of default under an indenture, undertakes to perform only those duties as are specifically set forth in the applicable indenture. Upon an event of default under an indenture, the trustee must use the same degree of care as a prudent person would exercise or use in the conduct of his or her own affairs. Subject to this provision, the trustee is under no obligation to exercise any of the powers given it by the indenture at the request of any holder of debt securities unless it is offered reasonable security and indemnity against the costs, expenses and liabilities that it might incur.

Payment and Paying Agents

Unless we otherwise indicate in the applicable prospectus supplement, we will make payment of the interest on any debt securities on any interest payment date to the person in whose name the debt securities, or one or more predecessor securities, are registered at the close of business on the regular record date for the interest.

We will pay principal of and any premium and interest on the debt securities of a particular series at the office of the paying agents designated by us, except that unless we otherwise indicate in the applicable prospectus supplement, we will make interest payments by check that we will mail to the holder or by wire transfer to certain holders. Unless we otherwise indicate in the applicable prospectus supplement, we will designate the corporate trust office of the trustee as our sole paying agent for payments with respect to debt securities of each series. We will name in the applicable prospectus supplement any other paying agents that we initially designate for the debt securities of a particular series. We will maintain a paying agent in each place of payment for the debt securities of a particular series.

All money we pay to a paying agent or the trustee for the payment of the principal of or any premium or interest on any debt securities that remains unclaimed at the end of two years after such principal, premium or interest has become due and payable will be repaid to us, and the holder of the debt security thereafter may look only to us for payment thereof.

Governing Law

The indenture and the debt securities will be governed by and construed in accordance with the internal laws of the State of New York, except to the extent that the Trust Indenture Act is applicable.

DESCRIPTION OF WARRANTS

The following description, together with the additional information we may include in any applicable prospectus supplements and free writing prospectuses that we may authorize to be distributed to you, summarizes the material terms and provisions of the warrants that we may offer under this prospectus, which may consist of warrants to purchase common stock, preferred stock or debt securities and may be issued in one or more series. Warrants may be issued independently or together with common stock, preferred stock or debt securities offered by any prospectus supplement, and may be attached to or separate from those securities. While the terms we have summarized below will apply generally to any warrants that we may offer under this prospectus, we will describe the particular terms of any series of warrants that we may offer in more detail in the applicable prospectus supplement and any applicable free writing prospectus. The terms of any warrants offered under a prospectus supplement may differ from the terms described below. However, no prospectus supplement will fundamentally change the terms that are set forth in this prospectus or offer a security that is not registered and described in this prospectus at the time of its effectiveness.

We have filed forms of the warrant agreements and forms of warrant certificates containing the terms of the warrants being offered as exhibits to the registration statement of which this prospectus is a part. We will file as exhibits to the registration statement of which this prospectus is a part, or will incorporate by reference from reports that we file with the SEC, the form of warrant agreement, if any, including a form of warrant certificate, that describes the terms of the particular series of warrants we are offering. The following summaries of material provisions of the warrants and the warrant agreements are subject to, and qualified in their entirety by reference to, all the provisions of the warrant agreement and warrant certificate applicable to the particular series of warrants that we may offer under this prospectus. We urge you to read the applicable prospectus supplements related to the particular series of warrants that we may offer under this prospectus, as well as any related free writing prospectuses, and the complete warrant agreements and warrant certificates that contain the terms of the warrants.

General

We will describe in the applicable prospectus supplement the terms relating to a series of warrants being offered, including:

- the title of such securities;
- the offering price or prices and aggregate number of warrants offered;
- the currency or currencies for which the warrants may be purchased;
- if applicable, the designation and terms of the securities with which the warrants are issued and the number of warrants issued with each such security or each principal amount of such security;
- if applicable, the date on and after which the warrants and the related securities will be separately transferable;
- if applicable, the minimum or maximum amount of such warrants which may be exercised at any one time;
- in the case of warrants to purchase debt securities, the principal amount of debt securities purchasable upon exercise of one warrant and the price at which, and currency in which, this principal amount of debt securities may be purchased upon such exercise;
- in the case of warrants to purchase common stock or preferred stock, the number of shares of common stock or preferred stock, as the case may be, purchasable upon the exercise of one warrant and the price at which, and the currency in which, these shares may be purchased upon such exercise;
- the effect of any merger, consolidation, sale or other disposition of our business on the warrant agreements and the warrants;
- the terms of any rights to redeem or call the warrants;
- the terms of any rights to force the exercise of the warrants;
- any provisions for changes to or adjustments in the exercise price or number of securities issuable upon exercise of the warrants;
- the dates on which the right to exercise the warrants will commence and expire;
- the manner in which the warrant agreements and warrants may be modified;

- a discussion of any material or special U.S. federal income tax consequences of holding or exercising the warrants;
- the terms of the securities issuable upon exercise of the warrants; and
- any other specific terms, preferences, rights or limitations of or restrictions on the warrants.

Before exercising their warrants, holders of warrants will not have any of the rights of holders of the securities purchasable upon such exercise, including:

- in the case of warrants to purchase debt securities, the right to receive payments of principal of, or premium, if any, or interest on, the debt securities purchasable upon exercise or to enforce covenants in the applicable indenture; or
- in the case of warrants to purchase common stock or preferred stock, the right to receive dividends, if any, or, payments upon our liquidation, dissolution or winding up or to exercise voting rights, if any.

Exercise of Warrants

Each warrant will entitle the holder to purchase the securities that we specify in the applicable prospectus supplement at the exercise price that we describe in the applicable prospectus supplement. Unless we otherwise specify in the applicable prospectus supplement, holders of the warrants may exercise the warrants at any time up to the specified time on the expiration date that we set forth in the applicable prospectus supplement. After the close of business on the expiration date, unexercised warrants will become void.

Unless we otherwise specify in the applicable prospectus supplement, holders of the warrants may exercise the warrants by delivering the warrant certificate representing the warrants to be exercised together with specified information, and paying the required amount to the warrant agent in immediately available funds, as provided in the applicable prospectus supplement. We will set forth on the reverse side of the warrant certificate and in the applicable prospectus supplement the information that the holder of the warrant will be required to deliver to the warrant agent in connection with the exercise of the warrant.

Upon receipt of the required payment and the warrant certificate properly completed and duly executed at the corporate trust office of the warrant agent or any other office indicated in the applicable prospectus supplement, we will issue and deliver the securities purchasable upon such exercise. If fewer than all of the warrants represented by the warrant certificate are exercised, then we will issue a new warrant certificate for the remaining amount of warrants. If we so indicate in the applicable prospectus supplement, holders of the warrants may surrender securities as all or part of the exercise price for warrants.

Governing Law

Unless we provide otherwise in the applicable prospectus supplement, the warrants and warrant agreements, and any claim, controversy or dispute arising under or related to the warrants or warrant agreements, will be governed by and construed in accordance with the laws of the State of New York.

Enforceability of Rights by Holders of Warrants

Each warrant agent will act solely as our agent under the applicable warrant agreement and will not assume any obligation or relationship of agency or trust with any holder of any warrant. A single bank or trust company may act as warrant agent for more than one issue of warrants. A warrant agent will have no duty or responsibility in case of any default by us under the applicable warrant agreement or warrant, including any duty or responsibility to initiate any proceedings at law or otherwise, or to make any demand upon us. Any holder of a warrant may, without the consent of the related warrant agent or the holder of any other warrant, enforce by appropriate legal action its right to exercise, and receive the securities purchasable upon exercise of, its warrants.

LEGAL OWNERSHIP OF SECURITIES

We can issue securities in registered form or in the form of one or more global securities. We describe global securities in greater detail below. We refer to those persons who have securities registered in their own names on the books that we or any applicable trustee or depository maintain for this purpose as the “holders” of those securities. These persons are the legal holders of the securities. We refer to those persons who, indirectly through others, own beneficial interests in securities that are not registered in their own names, as “indirect holders” of those securities. As we discuss below, indirect holders are not legal holders, and investors in securities issued in book-entry form or in street name will be indirect holders.

Book-Entry Holders

We may issue securities in book-entry form only, as we will specify in the applicable prospectus supplement. This means securities may be represented by one or more global securities registered in the name of a financial institution that holds them as depository on behalf of other financial institutions that participate in the depository’s book-entry system. These participating institutions, which are referred to as participants, in turn, hold beneficial interests in the securities on behalf of themselves or their customers.

Only the person in whose name a security is registered is recognized as the holder of that security. Global securities will be registered in the name of the depository or its participants. Consequently, for global securities, we will recognize only the depository as the holder of the securities, and we will make all payments on the securities to the depository. The depository passes along the payments it receives to its participants, which in turn pass the payments along to their customers who are the beneficial owners. The depository and its participants do so under agreements they have made with one another or with their customers; they are not obligated to do so under the terms of the securities.

As a result, investors in a global security will not own securities directly. Instead, they will own beneficial interests in a global security, through a bank, broker or other financial institution that participates in the depository’s book-entry system or holds an interest through a participant. As long as the securities are issued in global form, investors will be indirect holders, and not legal holders, of the securities.

Street Name Holders

A global security may be terminated in certain situations as described under “—Special Situations When a Global Security Will Be Terminated,” or issue securities that are not issued in global form. In these cases, investors may choose to hold their securities in their own names or in “street name.” Securities held by an investor in street name would be registered in the name of a bank, broker or other financial institution that the investor chooses, and the investor would hold only a beneficial interest in those securities through an account he or she maintains at that institution.

For securities held in street name, we or any applicable trustee or depository will recognize only the intermediary banks, brokers and other financial institutions in whose names the securities are registered as the holders of those securities, and we or any such trustee or depository will make all payments on those securities to them. These institutions pass along the payments they receive to their customers who are the beneficial owners, but only because they agree to do so in their customer agreements or because they are legally required to do so. Investors who hold securities in street name will be indirect holders, not holders, of those securities.

Legal Holders

Our obligations, as well as the obligations of any applicable trustee or third party employed by us or a trustee, run only to the legal holders of the securities. We do not have obligations to investors who hold beneficial interests in global securities, in street name or by any other indirect means. This will be the case whether an investor chooses to be an indirect holder of a security or has no choice because we are issuing the securities only in global form.

For example, once we make a payment or give a notice to the legal holder, we have no further responsibility for the payment or notice even if that legal holder is required, under agreements with its participants or customers or by law, to pass it along to the indirect holders but does not do so. Similarly, we may want to obtain the approval of the holders to amend an indenture, to relieve us of the consequences of a default or of our obligation to comply with a particular provision of an indenture, or for other purposes. In such an event, we would seek approval only from the legal holders, and not the indirect holders, of the securities. Whether and how the legal holders contact the indirect holders is up to the legal holders.

Special Considerations for Indirect Holders

If you hold securities through a bank, broker or other financial institution, either in book-entry form because the securities are represented by one or more global securities or in street name, you should check with your own institution to find out:

- how it handles securities payments and notices;
- whether it imposes fees or charges;
- how it would handle a request for the holders' consent, if ever required;
- whether and how you can instruct it to send you securities registered in your own name so you can be a holder, if that is permitted in the future;
- how it would exercise rights under the securities if there were a default or other event triggering the need for holders to act to protect their interests; and
- if the securities are in book-entry form, how the depositary's rules and procedures will affect these matters.

Global Securities

A global security is a security that represents one or any other number of individual securities held by a depositary. Generally, all securities represented by the same global securities will have the same terms.

Each security issued in book-entry form will be represented by a global security that we issue to, deposit with and register in the name of a financial institution or its nominee that we select. The financial institution that we select for this purpose is called the depositary. Unless we specify otherwise in the applicable prospectus supplement, DTC will be the depositary for all securities issued in book-entry form.

A global security may not be transferred to or registered in the name of anyone other than the depositary, its nominee or a successor depositary, unless special termination situations arise. We describe those situations below under "—Special Situations When a Global Security Will Be Terminated." As a result of these arrangements, the depositary, or its nominee, will be the sole registered owner and legal holder of all securities represented by a global security, and investors will be permitted to own only beneficial interests in a global security. Beneficial interests must be held by means of an account with a broker, bank or other financial institution that in turn has an account with the depositary or with another institution that does. Thus, an investor whose security is represented by a global security will not be a legal holder of the security, but only an indirect holder of a beneficial interest in the global security.

If the prospectus supplement for a particular security indicates that the security will be issued as a global security, then the security will be represented by a global security at all times unless and until the global security is terminated. If termination occurs, we may issue the securities through another book-entry clearing system or decide that the securities may no longer be held through any book-entry clearing system.

Special Considerations for Global Securities

As an indirect holder, an investor's rights relating to a global security will be governed by the account rules of the investor's financial institution and of the depositary, as well as general laws relating to securities transfers. We do not recognize an indirect holder as a holder of securities and instead deal only with the depositary that holds the global security.

If securities are issued only as global securities, an investor should be aware of the following:

- an investor cannot cause the securities to be registered in his or her name, and cannot obtain non-global certificates for his or her interest in the securities, except in the special situations we describe below;
- an investor will be an indirect holder and must look to his or her own bank or broker for payments on the securities and protection of his or her legal rights relating to the securities, as we describe above;
- an investor may not be able to sell interests in the securities to some insurance companies and to other institutions that are required by law to own their securities in non-book-entry form;
- an investor may not be able to pledge his or her interest in the global security in circumstances where certificates representing the securities must be delivered to the lender or other beneficiary of the pledge in order for the pledge to be effective;

- the depositary's policies, which may change from time to time, will govern payments, transfers, exchanges and other matters relating to an investor's interest in the global security;
- we and any applicable trustee have no responsibility for any aspect of the depositary's actions or for its records of ownership interests in the global security, nor will we or any applicable trustee supervise the depositary in any way;
- the depositary may, and we understand that DTC will, require that those who purchase and sell interests in the global security within its book-entry system use immediately available funds, and your broker or bank may require you to do so as well; and
- financial institutions that participate in the depositary's book-entry system, and through which an investor holds its interest in the global security, may also have their own policies affecting payments, notices and other matters relating to the securities.

There may be more than one financial intermediary in the chain of ownership for an investor. We do not monitor and are not responsible for the actions of any of those intermediaries.

Special Situations When a Global Security Will Be Terminated

In a few special situations described below, a global security will terminate and interests in it will be exchanged for physical certificates representing those interests. After that exchange, the choice of whether to hold securities directly or in street name will be up to the investor. Investors must consult their own banks or brokers to find out how to have their interests in securities transferred to their own names, so that they will be direct holders. We have described the rights of holders and street name investors above.

Unless we provide otherwise in the applicable prospectus supplement, the global security will terminate when the following special situations occur:

- if the depositary notifies us that it is unwilling, unable or no longer qualified to continue as depositary for that global security and we do not appoint another institution to act as depositary within 90 days;
- if we notify any applicable trustee that we wish to terminate that global security; or
- if an event of default has occurred with regard to securities represented by that global security and has not been cured or waived.

The applicable prospectus supplement may also list additional situations for terminating a global security that would apply only to the particular series of securities covered by the applicable prospectus supplement. When a global security terminates, the depositary, and neither we nor any applicable trustee, is responsible for deciding the names of the institutions that will be the initial direct holders.

PLAN OF DISTRIBUTION

We may sell the securities covered hereby from time to time pursuant to underwritten public offerings, direct sales to the public, negotiated transactions, block trades or a combination of these methods. A distribution of these securities offered by this prospectus may also be effected through the issuance of derivative securities, including without limitation and warrants. We may sell the securities to or through underwriters or dealers, through agents, or directly to one or more purchasers. We may distribute securities from time to time in one or more transactions:

- at a fixed price or prices, which may be changed;
- at market prices prevailing at the time of sale;
- at prices related to such prevailing market prices; or
- at negotiated prices.

We may also sell equity securities covered by this registration statement in an “at the market offering” as defined in Rule 415 under the Securities Act. Such offering may be made into an existing trading market for such securities in transactions at other than a fixed price, either:

- on or through the facilities of the Nasdaq Capital Market or any other securities exchange or quotation or trading service on which such securities may be listed, quoted or traded at the time of sale; and/or
- to or through a market maker other than on the Nasdaq Capital Market or such other securities exchanges or quotation or trading services.

Such “at-the-market offerings,” if any, may be conducted by underwriters acting as principal or agent.

A prospectus supplement or supplements (and any related free writing prospectus that we may authorize to be provided to you) will describe the terms of the offering of the securities, including, to the extent applicable:

- the name or names of any underwriters, dealers or agents, if any;
- the purchase price of the securities and the proceeds we will receive from the sale;
- any options pursuant to which underwriters may purchase additional securities from us;
- any agency fees or underwriting discounts and other items constituting agents’ or underwriters’ compensation;
- any public offering price;
- any discounts or concessions allowed or reallocated or paid to dealers; and
- any securities exchange or market on which the securities may be listed.

Only underwriters named in the prospectus supplement will be underwriters of the securities offered by the prospectus supplement.

If underwriters are used in the sale, they will acquire the securities for their own account and may resell the securities from time to time in one or more transactions at a fixed public offering price or at varying prices determined at the time of sale. The obligations of the underwriters to purchase the securities will be subject to the conditions set forth in the applicable underwriting agreement. We may offer the securities to the public through underwriting syndicates represented by managing underwriters or by underwriters without a syndicate. Subject to certain conditions, the underwriters will be obligated to purchase all of the securities offered by the prospectus supplement, other than securities covered by any option to purchase additional securities. Any public offering price and any discounts or concessions allowed or reallocated or paid to dealers may change from time to time. We may use underwriters with whom we have a material relationship. We will describe in the prospectus supplement, naming the underwriter, the nature of any such relationship.

We may sell securities directly or through agents we designate from time to time. We will name any agent involved in the offering and sale of securities, and we will describe any commissions and other compensation we will pay the agent in the prospectus supplement. Unless the prospectus supplement states otherwise, our agent will act on a best-efforts basis for the period of its appointment.

We may authorize agents or underwriters to solicit offers by certain types of institutional investors to purchase securities from us at the public offering price set forth in the prospectus supplement pursuant to delayed delivery contracts providing for payment and delivery on a specified date in the future. We will describe the conditions to these contracts and the commissions we must pay for solicitation of these contracts in the prospectus supplement.

We may provide agents and underwriters with indemnification against civil liabilities related to this offering, including liabilities under the Securities Act, or contribution with respect to payments that the agents or underwriters may make with respect to these liabilities. Agents and underwriters may engage in transactions with, or perform services for, us in the ordinary course of business.

All securities we may offer, other than common stock, will be new issues of securities with no established trading market. Any agents or underwriters may make a market in these securities, but will not be obligated to do so and may discontinue any market making at any time without notice. We cannot guarantee the liquidity of the trading markets for any securities. There is currently no market for any of the offered securities, other than our common stock which is listed on the Nasdaq Capital Market. We have no current plans for listing of the debt securities, preferred stock or warrants on any securities exchange or quotation system; any such listing with respect to any particular debt securities, preferred stock or warrants will be described in the applicable prospectus supplement or other offering materials, as the case may be.

Any underwriter may engage in over-allotment, stabilizing transactions, short covering transactions and penalty bids in accordance with Rule 103 of Regulation M under the Exchange Act. Over-allotment involves sales in excess of the offering size, which create a short position. Stabilizing transactions permit bids to purchase the underlying security so long as the stabilizing bids do not exceed a specified maximum. Short covering transactions involve purchases of the securities in the open market after the distribution is completed to cover short positions. Penalty bids permit the underwriters to reclaim a selling concession from a dealer when the securities originally sold by the dealer are purchased in a stabilizing or covering transaction to cover short positions. Those activities may cause the price of the securities to be higher than it would otherwise be. If commenced, the underwriters may discontinue any of the activities at any time. These transactions may be effected on any exchange or over-the-counter market or otherwise.

Any agents and underwriters who are qualified market makers on the Nasdaq Capital Market may engage in passive market making transactions in the securities on the Nasdaq Capital Market in accordance with Rule 103 of Regulation M, during the business day prior to the pricing of the offering, before the commencement of offers or sales of the securities. Passive market makers must comply with applicable volume and price limitations and must be identified as passive market makers. In general, a passive market maker must display its bid at a price not in excess of the highest independent bid for such security; if all independent bids are lowered below the passive market maker's bid, however, the passive market maker's bid must then be lowered when certain purchase limits are exceeded. Passive market making may stabilize the market price of the securities at a level above that which might otherwise prevail in the open market and, if commenced, may be discontinued at any time.

In compliance with guidelines of the Financial Industry Regulatory Authority, or FINRA, the maximum consideration or discount to be received by any FINRA member or independent broker dealer may not exceed 8% of the aggregate amount of the securities offered pursuant to this prospectus and any applicable prospectus supplement.

The specific terms of any lock-up provisions in respect of any given offering will be described in the applicable prospectus supplement.

LEGAL MATTERS

Unless otherwise indicated in the applicable prospectus supplement, the validity of the securities offered by this prospectus, and any prospectus supplement thereto, will be passed upon by Cooley LLP. Additional legal matters may be passed upon for us or any underwriters, dealers or agents, by counsel that we will name in the applicable prospectus supplement.

EXPERTS

The consolidated financial statements as of December 31, 2022 and 2021 and for the years then ended incorporated in this prospectus and in the registration statement of which this prospectus forms a part have been so incorporated in reliance on the report of BDO USA, LLP, an independent registered public accounting firm, incorporated herein by reference, given on the authority of said firm as experts in auditing and accounting. The report on the consolidated financial statements contains an explanatory paragraph regarding the Company's ability to continue as a going concern.

WHERE YOU CAN FIND MORE INFORMATION

This prospectus is part of a registration statement on Form S-3 that we filed with the SEC under the Securities Act and does not contain all the information set forth or incorporated by reference in the registration statement. Whenever a reference is made in this prospectus to any of our contracts, agreements or other documents, the reference may not be complete and you should refer to the exhibits that are a part of the registration statement or the exhibits to the reports or other documents incorporated by reference into this prospectus for a copy of such contract, agreement or other document.

We file annual, quarterly and current reports, proxy statements and other information with the SEC. Our SEC filings are available to the public over the Internet at the SEC's website at <http://www.sec.gov>. Our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q and Current Reports on Form 8-K, including any amendments to those reports, and other information that we file with or furnish to the SEC pursuant to Section 13(a) or 15(d) of the Exchange Act can also be accessed free of charge on the Investor section of our website. These filings will be available as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC.

Our website address is www.bionanogenomics.com. Information contained on or accessible through our website is not a part of this prospectus and is not incorporated by reference herein, and the inclusion of our website address in this prospectus is an inactive textual reference only.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to “incorporate by reference” information into this prospectus, which means that we can disclose important information to you by referring you to another document filed separately with the SEC. The SEC file number for the documents incorporated by reference in this prospectus is 001-38613. The documents incorporated by reference into this prospectus contain important information that you should read about us.

The following documents are incorporated by reference into this document:

- our Annual Report on Form 10-K for the year ended December 31, 2022, filed with the SEC on [March 9, 2023](#);
- our Current Report on Form 8-K (other than information furnished rather than filed) filed with the SEC on [February 3, 2023](#) to the extent the information in such reports is filed and not furnished; and
- the description of our common stock in our registration statement on Form 8-A, which was filed with the SEC on [August 17, 2018](#), including all amendments and reports filed for the purpose of updating such description, including Exhibit 4.10 Annual Report on Form 10-K for the year ended December 31, 2022.

We also incorporate by reference into this prospectus all documents (other than current reports furnished under Item 2.02 or Item 7.01 of Form 8-K and exhibits filed on such form that are related to such items) that are filed by us with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act (i) after the date of the initial filing of the registration statement of which this prospectus forms a part and prior to effectiveness of the registration statement, and (ii) after the effectiveness of the registration statement but prior to the termination of all offerings of securities covered by this prospectus. These documents include periodic reports, such as Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q and Current Reports on Form 8-K, as well as proxy statements. Any statement contained herein or in a document incorporated or deemed to be incorporated by reference into this document will be deemed to be modified or superseded for purposes of the document to the extent that a statement contained in this document or any other subsequently filed document that is deemed to be incorporated by reference into this document modifies or supersedes the statement.

We will provide to each person, including any beneficial owner, to whom a prospectus is delivered, without charge upon written or oral request, a copy of any or all of the documents that are incorporated by reference into this prospectus but not delivered with the prospectus, including exhibits which are specifically incorporated by reference into such documents. You should direct any requests for documents by writing us at Bionano Genomics, Inc., 9540 Towne Centre Drive, Suite 100, San Diego, California 92121 or telephoning us at (858) 888-7600.

DISCLOSURE OF COMMISSION POSITION ON INDEMNIFICATION FOR SECURITIES ACT LIABILITY

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers or persons controlling the registrant pursuant to the foregoing provisions, the registrant has been informed that in the opinion of the SEC such indemnification is against public policy as expressed in the Securities Act and is therefore unenforceable.



Up to \$45,000,000 of Senior Secured Convertible Notes

Warrants to Purchase Up to 21,660,650 Shares of our Common Stock

PROSPECTUS SUPPLEMENT

Lead Placement Agents

TD Cowen

Stifel

Placement Agent

BTIG

The date of this prospectus supplement is October 11, 2023
