



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

DIVISION OF
CORPORATION FINANCE

Mail Stop 3030

July 12, 2018

Via E-mail

R. Erik Holmlin, Ph.D.
President and Chief Executive Officer
Bionano Genomics, Inc.
9640 Towne Centre Drive, Suite 100
San Diego, California 92121

**Re: Bionano Genomics, Inc.
Registration Statement on Form S-1
Filed June 28, 2018
File No. 333-225970**

Dear Dr. Holmlin:

We have reviewed your registration statement and have the following comments. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure.

Please respond to this letter by amending your registration statement and providing the requested information. If you do not believe our comments apply to your facts and circumstances or do not believe an amendment is appropriate, please tell us why in your response.

After reviewing any amendment to your registration statement and the information you provide in response to these comments, we may have additional comments.

Overview, page 1

1. We note your response to prior comment 2. Please revise to disclose the amount of revenue received from each of the customers you mention.

Use of Proceeds, page 46

2. Please expand your response to prior comment 5 to clarify why you will be unable to identify the amount to be used for each purpose disclosed. Otherwise, revise to provide the approximate amount intended to be used for each purpose you disclose. Refer to Item 504 of Regulation S-K.

Results of Operations, page 56

3. It appears from your revisions in response to prior comment 7 that product volume decreased for the period ended March 31, 2018. If so, quantify and explain the reasons for the decrease.

Government Regulation, page 84

4. We note your response to prior comment 3. Please revise your disclosure to discuss the regulatory requirements regarding laboratory developed tests and how these regulatory requirements differ when the tests are developed wholly or partly outside of the laboratory that offers them. Also address in your disclosure whether you have pursued or intend to pursue regulatory approval prior to sale to cytogenetics labs.

We remind you that the company and its management are responsible for the accuracy and adequacy of their disclosures, notwithstanding any review, comments, action or absence of action by the staff.

Refer to Rules 460 and 461 regarding requests for acceleration. Please allow adequate time for us to review any amendment prior to the requested effective date of the registration statement.

You may contact Julie Sherman at (202) 551-3640 or Brian Cascio, Accounting Branch Chief, at (202) 551-3676 if you have questions regarding comments on the financial statements and related matters. Please contact Heather Percival at (202) 551-3498 or Geoff Kruczek, Senior Attorney, at (202) 551-3641 with any other questions.

Sincerely,

/s/ Geoff Kruczek for

Amanda Ravitz
Assistant Director
Office of Electronics and Machinery

cc: James C. Pennington, Esq.
Cooley LLP