

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

SCHEDULE 13D

Under the Securities Exchange Act of 1934
(Amendment No. 2)

BIONANO GENOMICS, INC

(Name of Issuer - as specified in its charter)

Common Stock

(Title of Class of Securities)

09075F107

(CUSIP Number)

Andrew W. Hobson
777 Third Avenue, 25th Floor
New York, NY 10017
212-698-4595

(Name, Address and Telephone Number of Person Authorized to Receive Notices and Communications)

November 1, 2019

(Date of Event which Requires Filing of this Statement)

If the filing person has previously filed a statement on Schedule 13G to report the acquisition which is the subject of this Schedule 13D, and is filing this schedule because of Rule 13d-1(e)(f) or (g), check the following box .

*The remainder of this cover page shall be filled out for a reporting person's initial filing on this form with respect to the subject class of securities, and for any subsequent amendment containing information which would alter disclosures provided in a prior cover page.

The information required on the remainder of this cover page shall not be deemed to be "filed" for the purpose of Section 18 of the Securities Exchange Act of 1934 ("Act") or otherwise subject to the liabilities of that section of the Act but shall be subject to all other provisions of the Act (however, see the Notes).

1	NAME OF REPORTING PERSON Innovatus Life Sciences GP, LP	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP <input type="checkbox"/> (a) <input type="checkbox"/> (b)	
3	SEC USE ONLY	
4	SOURCE OF FUNDS WC	
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDING IS REQUIRED PURSUANT TO ITEMS 2(d) or 2(e) <input type="checkbox"/>	
6	CITIZENSHIP OR PLACE OF ORGANIZATION Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 0
	8	SHARED VOTING POWER 1,218,703.80 ⁽¹⁾
	9	SOLE DISPOSITIVE POWER 0
	10	SHARED DISPOSITIVE POWER 1,218,703.80 ⁽¹⁾
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 1,218,703.80 ⁽¹⁾	
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES <input type="checkbox"/>	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 5.58%	
14	TYPE OF REPORTING PERSON PN	

(1) This amount includes 872,703.31 shares of common stock currently held and 104,374.19 shares of common stock issuable pursuant to Tranche A Warrants and 241,626.30 shares of common issuable pursuant to warrants issued in connection with an equity offering.

1	NAME OF REPORTING PERSON Innovatus Life Sciences Lending Fund I, LP		
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP <input type="checkbox"/> (a) <input type="checkbox"/> (b)		
3	SEC USE ONLY		
4	SOURCE OF FUNDS WC		
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDING IS REQUIRED PURSUANT TO ITEMS 2(d) or 2(e) <input type="checkbox"/>		
6	CITIZENSHIP OR PLACE OF ORGANIZATION Delaware		
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 0	
	8	SHARED VOTING POWER 1,218,703.80 ⁽¹⁾	
	9	SOLE DISPOSITIVE POWER 0	
	10	SHARED DISPOSITIVE POWER 1,218,703.80 ⁽¹⁾	
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 1,218,703.80 ⁽¹⁾		
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES <input type="checkbox"/>		
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 5.58%		
14	TYPE OF REPORTING PERSON PN		

(1) This amount includes 872,703.31 shares of common stock currently held and 104,374.19 shares of common stock issuable pursuant to Tranche A Warrants and 241,626.30 shares of common issuable pursuant to warrants issued in connection with an equity offering.

1	NAME OF REPORTING PERSON Innovatus Capital Partners, LLC		
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP <input type="checkbox"/> (b)		<input type="checkbox"/> (a)
3	SEC USE ONLY		
4	SOURCE OF FUNDS WC		
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDING IS REQUIRED PURSUANT TO ITEMS 2(d) or 2(e) <input type="checkbox"/>		
6	CITIZENSHIP OR PLACE OF ORGANIZATION Delaware		
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 0	
	8	SHARED VOTING POWER 1,891,408 ⁽¹⁾	
	9	SOLE DISPOSITIVE POWER 0	
	10	SHARED DISPOSITIVE POWER 1,891,408 ⁽¹⁾	
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 1,891,408 ⁽¹⁾		
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES <input type="checkbox"/>		
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 8.59%		
14	TYPE OF REPORTING PERSON IA		

(1) This amount includes 1,354,421 shares of common stock currently held and 161,987 shares of common stock issuable pursuant to Tranche A Warrants and 375,000 shares of common issuable pursuant to warrants issued in connection with an equity offering.

1	NAME OF REPORTING PERSON Innovatus Life Sciences Offshore GP, LP		
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP <input type="checkbox"/> (a) <input type="checkbox"/> (b)		
3	SEC USE ONLY		
4	SOURCE OF FUNDS WC		
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDING IS REQUIRED PURSUANT TO ITEMS 2(d) or 2(e) <input type="checkbox"/>		
6	CITIZENSHIP OR PLACE OF ORGANIZATION Delaware		
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 0	
	8	SHARED VOTING POWER 672,704.20 ⁽¹⁾	
	9	SOLE DISPOSITIVE POWER 0	
	10	SHARED DISPOSITIVE POWER 672,704.20 ⁽¹⁾	
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 672,704.20 ⁽¹⁾		
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES []		
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 3.10%		
14	TYPE OF REPORTING PERSON PN		

(1) This amount includes 481,717.69 shares of common stock currently held and 57,612.81 shares of common stock issuable pursuant to Tranche A Warrants and 133,373.70 shares of common issuable pursuant to warrants issued in connection with an equity offering.

1	NAME OF REPORTING PERSON Innovatus Life Sciences Offshore Fund I-A, LP		
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP <input type="checkbox"/> (b)		<input type="checkbox"/> (a)
3	SEC USE ONLY		
4	SOURCE OF FUNDS WC		
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDING IS REQUIRED PURSUANT TO ITEMS 2(d) or 2(e) <input type="checkbox"/>		
6	CITIZENSHIP OR PLACE OF ORGANIZATION Cayman Islands		
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 0	
	8	SHARED VOTING POWER 672,704.20 ⁽¹⁾	
	9	SOLE DISPOSITIVE POWER 0	
	10	SHARED DISPOSITIVE POWER 672,704.20 ⁽¹⁾	
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 672,704.20 ⁽¹⁾		
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES []		
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 3.10%		
14	TYPE OF REPORTING PERSON PN		

(1) This amount includes 481,717.69 shares of common stock currently held and 57,612.81 shares of common stock issuable pursuant to Tranche A Warrants and 133,373.70 shares of common issuable pursuant to warrants issued in connection with an equity offering.

Item 5. Interest in Securities of the Issuer.

Item 5 of the Prior Schedule is hereby amended and restated as follows:

Based on the most recent information available to the Reporting Persons, the Company has (i) 22,021,026 Shares outstanding (including the Shares issuable to Innovatus Fund and the Offshore Fund under the Warrants). As of November 1, 2019, (a) Innovatus GP and Innovatus Fund may be deemed to beneficially own 1,218,703.80 Shares, which represents approximately 5.58% of the outstanding Shares, (b) Innovatus Management may be deemed to beneficially own 1,891,408 Shares, which represents approximately 8.59% of the outstanding Shares, and (c) Innovatus Offshore GP and Innovatus Offshore Fund may be deemed to beneficially own 672,704.20 Shares, which represents approximately 3.10% of the outstanding Shares. The number of Shares which may be deemed to be beneficially owned by the Reporting Persons and the additional disclosed parties are as follows:

<u>Shares Deemed to be Beneficially Owned By:</u>	<u>Nature of Ownership</u>	<u>Percentage of Class</u>
(A) <u>Innovatus GP:</u> 1,218,703.80	Shared Voting and Shared Dispositive Power (1)	5.58%
(B) <u>Innovatus Fund:</u> 1,218,703.80	Shared Voting and Shared Dispositive Power (2)	5.58%
(C) <u>Innovatus Management:</u> 1,891,408	Shared Voting and Shared Dispositive Power (3)	8.59%
(D) <u>Innovatus Offshore GP:</u> 672,704.20	Shared Voting and Shared Dispositive Power (4)	3.10%
(E) <u>Innovatus Offshore Fund:</u> 672,704.20	Shared Voting and Shared Dispositive Power (5)	3.10%
(F) <u>Innovatus Flagship Parent GP, LLC:</u> 0	None	0%
(G) <u>Innovatus Offshore Parent GP, LLCs:</u> 0	None	0%
(G) <u>David Schiff:</u> 0	None	0%

(1) Because Innovatus GP is the general partner of Innovatus Fund and, as such, has the authority to exercise voting or dispositive power with respect to shares of its portfolio companies, including the Shares of the Company, it could be deemed to share the power to vote and dispose or direct the disposition of such Shares.

(2) Because Innovatus Fund has the authority to exercise voting or dispositive power with respect to shares of its portfolio companies, including the Shares of the Company, it could be deemed to have the power to vote and dispose or direct the disposition of such Shares.

(3) Because Innovatus Management is the investment manager of Innovatus Fund and Innovatus Offshore Fund and, as such, holds discretionary investment authority and voting power with respect to shares of its portfolio companies, including the Shares of the Company, it could be deemed to have the shared power to vote and dispose or direct the disposition of such Shares.

(4) Because Innovatus Offshore GP is the general partner of Innovatus Offshore Fund and, as such, has the authority to exercise voting or dispositive power with respect to shares of its portfolio companies, including the Shares of the Company, it could be deemed to share the power to vote and dispose or direct the disposition of such Shares.

- (5) Because Innovatus Offshore Fund has the authority to exercise voting or dispositive power with respect to shares of its portfolio companies, including the Shares of the Company, it could be deemed to share the power to vote and dispose or direct the disposition of such Shares.

TRANSACTIONS

All of the Shares reported on March 22, 2019 were acquired (i) by Innovatus Fund and Innovatus Life Sciences Offshore Fund I, LP with respect to the common stock, in a direct purchase from the Company pursuant to the Purchase Agreement and (ii) by Innovatus Fund, with respect to the Tranche A Warrants, in connection with the Loan Agreement. Total consideration of \$1,500,000 was paid for the shares of the Company's common stock. The Tranche A Warrants were issued in consideration for funding a tranche of the loan made under the Loan Agreement. The Exercise Price of the Tranche A Warrants is \$0.48 per share. On October 21, 2019, additional Shares and Warrants were acquired pursuant to public transactions. The Shares were acquired at a price of \$0.86 per share and the Exercise Price of the Warrants issued is \$0.86 per share. On November 1, 2019, pursuant to a waiver arrangement, additional Shares were acquired as consideration for a short-term waiver of certain covenants under the Loan Agreement.

Shares were transferred from Innovatus Life Sciences Offshore Fund I, LP to Innovatus Life Sciences Offshore Fund I-A, LP for structuring reasons.

In accordance with Rule 13d-4 of the Securities Exchange Act of 1934, the Additional Disclosed Parties expressly disclaim the beneficial ownership of the securities covered by this statement and the filing of this report shall not be construed as an admission by such persons that they are the beneficial owners of such securities.

SIGNATURES

The undersigned certify, after reasonable inquiry and to the best knowledge and belief of the undersigned, that the information set forth in this Statement is true, complete and correct. The undersigned agree to the filing of this Amendment No. 2 to the Statement on Schedule 13D.

INNOVATUS LIFE SCIENCES GP, LP

Date: November 12, 2019

By: /s/ Andrew W. Hobson

Name: Andrew W. Hobson _
Title: Authorized Signatory

INNOVATUS LIFE SCIENCES LENDING
FUND I, LP.

By: INNOVATUS LIFE SCIENCES GP, LP, its
general partner

Date: November 12, 2019

By: /s/ Andrew W. Hobson

Name: Andrew W. Hobson _
Title: Authorized Signatory

INNOVATUS CAPITAL PARTNERS, LLC.

Date: November 12, 2019

By: /s/ Andrew W. Hobson

Name: Andrew W. Hobson _
Title: Authorized Signatory

INNOVATUS LIFE SCIENCES OFFSHORE
GP, LP

Date: November 12, 2019

By: /s/ Andrew W. Hobson

Name: Andrew W. Hobson _
Title: Authorized Signatory

INNOVATUS LIFE SCIENCES OFFSHORE
FUND I-A, LP

By: INNOVATUS LIFE SCIENCES
OFFSHORE GP, LP, its general partner

Date: November 12, 2019

By: /s/ Andrew W. Hobson

Name: Andrew W. Hobson _
Title: Authorized Signatory

APPENDIX 1

OFFICERS AND CONTROL PERSONS OF AND CERTAIN ADDITIONAL INFORMATION REGARDING THE DISCLOSED PARTIES

A. Innovatus Flagship Parent GP, LLC

Innovatus Flagship Parent GP, LLC is organized as a Delaware limited liability company. Its address is:

777 Third Avenue, 25th Floor
New York, NY 10017

Innovatus Flagship Parent GP, LLC is controlled by its principal shareholder David Schiff.

B. Innovatus Flagship Offshore Parent GP, LLC

Innovatus Flagship Offshore Parent GP, LLC is organized as a Cayman Islands limited liability company. Its address is:

777 Third Avenue, 25th Floor
New York, NY 10017

Innovatus Flagship Offshore Parent GP, LLC is controlled by its principal shareholder David Schiff.

C. David Schiff

David Schiff is the principal shareholder of each of Innovatus Flagship Parent GP, LLC and Innovatus Flagship Offshore Parent GP, LLC. Mr. Schiff's principal occupation is as a portfolio manager of Innovatus investment products. His business address is:

777 Third Avenue, 25th Floor
New York, NY 10017