

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

SCHEDULE 13D

Under the Securities Exchange Act of 1934
(Amendment No. 1)

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)

October 21, 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 (a) (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)	
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 849,552.29 ⁽¹⁾
	9	SOLE DISPOSITIVE POWER 0
	10	SHARED DISPOSITIVE POWER 849,552.29 ⁽¹⁾
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 849,552.29 ⁽¹⁾	
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES []	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 3.96%	
14	TYPE OF REPORTING PERSON PN	

(1) This amount includes 503,551.80 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 (a) (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)	
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 849,552.29 ⁽¹⁾
	9	SOLE DISPOSITIVE POWER 0
	10	SHARED DISPOSITIVE POWER 849,552.29 ⁽¹⁾
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 849,552.29 ⁽¹⁾	
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES []	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 3.96%	
14	TYPE OF REPORTING PERSON PN	

(1) This amount includes 503,551.80 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 (a) (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)	
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 1,318,491 ⁽¹⁾
	9	SOLE DISPOSITIVE POWER 0
	10	SHARED DISPOSITIVE POWER 1,318,491 ⁽¹⁾
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 1,318,491 ⁽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) 6.15%	
14	TYPE OF REPORTING PERSON IA	

(1) This amount includes 781,504 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 (a) (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)	
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 468,938.71 ⁽¹⁾
	9	SOLE DISPOSITIVE POWER 0
	10	SHARED DISPOSITIVE POWER 468,938.71 ⁽¹⁾
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 468,938.71 ⁽¹⁾	
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES []	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 2.19%	
14	TYPE OF REPORTING PERSON PN	

(1) This amount includes 277,952.20 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 (a) (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)	
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 468,938.71 ⁽¹⁾
	9	SOLE DISPOSITIVE POWER 0
	10	SHARED DISPOSITIVE POWER 468,938.71 ⁽¹⁾
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 468,938.71 ⁽¹⁾	
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES []	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 2.19%	
14	TYPE OF REPORTING PERSON PN	

(1) This amount includes 277,952.20 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 2. Identity and Background.

Item 2 of the Schedule 13D filed by the Reporting Persons (as defined therein) on April 2, 2019 (the "Prior Schedule") is hereby amended and restated as follows:

This statement is being filed by (a) Innovatus Life Sciences GP, LP, a Delaware limited liability company ("Innovatus GP"), which is the general partner of Innovatus Life Sciences Lending Fund I, LP, a Delaware limited partnership ("Innovatus Fund"), (b) Innovatus Fund, which is a private investment fund that has acquired Shares of the Company, Tranche A Warrants, and shares of common issuable pursuant to warrants issued in connection with an equity offering (together with the Tranche A Warrants, the "Warrants") through public and private transactions, (c) Innovatus Capital Partners, LLC, a Delaware limited liability company ("Innovatus Management") that serves as investment manager to each of Innovatus Fund and Innovatus Offshore Fund (as defined below); (d) Innovatus Life Sciences Offshore GP, LP, a Cayman Islands exempted limited partnership ("Innovatus Offshore GP") which is the general partner of Innovatus Life Sciences Offshore Fund I-A, LP, a Cayman Islands exempted limited partnership ("Innovatus Offshore Fund" and together with Innovatus GP, Innovatus Fund, Innovatus Management and Innovatus Offshore GP, the "Reporting Persons"); and (e) Innovatus Offshore Fund, which is a private investment fund that has acquired Shares of the Company and Warrants of the Company through private transactions.

Each of (i) Innovatus Flagship Parent GP, LLC ("Innovatus Holdings"), which is the parent company of Innovatus GP, (ii) Innovatus Offshore Parent GP, LLC ("Innovatus Offshore Holdings" and, together with Innovatus Holdings, the "Parent Companies") and (iii) David Schiff, a citizen of the United States, who is a control person of the Parent Companies (together, the "Additional Disclosed Persons") could be deemed to control one or more of the Reporting Persons and information regarding such Additional Disclosed Persons is accordingly furnished in Items 2-6 herein. Further information regarding the identities and background of the Reporting Person and the Additional Disclosed Persons (together, the "Disclosed Parties") is set forth in Appendix 1 hereto.

During the last five years, none of the Disclosed Parties, nor, to the best knowledge of the Disclosed Parties, any of their respective executive officers, their respective directors, or any other persons controlling them has: (1) been convicted in a criminal proceeding (excluding traffic violations or similar misdemeanors) or (2) been party to a civil proceeding of a judicial or administrative body of competent jurisdiction and, as a result of such proceeding, was or is subject to a judgment, decree or final order enjoining future violations of, or prohibiting or mandating activities subject to, federal or state securities laws or finding any violation with respect to such laws.

Item 3. Source and Amount of Funds or Other Consideration.

Item 3 of the Prior Schedule is hereby amended and restated as follows:

The Shares reported on March 22, 2019 as being beneficially owned by the Reporting Persons were acquired (i) by Innovatus Fund and Innovatus Offshore Fund, with respect to the common stock, pursuant to a direct purchase from the Company pursuant to a Common Stock Purchase Agreement dated March 14, 2019, the form of which is filed with the Securities and Exchange Commission (the "SEC") as Exhibit 10.3 to the Company's filing on Form 8-K made on March 14, 2019 (the "Purchase Agreement") and (ii) by Innovatus Fund, with respect to the Tranche A Warrants, in connection with a Loan and Security Agreement with the Company dated as of March 14, 2019, the form of which is filed with the SEC as Exhibit 10.2 to the Company's filing on Form 8-K made on March 14, 2019 (the "Loan Agreement") and which is incorporated herein by reference. The funds used in such purchases were from available investment capital. On October 21, 2019, additional Shares and Warrants were acquired pursuant to a public offering. The funds used in such purchases were from available investment capital.

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) 21,448,109 Shares outstanding (including the Shares issuable to Innovatus Fund and the Offshore Fund under the Warrants). As of October 21, 2019, (a) Innovatus GP and Innovatus Fund may be deemed to beneficially own 849,552.29 Shares, which represents approximately 3.96% of the outstanding Shares, (b) Innovatus Management may be deemed to beneficially own 1,318,491 Shares, which represents approximately 6.15% of the outstanding Shares, and (c) Innovatus Offshore GP and Innovatus Offshore Fund may be deemed to beneficially own 468,938.71 Shares, which represents approximately 2.19% 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> 849,552.29	Shared Voting and Shared Dispositive Power (1)	3.96%
(B) <u>Innovatus Fund:</u> 849,552.29	Shared Voting and Shared Dispositive Power (2)	3.96%
(C) <u>Innovatus Management:</u> 1,318,491	Shared Voting and Shared Dispositive Power (3)	6.15%
(D) <u>Innovatus Offshore GP:</u> 468,938.71	Shared Voting and Shared Dispositive Power (4)	2.19%
(E) <u>Innovatus Offshore Fund:</u> 468,938.71	Shared Voting and Shared Dispositive Power (5)	2.19%
(F) <u>Innovatus Holdings:</u> 0	None	0%
(G) <u>Innovatus Offshore Holdings:</u> 0	None	0%
(G) <u>David Schiff:</u> 0	None	0%

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- (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 and 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 and the Exercise Price of the warrants issued in connection with an equity offering is \$0.86 per share. On October 21, 2019, additional Shares were acquired pursuant to public and private transactions at a price of \$0.86 per share.

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. 1 to the Statement on Schedule 13D.

INNOVATUS LIFE SCIENCES GP, LP

Date: November 1, 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 1, 2019

By: /s/ Andrew W. Hobson
Name: Andrew W. Hobson
Title: Authorized Signatory

INNOVATUS CAPITAL PARTNERS, LLC

Date: November 1, 2019

By: /s/ Andrew W. Hobson
Name: Andrew W. Hobson
Title: Authorized Signatory

INNOVATUS LIFE SCIENCES OFFSHORE
GP, LP

Date: November 1, 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 1, 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