
**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**
Washington, D.C. 20549

Form S-3
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

INNOVATE BIOPHARMACEUTICALS, INC.
(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

27-3948465
(I.R.S. Employer
Identification No.)

8480 Honeycutt Road, Suite 120
Raleigh, NC 27615
(919) 275-1933
(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

Jay P. Madan
President
Innovate Biopharmaceuticals, Inc.
8480 Honeycutt Road, Suite 120
Raleigh, NC 27615
(919) 275-1933
(Name, address, including zip code, and telephone number, including area code, of agent for service)

Please send copies of all communications to:
Christopher Capel
Smith, Anderson, Blount, Dorsett, Mitchell & Jernigan, L.L.P.
Wells Fargo Capitol Center
150 Fayetteville Street, Suite 2300
Raleigh, NC 27601
(919) 821-1220

Approximate date of commencement of proposed sale to the public:
From time to time after the effective date of the Registration Statement.

If the only securities being registered on this Form are being offered pursuant to dividend or interest reinvestment plans, please check the following box.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box.

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box.

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer

Accelerated filer

Non-accelerated filer

Smaller reporting company

Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of the Securities Act.

CALCULATION OF REGISTRATION FEE

Title of each class of securities to be registered	Amount to be Registered (1)	Proposed maximum offering price per unit (2)	Proposed maximum aggregate offering price (3)	Amount of registration fee (3)
Common Stock, \$0.0001 par value per share	15,120,898	\$2.72	\$41,128,842.56	\$4,984.82

- (1) Consists of shares of the registrant's common stock issuable upon exercise of common stock purchase warrants currently held by the selling stockholders identified herein. Pursuant to Rule 416 under the Securities Act of 1933, as amended, there are also being registered hereunder an indeterminate number of shares of common stock as may be issuable with respect to the shares being registered hereunder as a result of stock splits, stock dividends or similar transactions.
- (2) Estimated at \$2.72 per underlying share, which is the weighted average exercise price of the warrants, for purposes of calculating the registration fee pursuant to Rule 457(g) under the Securities Act of 1933, as amended.
- (3) The registration fee has been calculated pursuant to Rule 457(a) under the Securities Act of 1933, as amended, based on the proposed maximum aggregate offering price.

The registrant hereby amends this registration statement on such date or dates as may be necessary to delay its effective date until the registrant shall file a further amendment which specifically states that this registration statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933 or until the registration statement shall become effective on such date as the Commission acting pursuant to said Section 8(a), may determine.

THE INFORMATION IN THIS PROSPECTUS IS NOT COMPLETE AND MAY BE CHANGED. THE SELLING STOCKHOLDERS NAMED IN THIS PROSPECTUS MAY NOT SELL 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 AN OFFER TO BUY THESE SECURITIES IN ANY JURISDICTION WHERE THE OFFER OR SALE IS NOT PERMITTED.

SUBJECT TO COMPLETION, DATED MAY 17, 2019

PROSPECTUS



Innovate Biopharmaceuticals, Inc.

15,120,898 Shares of Common Stock

This prospectus relates to the sale from time to time of up to 15,120,898 shares of our common stock, par value \$0.0001 per share, by the selling stockholders identified in this prospectus or in supplements to this prospectus. All of the shares being offered, when sold, will be sold by the selling stockholders. The shares of common stock registered for resale pursuant to this prospectus include:

- 4,181,068 shares of our common stock that may be issued upon exercise of warrants (the “Short-Term Warrants”) issued to certain of the selling stockholders in connection with a private placement transaction consummated on March 18, 2019 (the “March 2019 Placement”);
- 2,508,634 shares of our common stock that may be issued upon exercise of warrants (the “Long-Term Warrants”) issued to certain of the selling stockholders in connection with the March 2019 Placement;
- 4,318,272 shares of our common stock that may be issued upon exercise of warrants (the “May Warrants”) issued to certain of the selling stockholders in connection with a private placement consummated on May 1, 2019 (the “May 2019 Placement”);
- 215,914 shares of our common stock that may be issued upon exercise of warrants (the “Placement Agent Warrants”) issued to designees of the placement agent in connection with the May 2019 Placement; and
- 3,897,010 shares of our common stock that may be issued upon exercise of warrants (the “Additional Warrants” and, together with the Short-Term Warrants, the Long-Term Warrants, the May 2019 Warrants and the Placement Agent Warrants, the “Warrants”) issued to certain of the selling stockholders in connection with a private placement transaction consummated on May 17, 2019 (the “Additional Placement” and collectively with the March 2019 Placement and May 2019 Placement, the “Private Placements”) in connection with their previous amendment of the purchase agreement for the March 2019 Placement.

The selling stockholders may sell the securities on any national securities exchange or quotation service on which the securities may be listed or quoted at the time of sale, in the over-the-counter market, in one or more transactions otherwise than on these exchanges or systems, such as privately negotiated transactions, or using a combination of these methods, and at fixed prices, at prevailing market prices at the time of the sale, at varying prices determined at the time of sale, or at negotiated prices. See the disclosure under the heading “Plan of Distribution” elsewhere in this

prospectus for more information about how the selling stockholders may sell or otherwise dispose of their shares of common stock hereunder.

The selling stockholders may sell any, all or none of the securities offered by this prospectus and we do not know when or in what amount the selling stockholders may sell their shares of common stock hereunder following the effective date of the registration statement of which this prospectus forms a part.

We are not offering any shares of our common stock for sale under this prospectus. We will not receive any of the proceeds from the sale of common stock by the selling stockholders. However, we will generate proceeds in the event of a cash exercise of the warrants by the selling stockholders. All expenses of registration incurred in connection with this offering are being borne by us. All selling and other expenses incurred by the selling stockholders will be borne by the selling stockholders.

Our common stock is traded on the Nasdaq Capital Market and is quoted under the symbol INNT. On May 16, 2019, the last reported sale price of our common stock was \$1.65 per share.

We may amend or supplement this prospectus from time to time by filing amendments or supplements as required. You should read the entire prospectus and any amendments or supplements carefully before you make your investment decision.

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 4 and those contained in any applicable prospectus supplement and in any related free writing prospectuses that we have authorized for use in connection with a specific offering and in our Securities and Exchange Commission filings 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 is truthful or complete. Any representation to the contrary is a criminal offense.

The date of this prospectus is , 2019.

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ABOUT THIS PROSPECTUS

This prospectus is part of a shelf registration statement that we filed with the U.S. Securities and Exchange Commission, or the SEC, using a “shelf” registration process. Under this shelf registration process, the selling stockholders may from time to time sell the shares of common stock described in this prospectus in one or more offerings.

You should rely only on the information contained or incorporated by reference in this prospectus and in any prospectus supplement. We have not authorized anyone to give any information or to make any representation other than those contained or incorporated by reference in this prospectus. The selling stockholders are offering to sell, and seeking offers to buy, shares of our common stock only in jurisdictions where it is lawful to do so. This prospectus does not constitute an offer to sell or the solicitation of an offer to buy any shares other than the registered shares to which they relate, nor does this prospectus constitute an offer to sell or the solicitation of an offer to buy shares 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 is accurate on any date subsequent to the date set forth on the front of this prospectus 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 is delivered or shares are sold on a later date. Our business, financial condition, results of operations and prospects may have changed since those dates. This prospectus incorporates by reference market data and industry statistics and forecasts that are based on independent industry publications and other publicly available information. Although we believe these sources are reliable, we do not guarantee the accuracy or completeness of this information and we have not independently verified this information. Although we are not aware of any misstatements regarding the market and industry data presented in this prospectus and the documents incorporated herein by reference, these estimates involve risks and uncertainties and are subject to change based on various factors, including those discussed under the heading “Risk Factors” contained in this prospectus, any applicable prospectus supplement and under similar headings in the other documents that are incorporated by reference into this prospectus. Accordingly, you should not place undue reliance on this information.

Before purchasing any shares of common stock, you should carefully read both this prospectus and any prospectus supplement, together with the additional information described under the heading “Where You Can Find More Information.”

References to “Innovate,” “the Company,” “we,” “our” and “us” in this prospectus, refer to Innovate Biopharmaceuticals, Inc., a Delaware corporation, unless otherwise specified. References to our “common stock” refer to the common stock, \$0.0001 par value per share, of Innovate Biopharmaceuticals, Inc.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

The information in this prospectus and incorporated herein by reference or filed herewith includes 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 forward-looking statements are based on current expectations and beliefs and involve numerous risks and uncertainties that could cause actual results to differ materially from expectations. These forward-looking statements should not be relied upon as predictions of future events as we cannot assure you that the events or circumstances reflected in these statements will be achieved or will occur. When used in this prospectus and the information incorporated herein by reference, the words “believe,” “may,” “could,” “will,” “estimate,” “continue,” “anticipate,” “intend,” “expect,” “indicate,” “seek,” “should,” “would” and similar expressions are intended to identify forward-looking statements, though not all forward-looking statements contain these identifying words. All statements, other than statements of historical fact, are statements that could be deemed forward-looking statements.

You should not rely upon forward-looking statements as guarantees of future performance or as predictions of future events. We have based these forward-looking statements largely on our current estimates of our financial results and our current expectations and projections about future events and financial trends that we believe may affect our financial condition, results of operations, business strategy, short-term and long-term business operations and

objectives, and financial needs. These forward-looking statements are subject to a number of risks, uncertainties and assumptions that may cause our actual results to differ materially from those contained in any forward-looking statements, including those described in “Risk Factors” in this prospectus and in our most recent Annual Report on Form 10-K and in our subsequent Quarterly Reports on Form 10-Q and in our other filings with the SEC that are incorporated by reference in this prospectus. Moreover, we operate in a highly competitive and rapidly changing environment and new risks emerge from time to time. If any of these risks or uncertainties materialize or any of these assumptions prove incorrect, our results could differ materially from the forward-looking statements in this prospectus.

These forward-looking statements include, among other things, statements about:

- the cost, timing and results of the development of our clinical programs, including of INN-202 (for celiac disease), INN-217 (for nonalcoholic steatohepatitis, or NASH), INN-289 (for Crohn’s disease), INN-108 (for ulcerative colitis), and INN-329 (for magnetic resonance cholangiopancreatography, or MRCP);
- the commercial potential of INN-202 and our other clinical programs;
- the timing of, and our ability to obtain and maintain regulatory approvals for INN-202 and our other clinical products;
- the development of any future product candidates, including alcoholic steatohepatitis, or ASH;
- our plans to obtain funding for our operations;
- the development, regulatory approval, efficacy and commercialization of competing products;
- our estimates and expectations, including estimates of the potential market for our product candidates and projected cash needs and timing of the use of cash;
- our liquidity position; and
- our intellectual property plans.

All forward-looking statements in this prospectus are current only as of the date of this prospectus. We do not undertake any obligation to publicly update any forward-looking statement to reflect events or circumstances after the date on which any statement is made or to reflect the occurrence of unanticipated events except as required by law.

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, 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.

PROSPECTUS SUMMARY

Overview

We are a clinical-stage biopharmaceutical company developing novel medicines for autoimmune and inflammatory diseases with unmet needs. Our pipeline includes drug candidates for celiac disease, NASH, ASH, Crohn's disease and ulcerative colitis. We are planning to commence our Phase 3 registration trials for our lead program, INN-202 (larazotide acetate or larazotide) for the treatment of celiac disease in the second quarter of 2019 and believe this program has the potential to be the first-to-market therapeutic for celiac disease, an unmet medical need, which affects an estimated 1% of the North American population or approximately 3 million individuals.

Corporate Information

Our principal executive office is currently located at 8480 Honeycutt Road, Suite 120, Raleigh, North Carolina 27615. Our telephone number is (919) 275-1933. Our website address is www.innovatebiopharma.com. Information contained on or that can be accessed through our website is not incorporated by reference into this prospectus and should not be considered to be part of this prospectus.

Implications of Being an Emerging Growth Company

We are an "emerging growth company," as defined in the Jumpstart Our Business Startups, or JOBS, Act. We will remain an "emerging growth company" until the earliest to occur of (i) the last day of the fiscal year in which we have approximately \$1.07 billion or more in annual gross revenue, (ii) the date we qualify as a "large accelerated filer," with at least \$700 million of equity securities held by non-affiliates as of the prior June 30th, (iii) the date on which we have issued, in any three-year period, more than \$1.0 billion in non-convertible debt securities, or (iv) December 31, 2021.

While we are an "emerging growth company," we will take advantage of certain exemptions from various reporting requirements that are applicable to public companies that are not "emerging growth companies" including, but not limited to, not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act, reduced disclosure obligations regarding executive compensation and financial statements in our periodic reports and proxy statements, and exemptions from the requirements of holding a nonbinding advisory vote to approve executive compensation and stockholder approval of any golden parachute payments not previously approved.

For further information regarding us and our financial information, you should refer to our recent filings with the SEC. See "Where You Can Find Additional Information."

THE OFFERING

Common stock outstanding as of May 16, 2019	35,383,874 shares.
Common stock offered by the selling stockholders	15,120,898
Common stock to be outstanding after this offering	50,504,772 shares.
Terms of the offering	The selling stockholders acquired the warrants pursuant to which the underlying warrant shares covered by the registration statement of which this prospectus forms a part in private placements as described in “Private Placements,” and they will determine when and how they sell the common stock offered in this prospectus, as described in “Plan of Distribution.”
Risk Factors	See “Risk Factors” in this prospectus and otherwise incorporated by reference herein for a discussion of factors you should consider carefully before deciding to invest in shares of our common stock.
Nasdaq Capital Market symbol	“INNT”
Use of Proceeds	We will not receive any of the proceeds from the sale of shares of our common stock in this offering. The selling stockholders will receive all of the proceeds from this offering. We may, however, receive proceeds from the warrants issued to any of the selling stockholders in the event such warrants are exercised for cash.

RISK FACTORS

Before you invest in our shares of common stock, you should be aware that our business faces numerous financial and market risks, as well as general economic and business risks. Our shares of common stock are speculative, and you should not make an investment in Innovate unless you can afford to bear the loss of your entire investment. Prior to making a decision about investing in our common stock, you should carefully consider the risks, uncertainties and assumptions discussed in our most recent Annual Report on Form 10-K and in our subsequent Quarterly Reports on Form 10-Q and other filings with the SEC that are incorporated by reference in this prospectus, together with the information in this prospectus and any other information incorporated by reference herein or filed herewith. The risks and uncertainties identified are not the only risks and uncertainties we face. If any of the material risks or uncertainties that we face were to occur, you could lose part or all of your investment.

DESCRIPTION OF PRIVATE PLACEMENTS

March 2019 Placement

On March 17, 2019, we entered into a Securities Purchase Agreement, or the March Securities Purchase Agreement, with SDS Capital Partners II, LLC and certain other accredited investors, pursuant to which we sold, on March 18, 2019, 4,181,068 shares of our common stock, and issued the Short-Term Warrants to purchase up to 4,181,068 shares of our common stock and the Long-Term Warrants to purchase up to 2,508,634 shares of our common stock. Pursuant to the March Securities Purchase Agreement, we issued the shares of our common stock, the Short-Term

Warrants and the Long-Term Warrants at a purchase price per share of \$2.33 for aggregate gross proceeds of approximately \$9.7 million.

The Long-Term Warrants are exercisable for five years beginning on the six-month anniversary of the date of issuance. The Long-Term Warrants have an initial exercise price equal to \$2.56 per share, subject to certain adjustments. The Short-Term Warrants are exercisable immediately upon the date of issuance for a period of one year. The Short-Term Warrants have an initial exercise price of \$4.00 per share, subject to certain adjustments. If at any time commencing on the date of issuance, the weighted-average price of our common stock exceeds \$5.25 for ten consecutive trading days, we may call the outstanding Short-Term Warrants and require that they be exercised in cash, except to the extent that such exercise would surpass the beneficial ownership limitation described below for such warrant's holder. If not previously exercised in full, at the expiration of their applicable terms, the Short-Term Warrants and the Long-Term Warrants shall be automatically exercised via cashless exercise.

The Short-Term Warrants and the Long-Term 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 by payment in full in immediately available funds for the number of shares of our common stock purchased upon such exercise. If a registration statement registering the issuance of the shares of common stock underlying the warrants under the Securities Act is not then effective or available, the holder may exercise the Short-Term Warrants and/or the Long-Term Warrants, as applicable, through a cashless exercise, in whole or in part, 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 common stock will be issued in connection with the exercise of a Short-Term Warrant or Long-Term Warrant. In lieu of fractional shares, we will either pay the holder an amount in cash equal to the fractional amount multiplied by the exercise price or round up to the next whole share.

A holder will not have the right to exercise any portion of the Short-Term Warrants or the Long-Term Warrants if the holder (together with its affiliates) would beneficially own in excess of 4.99% (or, at the election of the holder, 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 Short-Term Warrants and the Long-Term Warrants. However, any holder may increase or decrease such percentage to any other percentage not in excess of 9.99% upon notice to us, provided that any increase in such percentage shall not be effective until 61 days after such notice.

In the event of a fundamental transaction, as described in the Short-Term Warrants and the Long-Term Warrants 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, or the consolidation or merger of the Company with or into another entity, the holders of the Short-Term Warrants and the Long-Term Warrants will be entitled to receive upon exercise of the Short-Term Warrants and the Long-Term Warrants, the kind and amount of securities, cash or other property that the holders would have received had they exercised the Short-Term Warrants and the Long-Term Warrants immediately prior to such fundamental transaction. In addition, upon a fundamental transaction, the holder shall have the right to receive a payment in cash, or under certain circumstances in other consideration, from us at the Black Scholes value as described in the Short-Term Warrants and the Long-Term Warrants.

Pursuant to the March Securities Purchase Agreement, as amended, we agreed to file the registration statement of which this prospectus is a part to cover the resale of the shares underlying the Short-Term Warrants, the Long-Term Warrants and the Additional Warrants, and to keep such registration statement effective until the earliest of (i) such time as no such selling stockholder holds or has the right to acquire the common stock registered for resale hereunder, (ii) the date on which the shares of common stock registered for resale hereunder with respect to the Short-Term Warrants, the Long-Term Warrants and the Additional Warrants may be sold or transferred by non-affiliates without any volume or manner-of-sale restrictions and without current public information limitations pursuant to Rule 144 under the Securities Act and (iii) five years following the effective date of the registration statement of which this prospectus forms a part.

Additional Placement

On April 25, 2019, we entered into an amendment to the March Securities Purchase Agreement, pursuant to which, among other things, we agreed to give each purchaser in the March 2019 Placement the right to purchase, for \$0.125 per underlying share, Additional Warrants. On May 16, 2019, we entered into a securities purchase agreement with those investors who subscribed for such Additional Warrants, pursuant to which we issued the 3,897,010 Additional Warrants, with an initial exercise price of \$2.13 per share, subject to certain adjustments, in the Additional Placement. Pursuant to the March Securities Purchase Agreement, as amended, we agreed to file the registration statement of which this prospectus is a part to cover the resale of the shares underlying the Short-Term Warrants, the Long-Term Warrants and the Additional Warrants.

The Additional Warrants are exercisable for five years beginning on the six-month anniversary of the date of issuance. If not previously exercised in full, at the expiration of their applicable terms, the Additional Warrants will be automatically exercised via cashless exercise, in which case the holder would receive upon such exercise the net number of shares, if any, of common stock determined according to the formula set forth in the Additional Warrants.

The Additional 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 by payment in full in immediately available funds for the number of shares of common stock purchased upon such exercise. If a registration statement registering the issuance of the shares of common stock underlying the warrants under the Securities Act is not then effective or available, the holder may exercise the Additional Warrant through a cashless exercise, in whole or in part, 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 Additional Warrant. No fractional shares of common stock will be issued in connection with the exercise of an Additional Warrant. In lieu of fractional shares, we will either pay the holder an amount in cash equal to the fractional amount multiplied by the exercise price or round up to the next whole share.

A holder will not have the right to exercise any portion of the Additional Warrant if the holder (together with its affiliates) would beneficially own in excess of 4.99% (or, at the election of the holder, 9.99%) of the number of shares of common stock outstanding immediately after giving effect to the exercise, as such percentage ownership is determined in accordance with the terms of the Additional Warrants. However, any holder may increase or decrease such percentage to any other percentage not in excess of 9.99% upon notice to us, provided that any increase in such percentage shall not be effective until 61 days after such notice.

In the event of a fundamental transaction, as described in the Additional Warrants 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, or the consolidation or merger of the Company with or into another entity, the holders of the Additional Warrants will be entitled to receive upon exercise of the Additional Warrants the kind and amount of securities, cash or other property that the holders would have received had they exercised the Additional Warrants immediately prior to such fundamental transaction. In addition, upon a fundamental transaction, the holder shall have the right to receive a payment in cash, or under certain circumstances in other consideration, from us at the Black Scholes value as described in the Additional Warrants.

May 2019 Placement

On April 29, 2019, we entered into a Securities Purchase Agreement, or the April Securities Purchase Agreement, and together with the March Securities Purchase Agreement, as amended, the Securities Purchase Agreements, with certain institutional and accredited investors pursuant to which we sold 4,318,272 shares of our common stock, at a purchase price of \$2.025 per share, and issued to each purchaser the May Warrants to purchase up to 4,318,272 shares of our common stock. Subject to certain ownership limitations described in the May Warrants, the May Warrants are exercisable beginning on the date of their issuance until the five and a half year anniversary of their date of issuance at an initial exercise price equal to \$2.13. The exercise price of the May Warrants will be subject to adjustment for stock splits, reverse splits, and similar capital transactions as described in the May Warrants. The May Warrants provide that holders will have the right to participate in any rights offering or distribution of assets, and will have the right to receive certain consideration in fundamental transactions, together with the holders of our common stock on an as-exercised basis. In addition, upon a fundamental transaction, the holder shall have the right to receive payment in cash, or under certain circumstances in other consideration, from us at the Black-Scholes value as described

in the May Warrants. The May Warrants may be exercisable on a “cashless” basis while there is no effective registration statement or current prospectus available for the shares of our common stock issuable upon exercise of the May Warrants. A holder will not have the right to exercise any portion of the May Warrants if the holder (together with its affiliates) would beneficially own in excess of 4.99% (or, at the election of the holder, 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 May Warrants. However, any holder may increase or decrease such percentage to any other percentage not in excess of 9.99% upon notice to us, provided that any increase in such percentage shall not be effective until 61 days after such notice. If not previously exercised in full, at the expiration of their terms, the May Warrants will be automatically exercised via cashless exercise.

Pursuant to the April Securities Purchase Agreement, we agreed to file the registration statement of which this prospectus is a part to cover the resale of the shares underlying the May Warrants.

The April Securities Purchase Agreement contains, among other things, a prohibition on sales of common stock or securities convertible or exchangeable into common stock by us for a period of 30 days after the date of the April Securities Purchase Agreement and a prohibition on us entering into variable rate transactions for a period of 12 months after the date of the April Securities Purchase Agreement, subject to certain exceptions, including that sales under our existing at-the-market facility are permissible after 30 days.

In connection with the May 2019 Placement, we also issued the Placement Agent Warrants to purchase up to 215,914 shares of our common stock. The Placement Agent Warrants have substantially the same terms as the May Warrants, except that the Placement Agent Warrants have an exercise price of \$2.53125 and will have a term of 5 years from the effective date of the offering. We agreed to include the shares underlying the Placement Agent Warrants on the registration statement of which this prospectus is a part to cover the resale of the shares underlying the Placement Agent Warrants.

DESCRIPTION OF CAPITAL STOCK

This section summarizes our authorized and outstanding securities and certain of the provisions of our amended and restated certificate of incorporation, or our Certificate of Incorporation, and our amended and restated bylaws, or our Bylaws.

General

The Company’s authorized capital stock consists of 360,000,000 shares of capital stock, par value \$0.0001 per share, of which 350,000,000 shares are common stock, par value \$0.0001 per share and 10,000,000 are preferred stock, par value \$0.0001 per share. As of May 16, 2019, the Company had 35,383,874 shares of common stock outstanding held by approximately 293 shareholders of record, and no shares of preferred stock outstanding.

Common Stock

The holders of our common stock (i) have equal ratable rights to dividends from funds legally available, therefore, when, as and if declared by our Board; (ii) are entitled to share in all of our assets available for distribution to holders of common stock upon liquidation, dissolution or winding up of our affairs; (iii) do not have preemptive, subscription or conversion rights and no redemption or sinking fund provisions or rights; and (iv) are entitled to one non-cumulative vote per share on all matters on which stockholders may vote. Reference is made to our Certificate of Incorporation, Bylaws, and the applicable statutes of the State of Delaware for a more complete description of the rights and liabilities of holders of our common stock.

Preferred Stock

The Company has authorized 10,000,000 shares of preferred stock. There is no preferred stock outstanding.

Non-cumulative Voting

Holders of shares of our common stock do not have cumulative voting rights, meaning that the holders of 50.1% of our outstanding shares of common stock, voting for the election of directors, can elect all of the directors to be elected, and, in such event, the holders of the remaining shares will not be able to elect any of our directors.

Dividends

We have not paid any cash dividends to stockholders. The declaration of any future cash dividend will be at the discretion of our board of directors and will depend upon our earnings, if any, our capital requirements and financial position, general economic conditions, and other relevant conditions. It is our present intention not to pay any cash dividends in the foreseeable future, but rather to reinvest earnings, if any, in our business operations.

Warrants

As of the date of this registration statement, the Company has warrants outstanding, that entitle their holders to purchase (i) 1,410,358 shares of common stock, with a term of five years and an exercise price of \$3.18 per share, (ii) 349,555 shares of common stock, with a term of five years and an exercise price of \$2.54 per share, (iii) 4,181,068 shares of common stock, with a term of one year and an exercise price of \$4.00 per share, (iv) 2,508,634 shares of common stock, with a term of five years and an exercise price of \$2.56 per share, (v) 4,318,272 shares of common stock, with a term of five and a half years and an exercise price of \$2.13 per share, (vi) 215,914 shares of common stock, with a term of five years and an exercise price of \$2.53125 per share and (vii) 3,897,010 shares of common stock, with a term of five years and an exercise price of \$2.13 per share. Such warrants contain certain customary exceptions, as well as customary provisions for adjustment in the event of stock splits, subdivision or combination, mergers, and similar business combinations.

Anti-Takeover Effects of Certain Provisions of Delaware Law and Charter and Bylaw Provisions

Certain provisions in our Certificate of Incorporation and Bylaws may make it difficult for a third party to acquire, or attempt to acquire, control of our company, even if a change in control was considered favorable by our stockholders. For example, our board of directors has the authority to issue up to 10,000,000 shares of preferred stock. The board of directors can fix the price, rights, preferences, privileges and restrictions of the preferred stock without any further vote or action by our stockholders. The issuance of shares of preferred stock may delay or prevent a change in control transaction. As a result, the market price of our common stock and the voting and other rights of our stockholders may be adversely affected. An issuance of shares of preferred stock may result in the loss of voting control to other stockholders.

Our organizational documents also contain other provisions that could have an anti-takeover effect, including provisions that:

- provide for a classified board of directors;
- provide that vacancies on the board of directors may be filled only by a majority of directors then in office, even though less than a quorum;
- eliminate cumulative voting in the election of directors;
- prohibit director removal without cause and only allow removal with cause, and allow amendment of certain provisions of our Certificate of Incorporation and our Bylaws, only by the vote of the holders of at least two-thirds of all then-outstanding shares of our common stock;
- grant our board of directors the exclusive authority to increase or decrease the size of the board of directors;
- permit stockholders to only take actions at a duly called annual or special meeting and not by written consent;

- prohibit stockholders from calling a special meeting of stockholders;
- require that stockholders give advance notice to nominate directors or submit proposals for consideration at stockholder meetings; and
- authorize our board of directors, by a majority vote, to amend the Bylaws.

In addition, we are subject to the anti-takeover provisions of Section 203 of the Delaware General Corporation Law, which limits the ability of stockholders owning in excess of 15% of our outstanding voting stock to merge or combine with us. These provisions could discourage potential acquisition proposals and could delay or prevent a change in control transaction. They could also have the effect of discouraging others from making tender offers for our common stock, including transactions that may be in your best interests. These provisions may also prevent changes in our management or limit the price that certain investors are willing to pay for our common stock.

Certain Limitations on Stockholder Actions. Our bylaws also impose some procedural requirements on stockholders who wish to:

- make a nomination in the election of directors;
- propose that a director be removed;
- propose any repeal or change in our bylaws; or
- propose any other business to be brought before an annual or special meeting of stockholders.

Under these procedural requirements, in order to bring a proposal before a meeting of stockholders, a stockholder must deliver timely notice of a proposal pertaining to a proper subject for presentation at the meeting to our corporate secretary along with the following:

- a description of the business or nomination to be brought before the meeting, the reasons for conducting such business at the meeting and any material interest in such business of the stockholder submitting such proposal;
- the text of the proposal or business;
- the stockholder's name and address;
- any material interest of the stockholder in the proposal;
- the number of shares beneficially owned by the stockholder and evidence of such ownership; and
- the names and addresses of all persons with whom the stockholder is acting in concert and a description of all arrangements and understandings with those persons, and the number of shares such persons beneficially own.

To be timely, a stockholder must generally deliver notice not less than 90 days nor more than 120 days prior to the anniversary date of the immediately preceding annual meeting of stockholders.

In order to submit a nomination for our board of directors, a stockholder must also submit any information with respect to the nominee that we would be required to include in a proxy statement, as well as certain other information. If a stockholder fails to follow the required procedures, the stockholder's proposal or nominee will be ineligible and will not be voted on by our stockholders.

USE OF PROCEEDS

We will not receive any of the proceeds from the sale of shares of our common stock in this offering. The selling stockholders will receive all of the proceeds from this offering. We may, however, receive proceeds from the warrants issued to any of the selling stockholders in the event such warrants are exercised for cash.

SELLING STOCKHOLDERS

In connection with the Private Placements and pursuant to the Securities Purchase Agreements, we agreed to file the registration statement of which this prospectus is a part to cover the resale of the shares underlying the Warrants. This prospectus covers the resale or other disposition from time to time by the selling stockholders identified in the table below or their transferees of up to an aggregate of 15,120,898 shares of our common stock, which consists of (i) 4,181,068 shares of our common stock underlying the Short-Term Warrants, (ii) 2,508,634 shares of our common stock underlying the Long-Term Warrants, (iii) 4,318,272 shares of our common stock underlying the May Warrants, (iv) 215,914 shares of our common stock underlying the Placement Agent Warrants, and (v) 3,897,010 shares of our common stock underlying the Additional Warrants. With respect to the Short-Term Warrants, the Long-Term Warrants and the Additional Warrants, we have agreed to keep such registration statement effective until the earliest of (a) such time as no such selling stockholder holds or has the right to acquire the common stock registered for resale hereunder, (b) the date on which the shares of common stock registered for resale hereunder with respect to the Short-Term Warrants, the Long-Term Warrants and the Additional Warrants may be sold or transferred by non-affiliates without any volume or manner-of-sale restrictions and without current public information limitations pursuant to Rule 144 under the Securities Act and (c) five years following the effective date of the registration statement of which this prospectus forms a part. With respect to the May Warrants, we have agreed to keep this registration statement effective until the time upon which no such selling stockholder holds or has the right to acquire the common stock registered for resale hereunder.

We are registering the resale of the above-referenced shares to permit each of the selling stockholders identified below, or their permitted transferees or other successors-in-interest that may be identified in a supplement to this prospectus or, if required, a post-effective amendment to the registration statement of which this prospectus is a part, to resell or otherwise dispose of the shares in the manner contemplated under "Plan of Distribution" in this prospectus (as may be supplemented and amended). This prospectus covers the sale or other disposition by the selling stockholders of up to the total number of shares of common stock issuable upon exercise of the Warrants issued to the selling stockholders. Throughout this prospectus, when we refer to the shares of our common stock being registered on behalf of the selling stockholders, we are referring to the shares of our common stock underlying the Warrants issued to the selling stockholders in connection with the Private Placements and pursuant to the Securities Purchase Agreements, and when we refer to the selling stockholders in this prospectus, we are referring to the purchasers listed in the table below, as well as their permitted transferees or other successors-in-interest that may be identified in a supplement to this prospectus or, if required, a post-effective amendment to the registration statement of which this prospectus is a part. Except as otherwise disclosed herein, the selling stockholders do not have, and within the past three years has not had, any position, office or other material relationship with us.

The shares of common stock issuable upon exercise of the Warrants will become eligible for sale by the selling stockholders under this prospectus only when the Warrants are exercised. We cannot predict when or whether any of the selling stockholders will exercise their Warrants. Following exercise of the Warrants, the shares of our common stock covered hereby may be offered from time to time by the selling stockholders. The selling stockholders may sell some, all or none of their shares. We do not know how long the selling stockholders will hold the shares before selling them, and we currently have no agreements, arrangements or understandings with the selling stockholders regarding the sale or other disposition of any of the shares.

The following table sets forth the name of each selling stockholder, the number and percentage of our common stock beneficially owned by the selling stockholders as of May 17, 2019, the maximum number of shares of our common stock that may be offered under this prospectus, and the number and percentage of shares of our common stock that would be beneficially owned by the selling stockholders after the sale of the maximum number of shares of our common stock pursuant to this prospectus. The information presented in the table is based on 35,383,874 shares of our common stock outstanding on May 16, 2019.

Beneficial ownership is determined in accordance with the rules of the SEC and includes voting or investment power with respect to our common stock. Generally, a person “beneficially owns” shares of our common stock if the person has or shares with others the right to vote those shares or to dispose of them, or if the person has the right to acquire voting or disposition rights within 60 days. The number of shares of our common stock in the column “Number of Shares Subject to Resale Pursuant to this Prospectus” represents all of the shares of our common stock that a selling stockholder may offer and sell from time to time under this prospectus. For certain selling stockholders, the number of shares of common stock into which the Warrants beneficially held by such selling stockholder are exercisable are limited pursuant to the terms of the Warrants to a number of shares of common stock that would result in such selling stockholder having aggregate individual beneficial ownership of the total issued and outstanding shares of common stock over specified percentage thresholds.

Amount and Nature of Beneficial Ownership

Selling stockholder	Immediately Prior to this Prospectus		Number of Shares Subject to Resale Pursuant to this Prospectus	Immediately After Resale of All Shares Subject to Resale Pursuant to this Prospectus*	
	Shares Owned	Percentage		Shares Owned	Percentage
Alpha Capital Ansalt ⁽¹⁾	643,776	1.8%	815,269	321,888	*
Anthony Barrett ⁽²⁾	101,787	*	108,700	58,869	*
Jonathan Barrett ⁽³⁾	229,353	*	117,396	183,002	*
BPY Limited ⁽⁴⁾	1,716,738	4.7%	2,174,056	858,369	2.4%
Granite Point Capital Panacea Global Healthcare Fund ⁽⁵⁾	858,368	2.4%	1,087,026	429,184	1.2%
Gravitas Capital LP ⁽⁶⁾	1,030,042	2.9%	1,304,432	515,021	1.5%
GSB Holdings, Inc. ⁽⁷⁾	352,438	1.0%	126,638	302,438	*
Marilyn Heman ⁽⁸⁾	60,000	*	73,000	30,000	*
Lane Ventures Inc. ⁽⁹⁾	214,592	*	271,756	107,296	*
Lion Gate Capital ⁽¹⁰⁾	214,592	*	271,756	107,296	*
Porter Partners, L.P. ⁽¹¹⁾	200,000	*	253,277	100,000	*
Prentice Lending LLC ⁽¹²⁾	214,592	*	271,756	107,296	*
RS Irrevocable Trust ⁽¹³⁾	625,284	1.8%	543,513	410,692	1.2%
Leonard M. Schiller Revocable Trust Dtd. 10/3/1997 ⁽¹⁴⁾	343,346	1.0%	434,808	171,673	*
SDS Capital Partners II, LLC ⁽¹⁵⁾	1,392,683	3.9%	1,582,984	767,683	2.2%
Paul W. and Bridget A. Smith ⁽¹⁶⁾	50,000	*	63,319	25,000	*
Norman Spivock Trust ⁽¹⁷⁾	858,368	2.4%	1,087,026	429,184	1.2%
Armistice Capital Master Fund, Ltd. ⁽¹⁸⁾	1,439,424	3.9%	1,439,424	—	*
Intracoastal Capital, LLC ⁽¹⁹⁾	1,991,049	5.4%	1,439,424	551,625	1.6%
Sabby Volatility Warrant Master Fund, Ltd. ⁽²⁰⁾	2,878,848	7.8%	1,439,424	1,439,424	4.1%
Sean Hagerty ⁽²¹⁾	121,939	*	41,024	80,915	*
Noam Rubinstein ⁽²²⁾	26,989	*	26,989	—	*
Michael Vasinkevich ⁽²²⁾	139,265	*	139,265	—	*
Mark Viklund ⁽²²⁾	6,477	*	6,477	—	*
Charles Worthman ⁽²²⁾	2,159	*	2,159	—	*

* Beneficial ownership of the selling stockholders after the offering assumes the selling stockholders have the ability to fully exercise all of the warrants held by them and that each selling stockholder will sell all of the shares of common stock offered by it under this prospectus.

- (1) Shares owned consists of 321,888 shares of common stock held by Alpha Capital Ansalt and a warrant to purchase up to 321,888 shares of common stock exercisable within 60 days. The address for Alpha Capital Ansalt is Lettstrasse 32 9490 Vaduz Principality of Liechtenstein. Konrad Ackermann is the natural person with voting and dispositive power over the shares held by Alpha Capital Anstalt.
- (2) Shares owned consists of 58,869 shares of common stock held by Anthony Barrett and a warrant to purchase up to 42,918 shares of common stock exercisable within 60 days. The address for Anthony Barrett is 27 East 65th Street 2A, New York, NY 10965.
- (3) Shares owned consists of 183,002 shares of common stock held by Jonathan Barrett and a warrant to purchase up to 46,351 shares of common stock exercisable within 60 days. The address for Jonathan Barrett is 4400 Post Oak Parkway, Suite 1550, Houston, TX 77027.
- (4) Shares owned consists of 858,369 shares of common stock held by BPY Limited and a warrant to purchase up to 858,369 shares of common stock exercisable within 60 days. The address for BPY Limited is 45 Reid Street, Wessex House, Hamilton, Bermuda HM12.
- (5) Shares owned consists of 429,184 shares of common stock held by Granite Point Capital Panacea Global Healthcare Fund and a warrant to purchase up to 429,184 shares of common stock exercisable within 60 days. The address for Granite Point Capital Panacea Global Healthcare Fund is 109 State Street, 5th Floor, Boston, MA 02109.
- (6) Shares owned consists of 515,021 shares of common stock held by Gravitass Capital LP and a warrant to purchase up to 515,021 shares of common stock exercisable within 60 days. The address for Gravitass Capital LP is 1270 Avenue of the Americas, 7th Floor, New York, NY 10020.
- (7) Shares owned consists of 302,438 shares of common stock held by GSB Holdings, Inc. and a warrant to purchase up to 50,000 shares of common stock exercisable within 60 days. The address for GSB Holdings, Inc. is 14179 Laurel Trail, Wellington, FL 33414.
- (8) Shares owned consists of 30,000 shares of common stock held by Marilyn Hemani and a warrant to purchase up to 30,000 shares of common stock exercisable within 60 days. The address for Marilyn Hemani is 29 Gildersleeve Place, Watchung, NJ 07069.
- (9) Shares owned consists of 107,296 shares of common stock held by Lane Ventures, Inc. and a warrant to purchase up to 107,296 shares of common stock exercisable within 60 days. The address for Lane Ventures Inc. is c/o LH Financial, 510 Madison Avenue, Suite 1400, New York, NY 10022. Joseph Hammer has voting and investment control over the shares shown.
- (10) Shares owned consists of 107,296 shares of common stock held by Lion Gate Capital and a warrant to purchase up to 107,296 shares of common stock exercisable within 60 days. The address for Lion Gate Capital is 1900 Avenue of the Stars, Suite 625, Los Angeles, CA 90067.
- (11) Shares owned consists of 100,000 shares of common stock held by Porter Partners, L.P. and a warrant to purchase up to 100,000 shares of common stock exercisable within 60 days. The address for Porter Partners, L.P. is 300 Drakes Landing Road, Suite 171, Greenbrae, CA 94904.
- (12) Shares owned consists of 107,296 shares of common stock held by Prentice Lending LLC and a warrant to purchase up to 107,296 shares of common stock exercisable within 60 days. The address for Prentice Lending LLC is 100 West Putnam – Slagle House, Greenwich, CT 06830.
- (13) Shares owned consists of 410,692 shares of common stock held by RS Irrevocable Trust and a warrant to purchase up to 214,592 shares of common stock exercisable within 60 days. The address for the RS Irrevocable Trust is 5 Highland Creek Dr., Henderson, NV 89052.
- (14) Shares owned consists of 171,673 shares of common stock held by the Leonard M. Schiller Revocable Trust Dtd. 10/3/1997 and a warrant to purchase up to 171,673 shares of common stock exercisable within 60 days. The address for the Leonard M. Schiller Revocable Trust Dtd. 10/3/1997 is 1110 Lake Shore Dr. – Apt. 9-S, Chicago, IL 60611.
- (15) Shares owned consists of 767,683 shares of common stock held by SDS Capital Partners II, LLC and a warrant to purchase up to 625,000 shares of common stock exercisable within 60 days. The address for SDS Capital Partners II, LLC is 500 Summer Street, Ste. 405, Stamford, CT 06901.
- (16) Shares owned consists of 25,000 shares of common stock held by Paul W. and Bridget A. Smith and a warrant to purchase up to 25,000 shares of common stock exercisable within 60 days. The address for Paul W. and Bridget A. Smith is 4304 Upper Lake Drive, Norman, OK 73072.

- (17) Shares owned consists of 429,184 shares of common stock held by Norman Spivock Trust and a warrant to purchase up to 429,184 shares of common stock exercisable within 60 days. The address for Norman Spivock Trust is 735 White Oak Dr., Santa Rosa, CA 95409.
- (18) Shares owned consists of a warrant to purchase up to 1,439,424 shares of common stock exercisable within 60 days held by Armistice Capital Master Fund Ltd., a Cayman Islands corporation. The address for Armistice Capital Master Fund Ltd. is c/o Armistice Capital, LLC, 510 Madison Avenue, Floor 7, New York, NY 10022. The shares may be deemed to be indirectly beneficially owned by Armistice Capital, LLC, as the investment manager of Armistice Capital Master Fund Ltd., and Steven Boyd as Managing Member of Armistice Capital, LLC and Director of Armistice Capital Master Fund Ltd. Armistice Capital, LLC, and Steven Boyd disclaim beneficial ownership of the reported shares except to the extent of their respective pecuniary interest therein.
- (19) Shares owned consists of 551,625 shares of common stock held by Intracoastal Capital, LLC and a warrant to purchase up to 1,439,424 shares of common stock exercisable within 60 days held by held by Intracoastal Capital, LLC. The address for Intracoastal Capital, LLC is 245 Palm Trail, Delray Beach, FL 33483. Mitchell P. Kopin and Daniel B. Asher, each of whom are managers of Intracoastal Capital LLC, have shared voting control and investment discretion over the securities reported herein that are held by Intracoastal Capital LLC. As a result, each of Mr. Kopin and Mr. Asher may be deemed to have beneficial ownership (as determined under Section 13(d) of the Exchange Act) of the securities reported herein that are held by Intracoastal Capital LLC.
- (20) Shares owned consists of 1,439,424 shares of common stock held by Sabby Volatility Warrant Master Fund, Ltd. and shares of common stock underlying a warrant to purchase up to 1,439,424 shares of common stock exercisable within 60 days held by Sabby Volatility Warrant Master Fund, Ltd. The address for Sabby Volatility Warrant Master Fund, Ltd. is c/o Sabby Management, LLC, 10 Mountainview Road, Suite 205, Upper Saddle River, NJ 07458. Sabby Management, LLC serves as the investment manager of Sabby Volatility Warrant Master Fund, Ltd. Hal Mintz is the manager of Sabby Management, LLC and has voting and investment control of the shares held by Sabby Volatility Warrant Master Fund, Ltd. And may be deemed to indirectly beneficially own the shares. Each of Sabby Management, LLC and Hal Mintz disclaims beneficial ownership over the shares beneficially owned by Sabby Volatility Warrant Master Fund, Ltd., except to the extent of their respective pecuniary interest therein.
- (21) Shares owned consists of 80,915 shares of common stock held by Sean Hagerty and a warrant to purchases 41,024 shares of common stock exercisable within 60 days. The address for Sean Hagerty is 430 Park Avenue, 3rd Floor, New York, NY 10022.
- (22) In each case, shares owned represents shares of common stock underlying a warrant to purchase shares of common stock that is exercisable within 60 days. The address for the holder is c/o H.C. Wainwright & Co., LLC, 430 Park Avenue, New York, NY 10022.

PLAN OF DISTRIBUTION

The selling stockholders and any of their pledgees, donees, transferees, assignees or other successors-in-interest may, from time to time, sell, transfer or otherwise dispose of any or all of their shares of common stock or interests in shares of common stock on any stock exchange, market or trading facility on which the shares are traded or in private transactions. These dispositions may be at fixed prices, at prevailing market prices at the time of sale, at prices related to the prevailing market price, at varying prices determined at the time of sale, or at negotiated prices. The selling stockholders may use one or more of the following methods when disposing of the shares or interests therein:

- ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;
- block trades in which the broker-dealer will attempt to sell the shares as agent but may position and resell a portion of the block as principal to facilitate the transaction;
- through brokers, dealers or underwriters that may act solely as agents;
- purchases by a broker-dealer as principal and resale by the broker-dealer for its account;

- an exchange distribution in accordance with the rules of the applicable exchange;
- privately negotiated transactions;
- through the writing or settlement of options or other hedging transactions entered into after the effective date of the registration statement of which this prospectus is a part, whether through an options exchange or otherwise;
- at a stipulated price per share agreed to between the selling stockholders and broker dealers with respect to a specified number of such shares;
- a combination of any such methods of disposition; and
- any other method permitted pursuant to applicable law.

The selling stockholders may also sell shares under Rule 144 or Rule 904 under the Securities Act of 1933, as amended, or Securities Act, if available, or Section 4(a)(1) under the Securities Act, rather than under this prospectus.

Broker-dealers engaged by the selling stockholders may arrange for other broker-dealers to participate in sales. Broker-dealers may receive commissions or discounts from the selling stockholders (or, if any broker-dealer acts as agent for the purchaser of shares, from the purchaser) in amounts to be negotiated. The selling stockholders do not expect these commissions and discounts to exceed what is customary in the types of transactions involved.

The selling stockholders also may transfer and donate the shares of common stock in other circumstances in which case the transferees, donees, pledgees or other successors in interest will be the selling beneficial owners for purposes of this prospectus.

To the extent required, the shares of our common stock to be sold, the names of the selling stockholders, the respective purchase prices and public offering prices, the names of any agents, dealer or underwriter, any applicable commissions or discounts with respect to a particular offer will be set forth in an accompanying prospectus supplement or, if appropriate, a post-effective amendment to the registration statement that includes this prospectus.

In connection with the sale of the shares of common stock or interests in shares of common stock, the selling stockholders may enter into hedging transactions after the effective date of the registration statement of which this prospectus is a part with broker-dealers or other financial institutions, which may in turn engage in short sales of the common stock in the course of hedging the positions they assume. The selling stockholders may also sell shares of common stock short after the effective date of the registration statement of which this prospectus is a part and deliver these securities to close out their short positions, or loan or pledge the common stock to broker-dealers that in turn may sell these securities. The selling stockholders may also enter into option or other transactions after the effective date of the registration statement of which this prospectus is a part with broker-dealers or other financial institutions or the creation of one or more derivative securities which require the delivery to such broker-dealer or other financial institution of shares offered pursuant to this prospectus, which shares such broker-dealer or other financial institution may resell pursuant to this prospectus (as supplemented or amended to reflect such transaction).

The selling stockholders, and any broker-dealers or agents that are involved in selling the shares may be deemed to be “underwriters” within the meaning of the Securities Act in connection with such sales. In such event, any commissions received by such broker-dealers or agents and any profit on the resale of the shares purchased by them may be deemed to be underwriting commissions or discounts under the Securities Act.

The selling stockholders and any other person participating in such distribution will be subject to applicable provisions of the Exchange Act, and the rules and regulations thereunder, including, without limitation, Regulation M under the Exchange Act, which may limit the timing of purchases and sales of the shares of common stock by the selling stockholders and any other participating person. Regulation M may also restrict the ability of any person engaged in

the distribution of the shares of common stock to engage in market-making activities with respect to the shares of common stock. All of the foregoing may affect the marketability of the shares of common stock and the ability of any person or entity to engage in market-making activities with respect to the shares of common stock.

Under the securities laws of some states, if applicable, the shares of common stock may be sold in such states only through registered or licensed brokers or dealers. In addition, in some states the shares of common stock may not be sold unless such shares have been registered or qualified for sale in such state or an exemption from registration or qualification is available and is complied with.

The aggregate proceeds to the selling stockholders from the sale of the common stock offered by them will be the purchase price of the common stock less discounts or commissions, if any. Each of the selling stockholders reserves the right to accept and, together with their agents from time to time, to reject, in whole or in part, any proposed purchase of common stock to be made directly or through agents. We will not receive any of the proceeds from this offering.

All expenses of registration incurred in connection with this offering are being borne by us. All selling and other expenses incurred by the selling stockholders will be borne by the selling stockholders. We have agreed to indemnify the selling stockholders against certain losses, claims, damages and liabilities, including liabilities under the Securities Act or otherwise.

We have agreed with the selling stockholders to keep the registration statement of which this prospectus constitutes a part effective until, with respect to some selling stockholders, the time upon which no such selling stockholder holds or has the right to acquire the common stock registered for resale hereunder, and with respect to the other selling stockholders, the earliest of (i) such time as no such selling stockholder holds or has the right to acquire the common stock registered for resale hereunder, (ii) the date on which the shares of common stock registered for resale hereunder may be sold or transferred by non-affiliates without any volume or manner-of-sale restrictions and without current public information limitations pursuant to Rule 144 of the Securities Act and (iii) five years following the effective date of the registration statement of which this prospectus forms a part.

Once sold under the registration statement, of which this prospectus forms a part, the shares of common stock will be freely tradable in the hands of persons other than our affiliates.

LEGAL MATTERS

The validity of the common stock being offered hereby will be passed upon for us by Smith, Anderson, Blount, Dorsett, Mitchell & Jernigan, L.L.P., Raleigh, North Carolina.

EXPERTS

Mayer Hoffman McCann P.C., our independent registered public accounting firm, has audited our balance sheets as of December 31, 2018 and 2017, and the related statements of operations and comprehensive loss, stockholders' deficit and cash flows for each of the two years in the period ended December 31, 2018, and the related notes, as set forth in their report, which report expresses an unqualified opinion and includes an explanatory paragraph relating to our ability to continue as a going concern. We have incorporated by reference the financial statements in this registration statement in reliance on the report of Mayer Hoffman McCann P.C. given on their authority as experts in accounting and auditing in giving said reports.

WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and other 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 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 at our website at <http://www.innovatebiopharma.com>. Such information is made available on our website as soon as reasonably practicable after we electronically file it with or furnish it to the SEC. Information contained on, or accessible through, our website is not part of this prospectus.

INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE

The SEC allows us to incorporate by reference into this prospectus the information we file with the SEC, which means we may disclose important information to you by referring you to other documents we file separately with the SEC. The information we incorporate by reference is considered a part of this prospectus. We hereby incorporate by reference the following documents:

- our Annual Report on Form 10-K for the fiscal year ended December 31, 2018 filed on March 18, 2019;
- our Quarterly Report on Form 10-Q for the fiscal quarter ended March 31, 2019 filed on May 10, 2019;
- our Current Reports on Form 8-K filed on January 11, 2019, February 19, 2019, March 13, 2019, March 18, 2019, March 19, 2019 (other than Item 2.02, Item 9.01 and Exhibit 99.1 thereto), April 26, 2019, April 29, 2019, May 1, 2019 and May 17, 2019; and
- the description of our common stock contained in our Registration Statement on Form 8-A as filed with the SEC on June 7, 2016 pursuant to Section 12(b) of the Exchange Act, including any amendments or reports filed for the purpose of updating such description.

Any information in the foregoing documents will automatically be deemed to be modified or superseded to the extent that information in this prospectus modifies or replaces such information. We also incorporate by reference any future filings (other than information 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) made with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act until the termination of the offering of the shares of common stock covered by this prospectus. Information in such future filings shall be deemed to update and supplement the information provided in this prospectus, and any statements in such future filings will automatically be deemed to modify and supersede any information in any document we previously filed with the SEC that is incorporated or deemed to be incorporated herein by reference to the extent that the statements in the later filed document modify or replace such earlier statements.

You may obtain from us copies of the documents incorporated by reference in this prospectus, at no cost, by requesting them in writing or by telephone at:

Innovate Biopharmaceuticals, Inc.
8480 Honeycutt Road, Suite 120
Raleigh, NC 27615
(919) 275-1933



Innovate Biopharmaceuticals, Inc.

15,120,898 Shares of Common Stock

PROSPECTUS

Part II

Information Not Required in the Prospectus

Item 14. Other Expenses of Issuance and Distribution

The following table sets forth an itemization of the various expenses, all of which we will pay, in connection with the issuance and distribution of the securities being registered. All of the amounts shown are estimated except the SEC registration fee.

SEC registration fee	\$	4,780
Legal fees and expenses		35,000
Accounting fees and expenses		10,000
Miscellaneous		—
Total	\$	<u>49,780</u>

Item 15. Indemnification of Directors and Officers

Section 102 of the Delaware General Corporation Law permits a corporation to eliminate the personal liability of its directors to its stockholders for monetary damages for a breach of fiduciary duty as a director, except where the director breached his or her duty of loyalty, failed to act in good faith, engaged in intentional misconduct or knowingly violated a law, authorized the payment of a dividend or approved a stock repurchase in violation of Delaware corporate law or obtained an improper personal benefit. Our amended and restated certificate of incorporation provides that no director shall be personally liable to us or our stockholders for monetary damages for any breach of fiduciary duty as a director, notwithstanding any provision of law imposing such liability, except to the extent that the Delaware General Corporation Law prohibits the elimination or limitation of liability of directors for breaches of fiduciary duty.

Section 145 of the Delaware General Corporation Law provides that a corporation has the power to indemnify a director, officer, employee or agent of the corporation and certain other persons serving at the request of the corporation for another corporation, partnership, joint venture, trust or other enterprise in related capacities, against expenses (including attorneys' fees), judgments, fines and amounts paid in settlements actually and reasonably incurred by the person in connection with an action, suit or proceeding to which he or she was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding by reason of such position, if such person acted in good faith and in a manner he or she reasonably believed to be in or not opposed to the best interests of the corporation, and, in any criminal action or proceeding, had no reasonable cause to believe his or her conduct was unlawful, except that, in the case of actions brought by or in the right of the corporation, no indemnification shall be made with respect to any claim, issue or matter as to which such person shall have been adjudged to be liable to the corporation unless and only to the extent that the Court of Chancery or other adjudicating court determines that, despite the adjudication of liability but in view of all of the circumstances of the case, such person is fairly and reasonably entitled to indemnification for such expenses which the Court of Chancery or such other court shall deem proper. Our amended and restated certificate of incorporation and amended and restated bylaws require us to indemnify our directors and officers to the fullest extent permitted by the Delaware General Corporation Law.

Our amended and restated bylaws provide that we will indemnify each person who was or is a witness or party or threatened to be made a witness or party to any threatened, pending or completed action, suit or proceeding whether civil, criminal, administrative or investigative (other than an action by or in the right of us) by reason of the fact that he or she is or was, or has agreed to become, our director or officer, or is or was serving, or has agreed to serve, at our request as a director, officer, partner, employee or trustee of, or in a similar capacity with, another corporation,

partnership, joint venture, trust or other enterprise (all such persons being referred to as an “Indemnitee”), or by reason of any action alleged to have been taken or omitted in such capacity, against all expenses (including attorneys’ fees), judgments, fines and amounts paid in settlement actually and reasonably incurred in connection with such action, suit or proceeding and any appeal therefrom, if such Indemnitee has been successful in such action, suit or proceeding. Notwithstanding the foregoing, to the extent that any Indemnitee has not been wholly successful, but has been successful as to any matter in such action, suit or proceeding, on the merits or otherwise, he or she will be indemnified by us against all expenses (including attorneys’ fees) actually and reasonably incurred by him or her on his or her behalf in connection with each such matter.

We have entered into indemnification agreements with each of our directors and executive officers. In general, these agreements provide that we will indemnify the directors and executive officers to the fullest extent permitted by law for claims arising in his or her capacity as a director or executive officer of our company or in connection with his or her service at our request for another corporation or entity. The indemnification agreements also provide for procedures that will apply in the event that a director or executive officer makes a claim for indemnification and establish certain presumptions that are favorable to the director.

We maintain a general liability insurance policy which covers certain liabilities of our directors and officers arising out of claims based on acts or omissions in their capacities as directors or officers.

Item 16. Exhibits

The following exhibits have been or are being filed herewith and are numbered in accordance with Item 601 of Regulation S-K:

<u>Exhibit No.</u>	<u>Description</u>
4.1	Form of Long-Term Warrant (incorporated by reference to Exhibit 10.1 of the Company’s Current Report on Form 8-K (File No. 001-37797), filed on March 18, 2019)
4.2	Form of Short-Term Warrant (incorporated by reference to Exhibit 10.1 of the Company’s Current Report on Form 8-K (File No. 001-37797), filed on March 18, 2019)
4.3	Form of May Warrant (incorporated by reference to Exhibit 4.1 of the Company’s Current Report on Form 8-K (File No. 001-37797), filed on May 1, 2019)
4.4	Form of Placement Agent Warrant (incorporated by reference to Exhibit 4.2 of the Company’s Current Report on Form 8-K (File No. 001-37797), filed on May 1, 2019)
4.5	Form of Additional Warrant (incorporated by reference to Exhibit 4.1 of the Company’s Current Report on Form 8-K (File No. 001-37797), filed on May 17, 2019)
5.1	Opinion of Smith, Anderson, Blount, Dorsett, Mitchell & Jemigan, L.L.P.
23.1	Consent of Mayer Hoffman McCann P.C.
23.2	Consent of Smith, Anderson, Blount, Dorsett, Mitchell & Jemigan, L.L.P. (contained in Exhibit 5.1)
24.1	Power of Attorney (contained on signature page)

Item 17. Undertakings

(a) The undersigned registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:

(i) To include any prospectus required by Section 10(a)(3) of the Securities Act of 1933.

(ii) To reflect in the prospectus any acts or events arising after the effective date of this registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in this registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of a prospectus filed with the Commission pursuant to Rule 424(b) under the Securities Act if, in the aggregate, the changes in volume and price represent no more than a 20% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement.

(iii) To include any material information with respect to the plan of distribution not previously disclosed in this registration statement or any material change to such information in this registration statement;

provided, however, that paragraphs (a)(1)(i), (a)(1)(ii) and (a)(1)(iii) do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Commission by the registrant pursuant to section 13 or section 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in the registration statement, or is contained in a form of prospectus filed pursuant to Rule 424(b) that is part of the registration statement.

(2) That, for the purpose of determining any liability under the Securities Act of 1933, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(3) To remove from registration, by means of a post-effective amendment, any of the securities being registered which remain unsold at the termination of the offering.

(4) That, for the purpose of determining liability under the Securities Act of 1933 to any purchaser:

(i) Each prospectus filed by the registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and

(ii) Each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5), or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii), or (x) for the purpose of providing the information required by section 10(a) of the Securities Act of 1933 shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which that prospectus relates, and the offering

of such securities at that time shall be deemed to be the initial bona fide offering thereof. Provided, however, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such effective date, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such effective date.

(5) That, for the purpose of determining liability of the registrant under the Securities Act of 1933 to any purchaser in the initial distribution of the securities, the undersigned registrant undertakes that in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:

- (i) Any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424;
- (ii) Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant;
- (iii) The portion of any other free writing prospectus relating to the offering containing material information about the undersigned registrant or its securities provided by or on behalf of the undersigned registrant; and
- (iv) Any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.

(6) That, for purposes of determining any liability under the Securities Act of 1933, each filing of the registrant's annual report pursuant to Section 13(a) or Section 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Securities Exchange Act of 1934) that is incorporated by reference in this registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the registrants, pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Act and will be governed by the final adjudication of such issue.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Raleigh, State of North Carolina, on May 17, 2019.

INNOVATE BIOPHARMACEUTICALS, INC.

By: /s/ Jay P. Madan

Jay P. Madan, M.S.

President

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS that each individual whose signature appears below constitutes and appoints Jay P. Madan as his or her true and lawful attorney-in-fact and agent with full power of substitution and resubstitution, for him or her and in his or her name, place, and stead, in any and all capacities, to sign any and all amendments (including post-effective amendments) to this Registration Statement, and to file the same, with all exhibits thereto, and all documents in connection therewith, making such changes in this Registration Statement as such person or persons so acting deems appropriate, with the Securities and Exchange Commission, granting unto said attorney-in-fact and agent full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as he might or could do in person, hereby ratifying and confirming all that said attorney-in-fact and agent, or his or her substitute, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, as amended, this Registration Statement has been signed by the following persons in the capacities and on the dates indicated.

Signature	Title	Date
<u>/s/ Sandeep Laumas</u> Sandeep Laumas, M.D.	Executive Chairman, Chief Executive Officer (Principal Executive Officer)	May 17, 2019
<u>/s/ Jay P. Madan</u> Jay P. Madan, M.S.	Director, President, Chief Business Officer and Interim Principal Financial Officer (Interim Principal Financial Officer and Interim Principal Accounting Officer)	May 17, 2019
<u>/s/ Lorin K. Johnson</u> Lorin K. Johnson, Ph.D.	Director	May 17, 2019
<u>/s/ Anthony E. Maida III</u> Anthony E. Maida III, Ph.D., M.A., M.B.A.	Director	May 17, 2019
<u>/s/ Roy Proujansky</u> Roy Proujansky, M.D.	Director	May 17, 2019
<u>/s/ Saira Ramasastry</u> Saira Ramasastry, M.S., M.Phil.	Director	May 17, 2019

OFFICES
Wells Fargo Capitol Center
150 Fayetteville Street, Suite 2300
Raleigh, North Carolina 27601

Mailing Address
P.O. Box 2611
Raleigh, North Carolina
27602-2611

TELEPHONE: (919) 821-1220
FACSIMILE: (919) 821-6800

May 17, 2019

Innovate Biopharmaceuticals, Inc.
8480 Honeycutt Road, Suite 120
Raleigh, North Carolina 27615

Re: Innovate Biopharmaceuticals, Inc.

Ladies and Gentlemen:

We have acted as counsel to Innovate Biopharmaceuticals, Inc., a Delaware corporation (the "Company"), in connection with the resale from time to time by the selling stockholders (the "Selling Stockholders") named in the Registration Statement (as defined below) of up to 3,897,010 shares (the "Warrant Shares") of the Company's common stock, par value \$0.0001 per share (the "Common Stock") issuable upon the exercise of warrants issued by the Company to the Selling Stockholders. The Warrant Shares are included in a Registration Statement on Form S-3 (together with the documents or portions thereof incorporated by reference therein, the "Registration Statement"), filed with the Securities and Exchange Commission (the "Commission") under the Securities Act of 1933, as amended (the "Act"), including the related prospectus dated May 17, 2019, included in the Registration Statement (the "Prospectus").

This opinion is being furnished in accordance with the requirements of Item 601(b)(5)(i) of Regulation S-K.

We have examined the (i) Registration Statement, (ii) the Prospectus, (iii) the warrants to purchase the Warrant Shares, (iv) the Amended and Restated Certificate of Incorporation of the Company, (v) the Amended and Restated Bylaws of the Company, and (vi) resolutions of the board of directors of the Company. We have also examined such other documents and have considered such matters of law and fact, in each case, as we, in our professional judgment, have deemed appropriate to render the opinion contained herein. We call your attention to the fact that as a matter of customary practice, certain assumptions underlying opinions are understood to be implicit. With respect to certain facts, we have considered it appropriate to rely upon certificates or other comparable documents of public officials and officers or other appropriate representatives of the Company, without investigation or analysis of any underlying data contained therein.

Based upon and subject to the foregoing and the further assumptions, limitations and qualifications hereinafter expressed, it is our opinion that the Warrant Shares have been duly authorized, and when issued upon the exercise of the Warrants in accordance with the terms thereof, and upon either (i) the countersigning of the certificates representing the Warrant Shares by a duly authorized signatory of the registrar for the Common Stock or (ii) the book entry of the Warrant Shares by the transfer agent for the Common Stock, will be validly issued, fully paid and nonassessable, and free of any preemptive or similar rights.

In rendering the foregoing opinion, we have assumed that the Company will comply with all applicable notice requirements regarding uncertificated shares provided in the General Corporation Law of the State of Delaware.

We have also assumed that (i) the Registration Statement and any amendments thereto will have become effective and comply with all applicable laws and no stop order suspending the Registration Statement's effectiveness will have been issued and remain in effect, in each case, at the time the Warrant Shares are offered and sold as contemplated by the Registration Statement and (ii) all Warrant Shares will be offered and sold in compliance with applicable federal and state securities laws and in the manner stated in the Registration Statement and the applicable prospectus supplement.

The opinion set forth herein are limited to matters governed by the Delaware General Corporation Law, and no opinion is expressed herein as to the laws of any other jurisdiction. The opinion expressed herein do not extend to compliance with federal or state securities laws relating to the offer or sale of the Shares.

We hereby consent to the reference to our firm under the caption "Legal Matters" in the Prospectus, and to the filing of this opinion letter as an exhibit the Registration Statement. Such consent shall not be deemed to be an admission that our firm is within the category of persons whose consent is required under Section 7 of the Act or the regulations promulgated pursuant to the Act.

Our opinion herein is expressed as of the date hereof, and we undertake no obligation to advise you of any changes in applicable law or any other matters that may come to our attention after the date hereof that may affect our opinion expressed herein.

Sincerely yours,

/s/ Smith, Anderson, Blount, Dorsett, Mitchell & Jernigan, L.L.P.

SMITH, ANDERSON, BLOUNT, DORSETT,
MITCHELL & JERNIGAN, L.L.P.

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in this Registration Statement on Form S-3 and related Prospectus dated May 17, 2019, of our report dated March 18, 2019, with respect to the financial statements of **Innovate Biopharmaceuticals, Inc.**, as of December 31, 2018 and 2017 and for the two years then ended (which report includes an explanatory paragraph relating to the uncertainty of the Company's ability to continue as a going concern), and to the reference to us under the heading "Experts" in this Prospectus which is part of this Registration Statement.

/s/ Mayer Hoffman McCann P.C.

Orange County, California
May 17, 2019

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS that each individual whose signature appears below constitutes and appoints Jay P. Madan as his or her true and lawful attorney-in-fact and agent with full power of substitution and resubstitution, for him or her and in his or her name, place, and stead, in any and all capacities, to sign any and all amendments (including post-effective amendments) to this Registration Statement, and to file the same, with all exhibits thereto, and all documents in connection therewith, making such changes in this Registration Statement as such person or persons so acting deems appropriate, with the Securities and Exchange Commission, granting unto said attorney-in-fact and agent full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as he might or could do in person, hereby ratifying and confirming all that said attorney-in-fact and agent, or his or her substitute, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, as amended, this Registration Statement has been signed by the following persons in the capacities and on the dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Sandeep Laumas</u> Sandeep Laumas, M.D.	Executive Chairman, Chief Executive Officer (Principal Executive Officer)	May 17, 2019
<u>/s/ Jay P. Madan</u> Jay P. Madan, M.S.	Director, President, Chief Business Officer and Interim Principal Financial Officer (Interim Principal Financial Officer and Interim Principal Accounting Officer)	May 17, 2019
<u>/s/ Lorin K. Johnson</u> Lorin K. Johnson, Ph.D.	Director	May 17, 2019
<u>/s/ Anthony E. Maida III</u> Anthony E. Maida III, Ph.D., M.A., M.B.A.	Director	May 17, 2019
<u>/s/ Roy Proujansky</u> Roy Proujansky, M.D.	Director	May 17, 2019
<u>/s/ Saira Ramasastry</u> Saira Ramasastry, M.S., M.Phil.	Director	May 17, 2019