

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

**POST-EFFECTIVE AMENDMENT NO. 1
ON FORM S-8 TO FORM S-4
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933**

INVITAE CORPORATION

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

27-1701898
(I.R.S. Employer
Identification Number)

**1400 16th Street, San Francisco, California 94103
(415) 374-7782**

(Address, including zip code, and telephone number, including area code, of Registrant's principal executive offices)

Non-Plan Restricted Stock Unit Award
(Full title of the plan)

Sean E. George, Ph.D.
President and Chief Executive Officer
Invitae Corporation
1400 16th Street
San Francisco, California 94103
(415) 374-7782

(Name, address, and telephone number, including area code, of agent for service)

Copies to:

Thomas Brida
General Counsel
Invitae Corporation
1400 16th Street
San Francisco, California 94103
(415) 374-7782

Mike Hird
Patty M. DeGaetano
Pillsbury Winthrop Shaw Pittman LLP
12255 El Camino Real, Suite 300
San Diego, California 92130
(619) 234-5000

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, 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 | <input type="checkbox"/> | Accelerated filer | <input checked="" type="checkbox"/> |
| Non-accelerated filer | <input type="checkbox"/> (Do not check if a smaller reporting company) | Smaller reporting company | <input type="checkbox"/> |
| | | Emerging growth company | <input checked="" type="checkbox"/> |

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	Proposed maximum offering price per share	Proposed maximum aggregate offering price	Amount of registration fee
Common stock, \$0.0001 par value per share To be issued pursuant to non-plan restricted stock unit award	63,217 (1)(2)	(2)	(2)	(2)

- (1) Pursuant to Rule 416 under the Securities Act of 1933, the shares of common stock being registered hereunder include such indeterminate number of shares of common stock as may be issuable with respect to the shares of common stock being registered hereunder as a result of stock splits, stock dividends or similar transactions.
- (2) This Post-Effective Amendment No. 1 on Form S-8 covers securities that were originally registered on Invitae's Registration Statement on Form S-4 (File No. 333-220447), as amended. All filing fees payable in connection with the issuance of these securities were previously paid in connection with the filing of the Registration Statement on Form S-4, to which this Post-Effective Amendment No. 1 relates.

The Registration Statement shall become effective upon filing in accordance with Rule 462 under the Securities Act.

EXPLANATORY NOTE

Invitae Corporation (“Invitae”) hereby amends its Registration Statement on Form S-4 (Registration No. 333-220447) originally filed on September 13, 2017, as amended by Pre-Effective Amendment No. 1 filed on September 28, 2017 (as amended, the “Form S-4”), by filing this Post-Effective Amendment No. 1 on Form S-8 (the “Form S-8”).

On November 14, 2017, pursuant to the Agreement and Plan of Merger (the “Merger Agreement”), dated as of July 31, 2017, by and among Invitae, CombiMatrix Corporation (“CombiMatrix”), and Coronado Merger Sub, Inc. (“Merger Sub”), Merger Sub merged with and into CombiMatrix, with CombiMatrix surviving as a wholly owned subsidiary of Invitae (the “Merger”).

This S-8 relates to the offer and sale of 63,217 shares of Invitae common stock which are issuable upon the settlement of a non-plan restricted stock unit award issued by Invitae in connection with the Merger. All such shares of Invitae common stock underlying such non-plan restricted stock unit award were originally registered by Invitae on the Form S-4, which became effective on October 5, 2017.

PART I

INFORMATION REQUIRED IN THE PROSPECTUS

The information specified in Item 1 and Item 2 of Part I of Form S-8 is omitted from this Registration Statement on Form S-8 (the "Registration Statement") in accordance with the provisions of Rule 428 under the Securities Act of 1933, as amended (the "Securities Act"), and the introductory note to Part I of Form S-8.

PART II

INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

Item 3. Incorporation of Documents by Reference.

The following documents filed by the Registrant with the Securities and Exchange Commission (the "Commission") are hereby incorporated by reference in this Registration Statement (other than information in such filings deemed, under SEC rules or otherwise, to be furnished and not filed with the SEC):

- (a) The Registrant's Annual Report on Form 10-K for the year ended December 31, 2017;
- (b) The Registrant's Current Reports on Form 8-K filed on November 15, 2017 (as amended on January 26, 2018 and March 6, 2018), February 28, 2018, March 13, 2018 and April 2, 2018; and
- (c) The description of the Registrant's Common Stock contained in Registrant's registration statement on Form 8-A, filed on February 11, 2015 pursuant to Section 12(b) of the Securities Exchange Act of 1934 (the "Exchange Act"), including any amendment or report filed for the purpose of updating such description.

In addition, all documents filed by the Registrant pursuant to Section 13(a), 13(c), 14 or 15(d) of the Exchange Act (excluding any portions thereof furnished by the Registrant, including information furnished under Item 2.02 and Item 7.01 and any exhibits relating to Item 2.02 or Item 7.01 furnished under Item 9.01 of Form 8-K and any certification required by 18 U.S.C. § 1350), subsequent to the filing of this Registration Statement and prior to the filing of a post-effective amendment which indicates that all securities offered hereby have been sold or which deregisters all securities then remaining unsold, shall be deemed to be incorporated by reference into this Registration Statement and to be a part hereof from the date of filing such documents. Any statement contained in a document incorporated or deemed to be incorporated by reference herein shall be deemed to be modified or superseded for purposes of this Registration Statement to the extent that a statement contained in any subsequently filed document which also is deemed to be incorporated by reference herein modifies or supersedes such statement.

Item 4. Description of Securities.

Not applicable.

Item 5. Interests of Named Experts and Counsel.

Not applicable.

Item 6. Indemnification of Directors and Officers.

Section 102 of the Delaware General Corporation Law (the "DGCL") allows a corporation to eliminate the personal liability of directors of a corporation to the corporation or its stockholders for monetary damages for breach of fiduciary duty as a director, except where the director breached the 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 the DGCL or obtained an improper personal benefit.

Section 145 of the DGCL provides, among other things, that we may indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, other than an action by or in the right of the Registrant, by reason of the fact that the person is or was a director, officer, agent or employee of the Registrant, or is or was serving at our request as a director, officer, agent or employee of another corporation, partnership, joint venture, trust or other enterprise against expenses, including attorneys' fees, judgments, fines and amounts paid in settlement actually and reasonably incurred by the person in connection with such action, suit or proceeding. The power to indemnify applies (a) if such person is successful on the merits or otherwise in defense of any action, suit or proceeding, or (b) if such person acting in good faith and in a manner he or she reasonably believed to be in the best interest, or not opposed to the best interest, of the Registrant, and with respect to any criminal action or proceeding had no reasonable cause to believe his or her conduct was unlawful. The power to indemnify applies to actions brought by or in the right of the Registrant as well but only to the extent of defense expenses, including attorneys' fees but excluding amounts paid in settlement, actually and reasonably incurred and not to any satisfaction of judgment or settlement of the claim itself, and with the further limitation that in such actions no indemnification shall be made in the event of any adjudication of liability to the Registrant, unless the court believes that in light of all the circumstances indemnification should apply.

Section 174 of the DGCL provides, among other things, that a director, who willfully or negligently approves of an unlawful payment of dividends or an unlawful stock purchase or redemption, may be held liable for such actions. A director who was either absent when the unlawful actions were approved or dissented at the time, may avoid liability by causing his or her dissent to such actions to be entered in the books containing minutes of the meetings of the board of directors at the time such action occurred or immediately after such absent director receives notice of the unlawful acts.

The Registrant's restated certificate of incorporation and amended and restated bylaws, filed as Exhibits 3.1 and 3.2 to the Registrant's Current Report on Form 8-K filed on February 22, 2015, provide that the Registrant shall indemnify its directors, officers, employees and other agents to the fullest extent not prohibited by the DGCL or any other applicable law. In addition, the Registrant has entered into agreements with its directors and officers that require the Registrant, among other things, to indemnify the directors and officers against certain liabilities that may arise by reason of their status or service as directors or officers to the fullest extent not prohibited by law. These indemnification provisions and the indemnification agreements may be sufficiently broad to permit indemnification of the Registrant's officers and directors for liabilities, including reimbursement of expenses incurred, arising under the Securities Act of 1933, as amended. The Registrant also intends to maintain director and officer liability insurance, if available on reasonable terms.

Item 7. Exemption from Registration Claimed.

Not applicable

Item 8. Exhibits.

<u>Exhibit No.</u>	<u>Description</u>
4.1	<u>Form of non-plan restricted stock unit award (incorporated by reference to Exhibit A to Exhibit 10.2 to the Registrant's Registration Statement on Form S-4 (File No. 333-220447), as amended, filed September 13, 2017).</u>
5.1	<u>Opinion of Pillsbury Winthrop Shaw Pittman LLP.</u>
23.1	<u>Consent of Pillsbury Winthrop Shaw Pittman LLP (included in Exhibit 5.1).</u>
23.2	<u>Consent of Independent Registered Public Accounting Firm.</u>
23.3	<u>Consent of Haskell & White LLP.</u>
24.1	<u>Powers of Attorney of the directors of the Registrant (incorporated by reference to the signature page to the Registrant's Registration Statement on Form S-4 (File No. 333-220447), as amended, filed September 13, 2017).</u>

Item 9. 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 facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information in the 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 prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20 percent change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement; and

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

provided, however, that paragraphs (a)(1)(i) and (a)(1)(ii) of this section 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.

(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.

(b) The undersigned Registrant hereby undertakes 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 15(d) of the Exchange Act (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Exchange Act) that is incorporated by reference in the 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.

(c) Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the Registrant 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-8 and has duly caused this Post-Effective Amendment No. 1 on Form S-8 to Form S-4 Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the city of San Francisco, state of California, on April 20, 2018.

INVITAE CORPORATION

By /s/ Sean E. George, Ph.D.
Sean E. George, Ph.D.
President and Chief Executive Officer

Pursuant to the requirements of the Securities Act of 1933, this Post-Effective Amendment No. 1 on Form S-8 to Form S-4 Registration Statement has been signed by the following persons in the capacities and on the dates indicated.

<u>Signature</u>	<u>Capacity</u>	<u>Date</u>
<u>/s/ Sean E. George, Ph.D.</u> Sean E. George, Ph.D.	President, Chief Executive Officer and Director <i>(Principal Executive Officer)</i>	April 20, 2018
<u>/s/ Shelly D. Guyer</u> Shelly D. Guyer	Chief Financial Officer <i>(Principal Financial Officer)</i>	April 20, 2018
<u>/s/ Patricia E. Dumond</u> Patricia E. Dumond	Chief Accounting Officer <i>(Principal Accounting Officer)</i>	April 20, 2018
<u>*</u> Randal W. Scott, Ph.D.	Executive Chairman of the Board	April 20, 2018
<u>*</u> Eric Aguiar, M.D.	Director	April 20, 2018
<u>*</u> Geoffrey S. Crouse	Director	April 20, 2018
<u>*</u> Christine M. Gorjanc	Director	April 20, 2018

*Pursuant to powers of attorney duly executed by such directors and filed with the U.S. Securities and Exchange Commission.

*By: /s/ Sean E. George, Ph.D.
Sean E. George, Ph.D.
Attorney-in-Fact



Pillsbury Winthrop Shaw Pittman LLP
12255 El Camino Real, Suite 300 | San Diego, CA 92130-4088 | tel 619.234.5000 | fax 858.509.4010

April 20, 2018

Invitae Corporation
1400 16th Street
San Francisco, CA 94103

Re: Post-Effective Amendment No. 1 on Form S-8 to
Form S-4 Registration Statement (File No. 333-220447)

Ladies and Gentlemen:

We are acting as counsel for Invitae Corporation, a Delaware corporation (the "Company"), in connection with Post-Effective Amendment No. 1 on Form S-8 to Form S-4 Registration Statement (the "Registration Statement") relating to the registration under the Securities Act of 1933 (the "Act") of 63,217 shares (the "Shares") of the Company's common stock, \$0.0001 par value per share, issuable upon settlement of a non-plan restricted stock unit award issued by the Company in connection with the merger contemplated by the Agreement and Plan of Merger, dated as of July 31, 2017, by and among the Company, CombiMatrix Corporation and Coronado Merger Sub, Inc.

We have reviewed and are familiar with such corporate proceedings and other matters as we have considered relevant or necessary for the opinions expressed in this letter. Based upon the foregoing, we are of the opinion that the Shares have been duly authorized and, if issued on the date hereof upon settlement of the non-plan restricted stock unit award in accordance with the terms of the non-plan restricted stock unit award, would be validly issued, fully paid and nonassessable. The opinions set forth in this letter are limited to the General Corporation Law of the State of Delaware, as in effect on the date hereof.

We hereby consent to the filing of this opinion letter as Exhibit 5.1 to the Registration Statement. In giving this consent, we do not thereby admit that we are within the category of persons whose consent is required under Section 7 of the Act or the rules and regulations of the Securities and Exchange Commission promulgated thereunder.

Very truly yours,

/s/ Pillsbury Winthrop Shaw Pittman LLP

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in this Post-Effective Amendment No. 1 on Form S-8 to Form S-4 Registration Statement (Form S-4 No. 333-220447) of Invitae Corporation for the registration of 63,217 shares of its common stock, of our report dated March 5, 2018, with respect to the consolidated financial statements of Invitae Corporation included in its Annual Report (Form 10-K) for the year ended December 31, 2017, filed with the Securities and Exchange Commission.

/s/ Ernst & Young LLP

Redwood City, California
April 20, 2018

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference into Post-Effective Amendment No. 1 on Form S-8 to Form S-4 Registration Statement (No. 333-220447) of Invitae Corporation of our report dated March 3, 2017, related to our audit of CombiMatrix Corporation's (the "Company") consolidated financial statements as of December 31, 2016 and for the year then ended, included in the Company's Annual Report on Form 10-K for the year ended December 31, 2016 which appears in the Current Report on Form 8-K/A of Invitae Corporation filed on January 26, 2018.

/s/ HASKELL & WHITE LLP

Irvine, California
April 20, 2018