



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

DIVISION OF
CORPORATION FINANCE

January 20, 2015

Via E-mail

Mr. Lee Bendekgey
Chief Financial Officer and General Counsel
Invitae Corporation
458 Brannan Street
San Francisco, California 94107

**Re: Invitae Corporation
Registration Statement on Form S-1
Filed January 9, 2015
File No. 333-201433**

Dear Mr. Bendekgey:

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

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

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

Executive Compensation, page 104

1. We note that in updating the summary compensation table to reflect the 2014 fiscal year end, you have removed the 2013 fiscal year end compensation. Please add back such compensation as required by Item 402 of Regulation S-K.

We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filing to be certain that the filing includes the information the Securities Act of 1933 and all applicable Securities Act rules require. Since the company and its management are in possession of all facts relating to a company's disclosure, they are responsible for the accuracy and adequacy of the disclosures they have made.

Notwithstanding our comments, in the event you request acceleration of the effective date of the pending registration statement please provide a written statement from the company acknowledging that:

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- should the Commission or the staff, acting pursuant to delegated authority, declare the filing effective, it does not foreclose the Commission from taking any action with respect to the filing;
- the action of the Commission or the staff, acting pursuant to delegated authority, in declaring the filing effective, does not relieve the company from its full responsibility for the adequacy and accuracy of the disclosure in the filing; and
- the company may not assert staff comments and the declaration of effectiveness as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

Please refer to Rules 460 and 461 regarding requests for acceleration. We will consider a written request for acceleration of the effective date of the registration statement as confirmation of the fact that those requesting acceleration are aware of their respective responsibilities under the Securities Act of 1933 and the Securities Exchange Act of 1934 as they relate to the proposed public offering of the securities specified in the above registration statement. Please allow adequate time for us to review any amendment prior to the requested effective date of the registration statement.

You may contact Joanna Lam at (202) 551-3476 or Tia Jenkins at (202) 551-3871 if you have questions regarding comments on the financial statements and related matters. Please contact Hillary Daniels at (202) 551-3959 or Pamela Howell at (202) 551-3357 with any other questions.

Sincerely,

/s/ Pamela Howell
for

John Reynolds
Assistant Director

cc: Gabriella A. Lombardi, Esq.
Pillsbury Winthrop Shaw Pittman LLP