



DIVISION OF  
CORPORATION FINANCE

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

January 8, 2014

Via E-mail

Jonathan E. Lim, M.D.  
President and Chief Executive Officer  
Ignyta, Inc.  
11095 Flintkote Avenue, Suite D  
San Diego, California 92121

**Re: Ignyta, Inc.  
Registration Statement on Form S-1  
Filed December 19, 2013  
File No. 333-192956**

Dear Dr. Lim:

We have limited our review of your registration statement to those issues we have addressed in our 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. Where 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.

General

1. A review of the Current Report on Form 8-K you filed on November 1 is currently underway. We will not be in a position to take your filing effective until such time as all comments relating to this review have been resolved.
2. We further note that you have submitted an application for confidential treatment that is currently pending. All comments relating to this application, if any, must similarly be resolved prior to your submitting a request for acceleration.
3. As there is no market for your common stock at this time, please amend your registration statement to indicate a price at which your shares will be sold until such time as a market develops. You should revise the cover page of the prospectus, the "Plan of Distribution" section and elsewhere as may be appropriate.

Executive Compensation, page 113

4. Please update all of your executive compensation information to include compensation for the calendar year ended on December 31, 2013.

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:

- 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.

Jonathan E. Lim, M.D.  
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Please contact Scot Foley at (202) 551-3383 or me at (202) 551-3715 with any other questions.

Sincerely,

/s/ Jeffrey P. Riedler

Jeffrey P. Riedler  
Assistant Director

cc: Steven G. Rowles, Esq.  
John A. de Groot, Esq.  
Morrison & Foerster LLP  
12531 High Bluff Drive, Suite 100  
San Diego, California 92130