



DIVISION OF
CORPORATION FINANCE

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

December 29, 2011

Via E-mail

Christopher Anzalone
Chief Executive Officer
Arrowhead Research Corporation
225 South Lake Avenue, Suite 300
Pasadena, CA 91101

**Re: Arrowhead Research Corporation
Registration Statement on Form S-3
Filed December 16, 2011
File No. 333-178532**

Dear Mr. Anzalone:

We have limited our review of your registration statement to the issue we have addressed in our comment. In our comment, 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 comment applies 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 our comment, we may have additional comments.

1. It appears that you are relying on General Instruction I.B.6 to register this offering. Pursuant to Instruction 7, please revise your filing to set forth on the outside front cover of the prospectus the calculations of the aggregate market value of the registrant's outstanding voting and nonvoting common equity pursuant to General Instruction I.B.6. and the amount of all securities offered pursuant to General Instruction I.B.6. during the prior 12 calendar month period that ends on, and includes, the date of the prospectus. Alternatively, if you are not relying on General Instruction I.B.6., please advise us why you are eligible to use Form S-3.

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.

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Notwithstanding our comment, 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.

You may contact Johnny Gharib at (202) 551-3170 or me at (202) 551-3715 with any questions.

Sincerely,

/s/ Jeffrey Riedler

Jeffrey Riedler
Assistant Director

cc: Ryan Murr
Ropes and Gray LLP
Three Embarcadero Center
San Francisco, CA 94111