

August 27, 2009

VIA EDGAR AND FEDEX

Michael Rosenthal
United States Securities and Exchange Commission
Division of Corporation Finance
100 F Street, N.E., Mail Stop 4720
Washington, DC 20549

**Re: Arrowhead Research Corporation
Registration Statement on Form S-1
Filed August 13, 2009
File No. 333-161344**

Dear Mr. Rosenthal:

On behalf of our client Arrowhead Research Corporation (the "Company"), this letter responds to the comments of the Staff of the Securities and Exchange Commission set forth in the letter dated August 25, 2009 related to the above-referenced registration statement. We are also filing herewith Amendment No. 1 to the registration statement (the "Amendment"), which is intended to address the comment contained in your letter.

For reference purposes, the text of the Staff's comment, as set forth in the August 25, 2009 comment letter, has been reproduced herein in italicized text, followed by the Company's response.

Registration Statement on Form S-1 filed August 13, 2009

Selling Security Holders, page 14

- We note that there are significant inconsistencies between the number of shares held by each selling stockholder before the offering and the number of shares offered by each selling stockholder. Please revise your disclosure to clarify the correct number of shares owned by each selling stockholder prior to the offering, and the correct number of shares offered by each selling stockholder.*

Response:

We have amended the selling security holder table in the Amendment to clarify that the holdings of the selling stockholders before the offering include the shares to be offered pursuant to the prospectus.

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If you should have any questions concerning the foregoing, please contact me at (415) 733-6000. Thank you very much for your assistance.

Sincerely,

/s/ Ryan Murr

Ryan Murr

Encl.