

August 26, 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
Preliminary Proxy Statement on Schedule 14A
Filed August 19, 2009**

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 26, 2009 related to the above-referenced proxy statement. We are also filing herewith a further revised preliminary proxy statement on Schedule 14A, which is intended to address the comments contained in your letter.

For ease of reference, the text of the Staff’s comments, as set forth in the August 26, 2009 comment letter, has been reproduced herein in italicized text, followed by the Company’s response.

1. *In your disclosure concerning Proposal Two, please include a discussion about the total number of authorized shares that will be available as a result of the combined effect of the Proposal One, to effect a reverse stock split, and Proposal Two, to increase the number of authorized shares.*

Michael Rosenthal
August 26, 2009

Response:

We have complied with this request and have added a discussion in Proposal Two about the total number of authorized shares that would be available if both Proposal One and Proposal Two were approved and implemented.

2. *We note that in your disclosure concerning Proposal Two you state that, “The Company has no current plans for the issuance of any new shares that would be authorized by this proposal.” However, this appears to contradict your plans to issue newly authorized shares as a result of the reverse stock split in Proposal One and to issue options pursuant to Proposal Three. Please revise to reconcile this discrepancy. In addition, your discussion of plans to issue shares that have been newly authorized should also encompass authorized shares that will become available for issuance as a result of the anticipated reverse stock split.*

Response:

We have complied with this request and have clarified that a portion of the additional shares will be used to make the option grants discussed in Proposal Three. As for plans to issue newly authorized shares generally (e.g., to raise capital), we have clarified that there are no offerings currently planned or offering terms that are being contemplated.

In response to the comment about the potential issuance of shares that would become available as a result of the reverse stock split, we have provided similar disclosure regarding the plans for issuances under the caption “*Material Effects of Proposed Reverse Stock Split*” within Proposal One.

3. *In your disclosure concerning Proposal Three, please discuss the exercise price of the options surrendered in contrast to the current market price of the common stock, and discuss how this impacts the value of the options surrendered relative to the options granted.*

Response:

We have complied with this request and have added a discussion of a possible option exercise price, which was assumed to equal to the closing stock price on the record date. We have also added a discussion of how this price compares to the exercise prices of the options that were forfeited and certain other key terms that would affect the value of the awards (i.e., number of shares and vesting requirements).

4. *In your disclosure concerning Proposal Three, please provide a discussion of the conflicts of interest that may exist because officers and directors who are in a position to influence the Company’s actions will be recipients of many of the new option awards.*

Michael Rosenthal
August 26, 2009

Response:

We have complied with this request and have added this disclosure in Proposal Three, as well as a cross reference to the disclosure contained under the caption, *“Interests of Certain Persons in Matters to be Acted Upon.”*

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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.