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**UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION**  
Washington, D.C. 20549

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**FORM S-3  
REGISTRATION STATEMENT**  
*UNDER  
THE SECURITIES ACT OF 1933*

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**ARROWHEAD RESEARCH CORPORATION**

(Exact name of Registrant as Specified in Its Charter)

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**Delaware**  
(State or other jurisdiction of  
incorporation or organization)

**46-0408024**  
(I.R.S. Employer  
Identification Number)

**225 S. Lake Avenue, Suite 1050  
Pasadena, California 91101  
(626) 304-3400**

(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

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**Christopher Anzalone, Chief Executive Officer  
Arrowhead Research Corporation  
225 South Lake Avenue, Suite 1050  
Pasadena, CA 91101  
(626) 304-3400**

(Name, address, including zip code, and telephone number, including area code, of agent for service)

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**Copies to:  
Ryan Murr  
Gibson, Dunn & Crutcher LLP  
555 Mission St., Suite 3000  
San Francisco, CA 94105-0921  
Telephone: (415) 393-8200  
Facsimile: (415) 393-8306**

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**Approximate Date of Commencement of Proposed Sale to the Public:** From time to time after this Registration Statement becomes effective, as determined by the Selling Stockholder.

If the only securities being registered on this form are being offered pursuant to dividend or interest reinvestment plans, please check the following box.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box.

If this Form is used to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act Registration Statement number of the earlier effective registration statement for the same offering.

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act Registration Statement number of the earlier effective registration statement for the same offering.

If this Form is a registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box.

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer   
Non-accelerated filer  (Do not check if a smaller reporting company)

Accelerated filer   
Smaller reporting company

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**CALCULATION OF REGISTRATION FEE**

Title of Each Class of Securities to be Registered	Amount to be Registered(1)(2)	Proposed Maximum Offering Price per Share(3)	Proposed Maximum Aggregate Offering Price(3)	Amount of Registration Fee
Common Stock, par value \$.001 per share	3,299,323	\$7.31	\$24,118,051.13	\$2,802.52

- (1) Pursuant to Rule 416 of the Securities Act of 1933, as amended (the "Securities Act"), this Registration Statement also covers such additional securities as may become issuable to prevent dilution resulting from stock splits, stock dividends and similar events.
- (2) As explained in more detail below, \$10,000,000 in shares of Arrowhead common stock payable to Novartis on March 4, 2015 was calculated based on the average closing price of Arrowhead common stock, as reported on the Nasdaq Global Select Market, for the ten trading days ending two trading days immediately prior to March 4, 2015. The remaining \$15,000,000 in shares of Arrowhead common stock due to Novartis was issued on March 12, 2015 and calculated based on the average closing price of Arrowhead common stock, as reported on the Nasdaq Global Select Market, for the ten trading days ending two trading days immediately prior to March 12, 2015.
- (3) Pursuant to Rule 457(c), calculated on the basis of the average of the high and low prices per share of the Registrant's Common Stock reported on the Nasdaq Global Select Market on March 10, 2015.

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**The registrant hereby amends this Registration Statement on such date or dates as may be necessary to delay its effective date until the Registrant shall file a further amendment which specifically states that this Registration Statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933, as amended, or until the Registration Statement shall become effective on such date as the Securities and Exchange Commission, acting pursuant to said Section 8(a), may determine.**

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**The information in this prospectus is not complete and may be changed. We may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities and it is not soliciting an offer to buy these securities in any state where the offer or sale is not permitted.**

**Subject to Completion, dated March [ • ], 2015**

Prospectus

# **Arrowhead Research Corporation**

## **3,299,323 shares of Common Stock**

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This prospectus covers the sale of an aggregate of 3,299,323 shares of our Common Stock, \$0.001 par value per share (the "Shares"), by the selling security holder identified in this prospectus (collectively with any of the holder's transferees, pledgees, donees or successors, the "Selling Stockholder"). Of the Shares covered by this prospectus: (i) 1,337,256 Shares (the "Closing Shares") were issued at the closing of an Asset Purchase and Exclusive License Agreement (the "Novartis Agreement") by and between the Company and Novartis Institutes for BioMedical Research, Inc. ("Novartis"), with a closing date of March 4, 2015 (the "Closing Date"); and (ii) 1,962,067 Shares (the "Post-Closing Shares") were issued to Novartis pursuant to the Novartis Agreement on March 12, 2015. The number of Closing Shares issued was calculated based on the average closing price of Arrowhead common stock, as reported on the Nasdaq Global Select Market, for the ten trading days ending two trading days immediately prior to the Closing Date, which average closing price was \$7.48. The number of Post-Closing Shares issued was calculated based on the average closing price of Arrowhead common stock, as reported on the Nasdaq Global Select Market, for the ten trading days ending two trading days immediately prior to March 12, 2015, which average closing price was \$7.65.

The Company will not receive any proceeds from the sale by the Selling Stockholder of the Shares. We are paying the cost of registering the Shares covered by this prospectus as well as various related expenses. The Selling Stockholder is responsible for all selling commissions, transfer taxes and other costs related to the offer and sale of its shares.

Sales of the Shares by the Selling Stockholder may occur at fixed prices, at market prices prevailing at the time of sale, at prices related to prevailing market prices, or at negotiated prices. The Selling Stockholder may sell shares to or through underwriters, broker-dealers or agents, who may receive compensation in the form of discounts, concessions or commissions from the Selling Stockholder, the purchasers of the shares, or both. If required, the number of shares to be sold, the public offering price of those shares, the names of any underwriters, broker-dealers or agents and any applicable commission or discount will be included in a supplement to this prospectus, called a prospectus supplement.

The Company's Common Stock is traded on The Nasdaq Global Select Market under the symbol "ARWR." On March 12, 2015, the closing sale price of our Common Stock on The Nasdaq Global Select Market was \$7.54 per share. Our principal executive offices are located at 225 South Lake Avenue, Suite 1050, Pasadena, California 91101, and our telephone number is (626) 304-3400.

**Investing in our securities involves a high degree of risk. You should carefully consider the [Risk Factors](#) included herein before you invest in our securities.**

**Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.**

The date of this prospectus is March , 2015

## ABOUT THIS PROSPECTUS

You should read this prospectus, any applicable prospectus supplement and the information incorporated by reference in this prospectus before making an investment in the securities of Arrowhead Research Corporation. See “Where You Can Find Additional Information” for more information. You should rely only on the information contained in or incorporated by reference in this prospectus or a prospectus supplement. The Company has not authorized anyone to provide you with different information. This document may be used only in jurisdictions where offers and sales of these securities are permitted. You should assume that information contained in this prospectus, or in any document incorporated by reference, is accurate only as of any date on the front cover of the applicable document. Our business, financial condition, results of operations and prospects may have changed since that date.

### SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus contains certain forward-looking statements within the meaning of federal securities laws, and we intend that such forward-looking statements be subject to the safe harbors created thereby. For this purpose, any statements contained in this prospectus except for historical information may be deemed to be forward-looking statements. Without limiting the generality of the foregoing, words such as “may,” “will,” “expect,” “believe,” “anticipate,” “intend,” “could,” “estimate,” or “continue” or the negative or other variations thereof or comparable terminology are intended to identify forward-looking statements. In addition, any statements that refer to projections of our future financial performance, trends in our businesses, or other characterizations of future events or circumstances are forward-looking statements.

The forward-looking statements included herein are based on current expectations of our management based on available information and involve a number of risks and uncertainties, all of which are difficult or impossible to predict accurately and many of which are beyond our control. As such, our actual results may differ significantly from those expressed in any forward-looking statements. Factors that may cause or contribute to such differences include, but are not limited to, those discussed in more detail in Item 1 (Business) and Item 1A (Risk Factors) of Part I and Item 7 (Management's Discussion and Analysis of Financial Condition and Results of Operations) of Part II of our most recent Annual Report on Form 10-K, factors described under the section captioned “Risk Factors” in this prospectus, as may be updated from time to time by our future filings under the Securities Exchange Act, and elsewhere in the documents incorporated by reference in this prospectus. Readers should carefully review these risks, as well as the additional risks described in other documents we file from time to time with the Securities and Exchange Commission. In light of the significant risks and uncertainties inherent in the forward-looking information included herein, the inclusion of such information should not be regarded as a representation by us or any other person that such results will be achieved, and readers are cautioned not to place undue reliance on such forward-looking information. Except as may be required by law, we disclaim any intent to revise the forward-looking statements contained herein to reflect events or circumstances after the date hereof or to reflect the occurrence of unanticipated events.

### ABOUT THE COMPANY

*Unless otherwise noted: (1) the term “Arrowhead Research” refers to Arrowhead Research Corporation, a Delaware corporation, formerly known as InterActive Group, Inc., (2) the terms “Arrowhead,” the “Company,” “we,” “us,” and “our,” refer to the ongoing business operations of Arrowhead and its subsidiaries, whether conducted through Arrowhead Research or a subsidiary of the company, and (3) the term “Common Stock” refers to shares of Arrowhead Research's Common Stock and the term “stockholder(s)” refers to the holders of Common Stock or securities exercisable for Common Stock.*

Arrowhead Research develops novel drugs to treat intractable diseases by silencing the genes that cause them. Using the broadest portfolio of RNA chemistries and efficient modes of delivery, Arrowhead therapies trigger the RNA interference mechanism to induce rapid, deep and durable knockdown of target genes. Arrowhead's most advanced drug candidate in clinical development is ARC-520, which is designed to treat chronic hepatitis B infection by inhibiting the production of all HBV gene products. The goal is to reverse the immune suppression that prevents the body from controlling the virus and clearing the disease. Arrowhead's second clinical candidate is ARC-AAT, a treatment for a rare liver disease associated with a genetic disorder that causes alpha-1 antitrypsin deficiency.

Our executive offices are located at 225 South Lake Avenue, Suite 1050, Pasadena CA 91101 and our telephone number is (626) 304-3400. Additional information regarding our company, including our audited financial statements and descriptions of our business, is contained in the documents incorporated by reference in this prospectus. See “Where You Can Find More Information” and “Incorporation of Certain Information by Reference”.

## **RISK FACTORS**

Investing in our securities involves a high degree of risk. Before making an investment decision, you should carefully consider the risks described in the sections entitled "Risk Factors" in our most recent Annual Report on Form 10-K and subsequent Quarterly Reports on form 10-Q, as filed with the SEC, which are incorporated herein by reference in their entirety, as well any amendment or updates to our risk factors reflected in subsequent filings with the SEC, including the applicable prospectus supplement. Our business, financial condition or results of operations could be materially adversely affected by any of these risks. The trading price of our securities could decline due to any of these risks, and you may lose all or part of your investment. This prospectus and the incorporated documents also contain forward-looking statements that involve risks and uncertainties. Our actual results could differ materially from those anticipated in these forward-looking statements as a result of certain factors, including the risks mentioned elsewhere in this prospectus. For more information, see the section entitled "Where You Can Find More Information."

## **USE OF PROCEEDS**

The proceeds from the resale of the Shares under this prospectus are solely for the account of the Selling Stockholder. We will not receive any proceeds from the sale of Shares under this prospectus.

## SELLING SECURITYHOLDER

The Company has included in this prospectus 3,299,323 shares of Common Stock, which were originally issued or are issuable as follows:

- <sup>n</sup> 1,337,256 shares issued as set forth in the Asset Purchase and Exclusive License Agreement (the "Novartis Agreement") by and between the Company and Novartis Institutes for BioMedical Research, Inc. ("Novartis"), which closing took place on March 4, 2015 (the "Closing Date"); and
- <sup>n</sup> 1,962,067 additional shares issued under the Novartis Agreement on March 12, 2015.

Pursuant to the Novartis Agreement, the Company issued to Novartis \$10,000,000 in shares of Arrowhead common stock with a payment date of the Closing Date (the "Closing Shares"), and an additional \$15,000,000 in shares of Arrowhead common stock issued on March 12, 2015 (the "Post-Closing Shares"). The number of Closing Shares issued was calculated based on the average closing price of Arrowhead common stock, as reported on the Nasdaq Global Select Market, for the ten trading days ending two trading days immediately prior to the Closing Date, which average closing price was \$7.48. The number of Post-Closing Shares issued was calculated based on the average closing price of Arrowhead common stock, as reported on the Nasdaq Global Select Market, for the ten trading days ending two trading days immediately prior to March 12, 2015, which average closing price was \$7.65.

In connection with the transactions contemplated by the Novartis Agreement, we agreed to file a registration statement with the Securities and Exchange Commission covering the resale of the Shares.

The following table sets forth certain information regarding the Selling Stockholder and the shares of Common Stock beneficially owned by it, which is based on information that is available to us as of March 12, 2015. The Selling Stockholder may offer shares under this prospectus from time to time and may elect to sell none, some or all of the shares set forth next to its name. As a result, we cannot estimate the number of shares of Common Stock that the Selling Stockholder will beneficially own after termination of sales under this prospectus. In addition, the Selling Stockholder may have sold, transferred or otherwise disposed of all or a portion of that holder's shares of Common Stock since the date on which it provided information for this table. We have not made independent inquiries about this.

Beneficial ownership is determined in accordance with the rules and regulations of the SEC and includes voting or investment power with respect to our common stock. Shares of our common stock subject to options or warrants that are currently exercisable or exercisable within 60 days of March 12, 2015 are considered outstanding and beneficially owned by the person holding the options or warrants for the purpose of calculating the percentage ownership of that person but not for the purpose of calculating the percentage ownership of any other person.

We are relying on written commitments from the Selling Stockholder to notify us of any changes in its beneficial ownership after the date it originally provided this information. See "Plan of Distribution".

<u>Selling Security Holder(1)</u>	<u># of Shares held before Offering</u>	<u># Shares Being Offered</u>	<u># of Shares held after Offering(2)</u>	<u>Percentage of Shares After Offering(2)</u>
Novartis Institutes for BioMedical Research, Inc.	3,299,323	3,299,323	—	—

- (1) If required, information about other selling security holders, except for any future transferees, pledgees, donees or successors of the selling security holder named in the table above, will be set forth in a prospectus supplement or amendment to the registration statement of which this prospectus is a part. Additionally, post-effective amendments to the registration statement will be filed to disclose any material changes to the plan of distribution from the description contained in the final prospectus.
- (2) Assumes all shares offered by the Selling Stockholder hereby are sold and that the Selling Stockholder buys or sells no additional shares of Common Stock prior to the completion of this offering.

## PLAN OF DISTRIBUTION

The Shares offered by this prospectus may be sold by the Selling Stockholder from time to time at its discretion. Such sales may be made at fixed prices that may be changed, at market prices prevailing at the time of sale, at prices related to such prevailing market prices, or at negotiated prices, and may be made in the over-the-counter market or any exchange on which our common stock may then be listed, or otherwise. In addition, the Selling Stockholder may sell some or all of its Shares through:

- <sup>n</sup> a block trade in which a broker-dealer may resell a portion of the block, as principal, in order to facilitate the transaction;
- <sup>n</sup> purchases by a broker-dealer, as principal, and resale by the broker-dealer for its account;

- ⁿ ordinary brokerage transactions and transactions in which a broker solicits purchasers;
- ⁿ in negotiated transactions;
- ⁿ in a combination of any of the above methods of sale; or
- ⁿ any other method permitted under applicable law.

The Selling Stockholder may also engage in short sales against the box, puts and calls and other hedging transactions in the Shares or derivatives of the Shares and may sell or deliver the Shares in connection with these trades. For example, the Selling Stockholder may:

- ⁿ enter into transactions involving short sales of our common stock by broker-dealers;
  - ⁿ sell our common stock short and redeliver such shares to close out its short positions;
  - ⁿ enter into option or other types of transactions that require the Selling Stockholder to deliver shares of common stock to a broker-dealer, who will then resell or transfer the common stock under this prospectus; or
  - ⁿ loan or pledge shares of common stock to a broker-dealer, who may sell the loaned shares or, in the event of default, sell the pledged shares.
- ⁿ There is no assurance that the Selling Stockholder will sell any or all of the Shares offered hereby.

The Selling Stockholder may negotiate and pay broker-dealers commissions, discounts or concessions for their services. Broker-dealers engaged by the Selling Stockholder may allow other broker-dealers to participate in resales. However, the Selling Stockholder and any broker-dealers involved in the sale or resale of our common stock may qualify as “underwriters” within the meaning of the Section 2(a)(11) of the Securities Act. In addition, the broker-dealers’ commissions, discounts or concessions may qualify as underwriters’ compensation under the Securities Act. If the Selling Stockholder qualifies as an “underwriter,” it will be subject to the prospectus delivery requirements of the Securities Act.

In addition to selling its shares of common stock under this prospectus, the Selling Stockholder may:

- ⁿ transfer its common stock in other ways not involving market makers or established trading markets, including, but not limited to, directly by gift, distribution, privately negotiated transactions in compliance with applicable law or other transfer; or
- ⁿ sell its common stock under Rule 144 of the Securities Act rather than under this prospectus, if the transaction meets the requirements of Rule 144. The Selling Stockholder will bear all expenses with respect to the offering of common stock by the Selling Stockholder.

Under the applicable rules and regulations of the Exchange Act, any person engaged in the distribution of the Shares may not simultaneously engage in market making activities with respect to our common stock for a period of two business days prior to the commencement of such distribution. In addition, the Selling Stockholder will be subject to the applicable provisions of the Exchange Act and the associated rules and regulations under the Exchange Act, including Regulation M, which provisions may limit the timing of purchases and sales of shares of our common stock by the Selling Stockholder.

The Selling Stockholder may from time to time pledge or grant a security interest in some or all of the Shares owned by it and, if it defaults in the performance of its secured obligations, the pledges or secured parties may offer and sell the Shares from time to time under this prospectus after an amendment has been filed under Rule 424(b)(3) or other applicable provision of the Securities Act of 1933 amending the listing of Selling Stockholder to include the pledge, transferee or other successors in interest as Selling Stockholder under this prospectus.

The Selling Stockholder also may transfer the Shares in other circumstances, in which case the respective pledgees, donees, transferees or other successors in interest will be the selling beneficial owners for purposes of this prospectus and may sell the Shares from time to time under this prospectus after an amendment has been filed under Rule 424(b)(3) or other applicable provision of the Securities Act amending the listing of Selling Stockholder to include the pledge, transferee or other successors in interest as Selling Stockholder under this prospectus.

We will make copies of this prospectus available to the Selling Stockholder and have informed it of the need to deliver copies of this prospectus to purchasers at or prior to the time of any sale of the Shares.

We will bear all costs, expenses and fees in connection with the registration of the Shares. The Selling Stockholder will bear all commissions and discounts, if any, attributable to the resale of the Shares. The Selling Stockholder may agree to indemnify any broker-dealer or agent that participates in transactions involving sales of the Shares against certain liabilities, including liabilities arising under the Securities Act.

## EXPERTS

The financial statements of the Company incorporated in this prospectus by reference from the Company's Annual Report on Form 10-K for the year ended September 30, 2014 have been audited by Rose, Snyder & Jacobs LLP as stated in their report incorporated by reference and given upon the authority of said firm as experts in auditing and accounting.

## LEGAL MATTERS

Certain legal matters, including the validity of the securities offered pursuant to this registration statement, will be passed upon for us by Gibson, Dunn & Crutcher LLP, San Francisco, California.

## WHERE YOU CAN FIND MORE INFORMATION

We must comply with the informational requirements of the Securities Exchange Act of 1934, as amended, and we are required to file reports and proxy statements and other information with the Securities and Exchange Commission. You may read and copy these reports, proxy statements and other information at the Public Reference Room maintained by the Securities and Exchange Commission at 100 F Street, N.E., Washington, D.C. 20549. You may also obtain copies at the prescribed rates from the Public Reference Section of the Securities and Exchange Commission at its principal office in Washington, D.C. You may call the Securities and Exchange Commission at 1-800-SEC-0330 for further information about the public reference room. The Securities and Exchange Commission also maintains a website that contains reports, proxy and information statements and other information regarding issuers like us that file electronically with the Securities and Exchange Commission. You may access the Securities and Exchange Commission's web site at <http://www.sec.gov>. We maintain a website at [www.arrowheadresearch.com](http://www.arrowheadresearch.com). The information contained in, or that can be accessed through, our website is not incorporated by reference herein and is not part of this prospectus.

Statements contained in this prospectus as to the contents of any contract or other document are not necessarily complete, and in each instance we refer you to the copy of the contract or document filed as an exhibit to the registration statement, each such statement being qualified in all respects by such reference.

## INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The Securities and Exchange Commission allows us to incorporate by reference in this prospectus the information that we file with it. Incorporation by reference means that we can disclose important information to you by referring you to other documents that are legally considered to be part of this prospectus. Later information that we file with the Securities and Exchange Commission will automatically update and supersede the information in this prospectus, any supplement and the documents listed below. Our SEC file number is 0-21898. We incorporate by reference the specific documents listed below and any future filings made with the Securities and Exchange Commission under Section 13(a), 13(c), 14, or 15(d) of the Securities Exchange Act of 1934, as amended, until all of the shares of common stock and warrant shares covered by this prospectus are sold:

- <sup>n</sup> The Company's Annual Report on Form 10-K for the fiscal year ended September 30, 2014, filed on November 25, 2014;
- <sup>n</sup> The Company's Quarterly Reports on Form 10-Q for the fiscal quarter ended December 31, 2014, filed on February 9, 2015;
- <sup>n</sup> The Company's Definitive Proxy Statement on Schedule 14A, filed on January 23, 2015;
- <sup>n</sup> The Company's Current Reports on Form 8-K filed on March 5, 2015 and March 6; and
- <sup>n</sup> All documents filed by the Company pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Exchange Act, after the date of the original Registration Statement and prior to effectiveness of the registration statement of which this prospectus is a part, provided that all documents "furnished" by the Company to the SEC and not "filed" are not deemed incorporated by reference herein.

We will furnish without charge to each person, including any beneficial owner, to whom this prospectus is delivered, upon written or oral request, a copy of any document incorporated by reference. Requests should be addressed to Corporate Secretary, 225 South Lake Street, Suite 300, Pasadena, CA 91101 or may be made telephonically at (626) 304-3400.

You should rely only on the information incorporated by reference or provided in this prospectus or any prospectus supplement. We have not authorized anyone to provide you with different information. You should not assume that the information contained in this prospectus or the accompanying prospectus supplement is accurate on any date subsequent to the date set forth on the front of the document or that any information we have incorporated by reference is correct on any date subsequent to the date of the document incorporated by reference, even though this prospectus and any accompanying prospectus supplement is delivered or securities are sold on a later date.

**PART II**  
**INFORMATION NOT REQUIRED IN PROSPECTUS**

**Item 14. Other Expenses of Issuance and Distribution (1).**

The following are the estimated expenses of the distribution of the shares registered hereunder on Form S-3:

Registration Fee—Securities and Exchange Commission	\$ 2,802.52
Accountants Fees and Expenses	\$ 2,500
Legal Fees and Expenses	\$ 10,000
Miscellaneous	\$ 0
<b>Total</b>	<b><u>\$15,302.52</u></b>

(1) The amounts set forth below, except for the SEC Registration Fee, are estimated.

**Item 15. Indemnification of Directors and Officers.**

The Company's Certificate of Incorporation provides for the elimination of personal monetary liability of directors to the fullest extent permissible under Delaware law. Delaware law does not permit the elimination or limitation of director monetary liability for: (i) breaches of the director's duty of loyalty to the corporation or its stockholders; (ii) acts or omissions not in good faith or involving intentional misconduct or knowing violations of law; (iii) the payment of unlawful dividends or unlawful stock repurchases or redemptions or (iv) transactions in which the director received an improper personal benefit.

Section 145 of the Delaware General Corporation Law permits a Delaware corporation to indemnify, on certain terms and conditions, any person who was or is a party or is threatened to be made a party to any threatened pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative, by reason of the fact that he is or was a director, officer, employee or agent of the corporation or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by him in connection with such action. The Certificate of Incorporation and Bylaws of the Company require the Company to indemnify the Company's directors and officers to the fullest extent permitted under Delaware law.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the Company pursuant to the foregoing provisions, the Company has been advised that in the opinion of the SEC such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable.

**Item 16. Exhibit Index.**

<u>Exhibit No.</u>	<u>Description</u>
4.1	Form of Common Stock Certificate (1)
4.2	Certificate of Incorporation of InterActive Group, Inc., a Delaware corporation, dated December 15, 2000 (2)
4.3	Certificate of Amendment to Certificate of Incorporation of InterActive Group, Inc. (effecting, among other things a change in the corporation's name to "Arrowhead Research Corporation"), filed with the Secretary of the State of Delaware on January 12, 2004 (3)
4.4	Certificate of Amendment to Certificate of Incorporation of Arrowhead Research Corporation, dated January 25, 2005 (4)
4.5	Certificate of Amendment to Certificate of Incorporation of Arrowhead Research Corporation, dated October 13, 2009 (5)
4.6	Certificate of Amendment to Certificate of Incorporation of Arrowhead Research Corporation, dated November 17, 2011 (6)
4.7	Bylaws (2)
4.8	Amendment No. 1 to the Bylaws of Arrowhead Research Corporation (7)
5.1	Opinion of Gibson, Dunn & Crutcher LLP **
23.1	Consent of Rose, Snyder & Jacobs, the registrant's independent registered public accounting firm**

23.2 Consent of Gibson, Dunn & Crutcher LLP (included in legal opinion filed as Exhibit 5.1)\*\*

24.1 Power of Attorney (included on signature page)\*\*

\*\* Filed herewith.

- (1) Filed as an exhibit to the registrant's Amendment No. 2 to the Registration Statement on Form S-1, filed on September 11, 2009 and incorporated herein by reference.
- (2) Filed as an exhibit to the registrant's Definitive Information Statement on Schedule 14C, filed on December 22, 2000 and incorporated herein by reference.
- (3) Filed as an exhibit to the registrant's Definitive Information Statement on Schedule 14C, filed on December 22, 2003 and incorporated herein by reference.
- (4) Filed as an exhibit to the registrant's Quarterly Report on Form 10-QSB, filed on February 11, 2005 and incorporated herein by reference.
- (5) Filed as an exhibit to the registrant's Annual Report on Form 10-K, filed on December 22, 2009 and incorporated herein by reference.
- (6) Filed as an exhibit to the registrant's Current Report on Form 8-K, filed on November 17, 2011 and incorporated herein by reference.
- (7) Filed as an exhibit to the registrant's Current Report on Form 8-K, filed on April 27, 2010 and incorporated by reference herein.

**Item 17. Undertakings.**

*Item 512(a) of Regulation S-K.* The undersigned registrant hereby undertakes:

- (1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:
  - (i) To include any prospectus required by Section 10(a)(3) of the Securities Act of 1933;
  - (ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than 20 percent change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement; and
  - (iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement;

*Provided, however, That:*

Paragraphs (a)(1)(i), (a)(1)(ii) and (a)(1)(iii) of this section do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Commission by the registrant pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in the registration statement, or is contained in a form of prospectus filed pursuant to Rule 424(b) that is part of the registration statement.

- (2) That, for the purpose of determining any liability under the Securities Act of 1933, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.
- (3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

- (4) That, for the purpose of determining liability under the Securities Act of 1933 to any purchaser:
- (A) Each prospectus filed by the registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in this registration statement; and
  - (B) Each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5), or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii), or (x) for the purpose of providing the information required by Section 10(a) of the Securities Act of 1933 shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof. *Provided, however*, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such effective date, supersede or modify any statement that was made in the registration statement or prospectus that was part of this Registration Statement or made in any such document immediately prior to such effective date.
- (5) That, for the purpose of determining liability of the registrant under the Securities Act of 1933 to any purchaser in the initial distribution of the securities:

The undersigned registrant undertakes that in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:

- (i) Any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424;
- (ii) Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant;
- (iii) The portion of any other free writing prospectus relating to the offering containing material information about the undersigned registrant or its securities provided by or on behalf of the undersigned registrant; and
- (iv) Any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.

*Item 512(b) of Regulation S-K.* The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act of 1933, each filing of the registrant's annual report pursuant to Section 13(a) or Section 15(d) of the Securities Exchange Act of 1934, as amended (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Securities Exchange Act of 1934) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.

*Item 512(h) of Regulation S-K.* Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Act, and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Act and will be governed by the final adjudication of such issue.

*Item 512(i) of Regulation S-K.* The undersigned registrant hereby undertakes that:

- (i) For purposes of determining any liability under the Securities Act of 1933, the information omitted from the form of prospectus filed as part of this registration statement in reliance upon Rule 430A and contained in a form of prospectus filed by the registrant pursuant to Rule 424(b) (1) or (4) or 497(h) under the Securities Act shall be deemed to be part of this registration statement as of the time it was declared effective.
- (ii) For the purpose of determining any liability under the Securities Act of 1933, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.

## SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the city of Pasadena, state of California, on March 13, 2015.

### ARROWHEAD RESEARCH CORPORATION

By: /s/ Christopher Anzalone

Christopher Anzalone  
Chief Executive Officer

## POWER OF ATTORNEY

Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed by the following persons in the capacities and on the dates indicated, each of whom also constitutes and appoints Christopher Anzalone and Kenneth A. Myszkowski, and each of them singly, his or her true and lawful attorney-in-fact and agent, for him or her, with full power of substitution and resubstitution, for him or her and in his or her name, place and stead, in any and all capacities, to sign any and all amendments to this Registration Statement, and to file the same and all exhibits thereto and any other documents in connection therewith with the Securities and Exchange Commission, granting unto each attorney-in-fact and agent full power and authority to do and perform each and every act and thing requisite and necessary to be done, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that each attorney-in-fact and agent or his or her substitute or substitutes may lawfully do or cause to be done by virtue hereof.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Christopher Anzalone</u> Christopher Anzalone	Chief Executive Officer and President and Director (Principal Executive Officer)	March 13, 2015
<u>/s/ Kenneth A. Myszkowski</u> Kenneth A. Myszkowski	Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer)	March 13, 2015
<u>/s/ Douglass Given</u> Douglass Given	Director, Chairman of the Board of Directors	March 13, 2015
<u>/s/ Charles P. McKenney</u> Charles P. McKenney	Director	March 13, 2015
<u>/s/ Mauro Ferrari</u> Mauro Ferrari	Director	March 13, 2015
<u>/s/ Edward W. Frykman</u> Edward W. Frykman	Director	March 13, 2015
<u>/s/ Michael S. Perry</u> Michael S. Perry	Director	March 13, 2015

## EXHIBIT INDEX

<u>Exhibit No.</u>	<u>Description</u>
4.1	Form of Common Stock Certificate (1)
4.2	Certificate of Incorporation of InterActive Group, Inc., a Delaware corporation, dated December 15, 2000 (2)
4.3	Certificate of Amendment to Certificate of Incorporation of InterActive Group, Inc. (effecting, among other things a change in the corporation's name to "Arrowhead Research Corporation"), filed with the Secretary of the State of Delaware on January 12, 2004 (3)
4.4	Certificate of Amendment to Certificate of Incorporation of Arrowhead Research Corporation, dated January 25, 2005 (4)
4.5	Certificate of Amendment to Certificate of Incorporation of Arrowhead Research Corporation, dated October 13, 2009 (5)
4.6	Certificate of Amendment to Certificate of Incorporation of Arrowhead Research Corporation, dated November 17, 2011 (6)
4.7	Bylaws (2)
4.8	Amendment No. 1 to the Bylaws of Arrowhead Research Corporation (7)
5.1	Opinion of Gibson, Dunn & Crutcher LLP **
23.1	Consent of Rose, Snyder & Jacobs, the registrant's independent registered public accounting firm**
23.2	Consent of Gibson, Dunn & Crutcher LLP (included in legal opinion filed as Exhibit 5.1)**
24.1	Power of Attorney (included on signature page)**

\*\* Filed herewith.

- (1) Incorporated by reference from Amendment No. 2 to the Registration Statement on Form S-1, filed by the registrant on September 11, 2009.
- (2) Filed as an exhibit to the registrant's Definitive Information Statement on Schedule 14C, filed on December 22, 2000 and incorporated herein by reference.
- (3) Filed as an exhibit to the registrant's Definitive Information Statement on Schedule 14C, filed on December 22, 2003 and incorporated herein by reference.
- (4) Filed as an exhibit to the registrant's Quarterly Report on Form 10-QSB, filed on February 11, 2005 and incorporated herein by reference.
- (5) Filed as an exhibit to the registrant's Annual Report on Form 10-K, filed on December 22, 2009 and incorporated herein by reference.
- (6) Filed as an exhibit to the registrant's Current Report on Form 8-K, filed on November 17, 2011 and incorporated herein by reference.
- (7) Filed as an exhibit to the registrant's Current Report on Form 8-K, filed on April 27, 2010 and incorporated by reference herein.

GIBSON DUNN

Gibson, Dunn & Crutcher LLP  
555 Mission Street  
San Francisco, CA 94105-0921  
Tel 415.393.8200  
www.gibsondunn.com

Client: 04695-00003

March 13, 2015

Arrowhead Research Corporation  
225 South Lake Avenue, Suite 1050  
Pasadena, CA 91101

Re: *Arrowhead Research Corporation*  
*Registration Statement on Form S-3*

Ladies and Gentlemen:

We have examined the Registration Statement on Form S-3 (the "Registration Statement") of Arrowhead Research Corporation, a Delaware corporation (the "Company"), filed with the Securities and Exchange Commission (the "Commission") pursuant to the Securities Act of 1933, as amended (the "Securities Act"), in connection with the offering by the Company of up to 3,299,323 shares of the Company's common stock, par value \$0.001 per share, (the "Shares").

In arriving at the opinion expressed below, we have examined originals, or copies certified or otherwise identified to our satisfaction as being true and complete copies of the originals, of the specimen Common Stock certificate and such other documents, corporate records, certificates of officers of the Company and of public officials and other instruments as we have deemed necessary or advisable to enable us to render the opinions set forth below. In our examination, we have assumed without independent investigation the genuineness of all signatures, the legal capacity and competency of all natural persons, the authenticity of all documents submitted to us as originals and the conformity to original documents of all documents submitted to us as copies.

Based upon the foregoing, and subject to the assumptions, exceptions, qualifications and limitations set forth herein, we are of the opinion that the Shares are validly issued, fully paid and non-assessable.

We consent to the filing of this opinion as an exhibit to the Registration Statement, and we further consent to the use of our name under the caption "Legal Matters" in the Registration Statement and the prospectus that forms a part thereof. In giving these consents, we do not thereby admit that we are within the category of persons whose consent is required under Section 7 of the Securities Act or the Rules and Regulations of the Commission.

March 13, 2015

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Very truly yours,

/S/ GIBSON DUNN & CRUTCHER LLP

**CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM**

We hereby consent to the incorporation by reference, in this Registration Statement on Form S-3 of our report dated November 24, 2014, with respect to the consolidated financial statements of Arrowhead Research Corporation and Subsidiaries appearing in the Company's Annual Report on Form 10-K for the year ended September 30, 2014, and to the reference of our Firm under the caption "Experts" in the Registration Statement.

/s/ Rose, Snyder & Jacobs LLP

Rose, Snyder & Jacobs LLP

Encino, California

March 12, 2015