

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

**Post-Effective Amendment No. 1
to
FORM S-3
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933**

ARROWHEAD RESEARCH CORPORATION

(Exact name of registrant as specified in its charter)

Delaware
(State of incorporation)

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

**201 South Lake Avenue, Suite 703
Pasadena, CA 91101
626-304-3400**

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

**Christopher Anzalone, Chief Executive Officer
Arrowhead Research Corporation
201 South Lake Avenue, Suite 703
Pasadena, CA 91101
626-304-3400**

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

Copies to:

**Ryan Murr
Goodwin Procter LLP
Three Embarcadero Center, 24 th Floor
San Francisco, CA 94111
(415) 733-6000**

Approximate date of commencement of proposed sale to the public: From time to time after this registration statement becomes effective, as determined by the registrant.

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 being 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. (Check one):

Large accelerated filer <input type="checkbox"/>	Accelerated filer <input type="checkbox"/>
Non-accelerated filer <input type="checkbox"/> (Do not check if a smaller reporting company)	Smaller reporting company <input checked="" type="checkbox"/>

Table of Contents

The information in this prospectus is not complete and may be changed. We may not sell these securities until the post-effective amendment to 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 June 1, 2010

Prospectus

\$50,000,000

Arrowhead Research Corporation

Common Stock

Warrants

This prospectus will allow us to issue, from time to time in one or more offerings,

- shares of our Common Stock, and
- warrants to purchase shares of our Common Stock.

The Common Stock and warrants may be offered and sold separately or together in one or more series of issuances, for an aggregate dollar amount of up to \$50,000,000. In this prospectus, we refer to the Common Stock and the warrants collectively as the “securities.”

We will provide the specific terms of these offerings and securities in one or more supplements to this prospectus. We may also authorize one or more free writing prospectuses to be provided to you in connection with these offerings. The prospectus supplement and any related free writing prospectus may also add, update or change information contained in this prospectus. You should carefully read this prospectus, the applicable prospectus supplement and any related free writing prospectus, as well as any documents incorporated by reference, before buying any of the securities being offered.

We may sell these securities directly to investors, through agents designated from time to time or to or through underwriters or dealers. For additional information on the methods of sale, you should refer to the section entitled “Plan of Distribution” in this prospectus. If any underwriters are involved in the sale of any securities with respect to which this prospectus is being delivered, the names of such underwriters and any applicable commissions or discounts will be set forth in a prospectus supplement. The price to the public of such securities and the net proceeds we expect to receive from such sale will also be set forth in a prospectus supplement.

The Company’s Common Stock is traded on the NASDAQ Capital Market under the symbol “ARWR”. On May 28, 2010, the closing sale price of our Common Stock on the NASDAQ Capital Market was \$1.34 per share. Our principal executive offices are located at 201 South Lake Avenue, Suite 703, Pasadena, California 91101, and our telephone number is (626) 304-3400.

Investing in our securities involves risks. You should carefully consider the [Risk Factors](#) beginning on page 2 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 _____, 2010

Table of Contents

Table of Contents

<u>ABOUT THIS PROSPECTUS</u>	(i)
<u>NOTE REGARDING FORWARD-LOOKING STATEMENTS</u>	(ii)
<u>PROSPECTUS SUMMARY</u>	1
<u>RISK FACTORS</u>	2
<u>USE OF PROCEEDS</u>	2
<u>PLAN OF DISTRIBUTION</u>	2
<u>DESCRIPTION OF SECURITIES TO BE REGISTERED</u>	4
<u>LEGAL MATTERS</u>	4
<u>EXPERTS</u>	5
<u>WHERE YOU CAN FIND ADDITIONAL INFORMATION</u>	5
<u>INFORMATION INCORPORATED BY REFERENCE</u>	5

[Table of Contents](#)

ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we filed with the Securities and Exchange Commission, or the SEC, utilizing a “shelf” registration process. Under this shelf registration process, we may offer from time to time any combination of the securities described in this prospectus up to a total dollar amount of \$50,000,000. This prospectus provides you with a general description of the securities we may offer. We also may authorize one or more free writing prospectuses to be provided to you that may contain material information relating to these offerings. This prospectus, together with applicable prospectus supplements and any related free writing prospectuses, includes all the material information relating to these offerings. We also may add, update or change, in the prospectus supplement and in any related free writing prospectus that we may authorize to be provided to you, any of the information contained in this prospectus or in the documents that we have incorporated by reference into this prospectus. We urge you to read carefully this prospectus, any applicable prospectus supplement and any related free writing prospectus, together with the information incorporated herein by reference as described under the section entitled “Where You Can Find Additional Information,” in this prospectus before buying any of the securities being offered.

THIS PROSPECTUS MAY NOT BE USED TO CONSUMMATE A SALE OF SECURITIES UNLESS IT IS ACCOMPANIED BY A PROSPECTUS SUPPLEMENT.

You should rely only on the information that we have provided or incorporated by reference in this prospectus, any applicable prospectus supplement and any related free writing prospectus that we may authorize to be provided to you. We have not authorized any other person to provide you with different information. No dealer, salesperson or other person is authorized to give any information or to represent anything not contained in this prospectus, any applicable prospectus supplement or any related free writing prospectus that we may authorize to be provided to you. You must not rely on any unauthorized information or representation. This prospectus, any applicable supplement to this prospectus or any related free writing prospectus does not constitute an offer to sell or the solicitation of an offer to buy any securities other than the registered securities to which they relate, nor does this prospectus, any applicable supplement to this prospectus or any related free writing prospectus constitute an offer to sell or the solicitation of an offer to buy securities in any jurisdiction to any person to whom it is unlawful to make such offer or solicitation in such jurisdiction.

You should assume that the information appearing in this prospectus, any applicable prospectus supplement or any related free writing prospectus is accurate only as of the date on the front of the document and that any information we have incorporated by reference is accurate only as of the date of the document incorporated by reference, regardless of the time of delivery of this prospectus, any applicable prospectus supplement or any related free writing prospectus, or any sale of a security. Our business, financial condition, results of operations and prospects may have changed since those dates.

This prospectus, any applicable prospectus supplement or any related free writing prospectus contains and incorporates by reference market data, industry statistics and other data that have been obtained from, or compiled from, information made available by third parties. We have not independently verified their data. This prospectus, any applicable prospectus supplement or any related free writing prospectus and the information incorporated herein by reference includes trademarks, service marks and trade names owned by us or other companies. All trademarks, service marks and trade names included or incorporated by reference into this prospectus, any applicable prospectus supplement or any related free writing prospectus are the property of their respective owners.

This prospectus contains summaries of certain provisions contained in some of the documents described herein, but reference is made to the actual documents for complete information. All of the summaries are qualified in their entirety by the actual documents. Copies of some of the documents referred to herein have been filed, will be filed or will be incorporated by reference as exhibits to the registration statement of which this prospectus is a part, and you may obtain copies of those documents as described below under the section entitled “Where You Can Find Additional Information.”

(i)

[Table of Contents](#)

NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus and the documents incorporated by reference into it contain forward-looking statements that involve risks and uncertainties. The statements contained or incorporated by reference in this prospectus that are not purely historical are forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended (the “**Securities Act**”) and Section 21E of the Securities Exchange Act of 1934, as amended (the “**Exchange Act**”). The Company has made these statements in reliance on the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. These forward-looking statements relate to future events or our future performance and include, but are not limited to; statements concerning our business strategy, future research and development projects, potential commercial revenues, capital requirements, new potential product introductions, expansion plans and the Company’s funding requirements. Other statements contained in our filings that are not historical facts are also forward-looking statements. The Company has tried, wherever possible, to identify forward-looking statements by terminology such as “may,” “will,” “could,” “should,” “expects,” “anticipates,” “intends,” “plans,” “believes,” “seeks,” “estimates” and other comparable terminology.

Forward-looking statements are not guarantees of future performance and are subject to various risks, uncertainties and assumptions that are difficult to predict. Actual results may differ materially from those anticipated in these forward-looking statements as a result of a number of factors, including the risk factors described below in this prospectus and in our periodic filings with the SEC, incorporated by reference or included in this prospectus. All forward-looking statements contained in this prospectus are made only as of the date on the prospectus cover. We expressly disclaim any intent to update or alter our forward-looking statements, whether as a result of new information, future events or otherwise. Before deciding to buy or sell our securities, you should be aware that the occurrence of the events described in these risk factors could harm our business, operating results and financial condition, which consequences could materially diminish the trading price of our securities and/or their value.

(ii)

[Table of Contents](#)

PROSPECTUS SUMMARY

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.

Our Business

Arrowhead is a development-stage nanotechnology holding company that seeks to create stockholder value through the creation and operation of nanotechnology companies. Arrowhead currently owns two majority-owned operating subsidiaries, Unidym, Inc. (“**Unidym**”) and Calando Pharmaceuticals, Inc. (“**Calando**”) and has minority investments in two early-stage nanotechnology companies, Nanotope, Inc. and Leonardo Biosystems, Inc. Arrowhead’s mission is to build value through the identification, development and commercialization of nanotechnology-related products and applications. Arrowhead is active in the operation of its subsidiaries, providing key management to the subsidiaries. The Company is currently focused primarily on its two lead subsidiaries, Unidym, a leader in the use of carbon nanotubes for electronic applications, and Calando, a clinical-stage siRNA delivery company. Arrowhead’s business plan includes adding to its portfolio through selective acquisition and formation of new companies, as capital resources allow.

Our common stock is quoted on the NASDAQ Capital Market under the symbol “ARWR”.

The Securities We May Offer

This prospectus relates to the sale and issuance of an indeterminate number of shares of our Common Stock and warrants to purchase shares of our Common Stock. The Common Stock and warrants may be offered and sold separately or together in one or more series of issuances, for an aggregate dollar amount of up to \$50,000,000. We may sell these securities directly to investors, through agents designated from time to time or to or through underwriters or dealers. Each time we offer securities under this prospectus, we will provide, in one or more supplements to this prospectus, the specific terms of these offerings and securities, including, to the extent applicable, designation or classification; aggregate offering price; voting or other rights, if any; exercise prices, if any; and important United States federal income tax considerations. We may also authorize one or more free writing prospectuses to be provided to you in connection with these offerings.

We, and our agents or underwriters, reserve the right to accept or reject all or part of any proposed purchase of securities. If we do offer securities to or through agents or underwriters, we will include in the applicable prospectus supplement: the names of those agents or underwriters; applicable fees, discounts and commissions to be paid to them; details regarding over-allotment options, if any; and the net proceeds to us.

Corporate Information

Our executive offices are located at 201 South Lake Avenue, Suite 703 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 Additional Information” on page 5 and “Information Incorporated by Reference” on page 5.

[Table of Contents](#)

RISK FACTORS

Before making an investment decision, you should carefully consider the risks described under "Risk Factors" in the applicable prospectus supplement, together with all of the other information appearing in this prospectus or incorporated by reference into this prospectus and any applicable prospectus supplement, in light of your particular investment objectives and financial circumstances. 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 above.

USE OF PROCEEDS

Unless we provide otherwise in a supplement to this prospectus or in any related free-writing prospectus, we intend to use the net proceeds from the sale of our securities, and, upon exercise of the warrants issued pursuant hereto, for general corporate purposes, which may include one or more of the following:

- working capital;
- research and clinical development activities;
- potential future acquisitions of companies and/or technologies; and
- capital expenditures.

Our management will have broad discretion in the allocation of the net proceeds of any offering. Although currently we have no specific agreements, commitments or understandings with respect to any acquisition, we evaluate acquisition opportunities and engage in related discussions with other companies from time to time.

Pending such uses, we intend to invest the net proceeds in short-term, investment grade, interest-bearing securities.

PLAN OF DISTRIBUTION

We may sell the securities covered by this prospectus from time to time in one or more offerings. Registration of the securities covered by this prospectus does not mean, however, that those securities will necessarily be offered or sold.

We may sell our securities from time to time in any manner permitted by the Securities Act, including any one or more of the following ways:

- directly to investors;
- to investors through agents; and/or
- through one or more underwriters, dealers, or agents in a public offering and sale by them.

Any underwritten offering may be on a best efforts or a firm commitment basis. We may also make direct sales through subscription rights distributed to our stockholders on a pro rata basis, which may or may not be transferable. In any distribution of subscription rights to stockholders, if all of the underlying securities are not subscribed for, we may then sell the unsubscribed securities directly to third parties or may engage the services of one or more underwriters, dealers or agents, including standby underwriters, to sell the unsubscribed securities to third parties.

Table of Contents

The distribution of the securities may be effected from time to time in one or more transactions:

- at a fixed price or prices, which may be changed;
- at market prices prevailing at the time of sale;
- at prices related to such prevailing market prices; or
- at negotiated prices.

Any of the prices may represent a discount from prevailing market prices.

A prospectus supplement or supplements will describe the terms of the offering of the securities, including:

- the name or names of the underwriters, if any;
- the purchase price of the securities and the proceeds we will receive from the sale;
- any over-allotment options under which underwriters may purchase additional securities from us;
- any agency fees or underwriting discounts and other items constituting agents' or underwriters' compensation;
- any public offering price;
- any discounts or concessions allowed or reallocated or paid to dealers; and
- any securities exchange or market on which the securities may be listed.

Only underwriters named in the prospectus supplement will be underwriters of the securities offered by the prospectus supplement.

If underwriters are used in the sale, they will acquire the securities for their own account and may resell the securities from time to time in one or more transactions at a fixed public offering price or at varying prices determined at the time of sale. The obligations of the underwriters to purchase the securities will be subject to the conditions set forth in the applicable underwriting or other agreement. We may offer the securities to the public through underwriting syndicates represented by managing underwriters or by underwriters without a syndicate. Subject to certain conditions, the underwriters will be obligated to purchase all of the securities offered by the prospectus supplement, other than securities covered by any over-allotment option. Any public offering price and any discounts or concessions allowed or reallocated or paid to underwriters, dealers or agents may change from time to time. We may use underwriters with whom we have a material relationship. We will describe in the prospectus supplement, naming the underwriter, the nature of any such relationship.

We may sell securities directly or through agents we designate from time to time. We will name any agent involved in the offering and sale of securities and we will describe any commissions we will pay the agent in the prospectus supplement. Unless the prospectus supplement states otherwise, our agent will act on a best-efforts basis for the period of its appointment.

We may authorize agents or underwriters to solicit offers by certain types of institutional investors to purchase securities from us at the public offering price set forth in the prospectus supplement pursuant to delayed delivery contracts providing for payment and delivery on a specified date in the future. We will describe the conditions to these contracts and the commissions we must pay for solicitation of these contracts in the prospectus supplement.

In the sale of the securities, underwriters or agents may receive compensation from us or from purchasers of the securities, for whom they may act as agents, in the form of discounts, concessions or commissions. Underwriters may sell the securities to or through dealers, and such dealers may receive compensation in the form of discounts, concessions or commissions from the underwriters and/or commissions from the purchasers for whom they may act as agents. Underwriters, dealers and agents that participate in the distribution of the securities may be deemed to be underwriters under the Securities Act of 1933, and any discounts or commissions they receive from us and any profit on the resale of securities they realize may be deemed to be underwriting discounts and commissions under the Securities Act.

We may provide agents, dealers and underwriters with indemnification against civil liabilities related to this offering, including liabilities under the Securities Act, or contribution with respect to payments that the agents or underwriters may make with respect to these liabilities. Agents and underwriters may engage in transactions with, or perform services for, us in the ordinary course of business.

Table of Contents

All securities we may offer, other than common stock, will be new issues of securities with no established trading market. Any underwriters may make a market in these securities, but will not be obligated to do so and may discontinue any market making at any time without notice. We cannot guarantee the liquidity of the trading markets for any securities.

Any underwriter may engage in overallotment, stabilizing transactions, short covering transactions and penalty bids in accordance with Regulation M under the Exchange Act. Overallotment involves sales in excess of the offering size, which create a short position. Stabilizing transactions permit bids to purchase the underlying security so long as the stabilizing bids do not exceed a specified maximum. Short covering transactions involve purchases of the securities in the open market after the distribution is completed to cover short positions. Penalty bids permit the underwriters to reclaim a selling concession from a dealer when the securities originally sold by the dealer are purchased in a stabilizing or covering transaction to cover short positions. Those activities may cause the price of the securities to be higher than it would otherwise be. If commenced, the underwriters may discontinue any of the activities at any time.

Any underwriters who are qualified market makers on The NASDAQ Capital Market may engage in passive market making transactions in the securities on The NASDAQ Capital Market in accordance with Regulation M, during the business day prior to the pricing of the offering, before the commencement of offers or sales of the securities. Passive market makers must comply with applicable volume and price limitations and must be identified as passive market makers. In general, a passive market maker must display its bid at a price not in excess of the highest independent bid for such security; if all independent bids are lowered below the passive market maker's bid, however, the passive market maker's bid must then be lowered when certain purchase limits are exceeded. Passive market making may stabilize the market price of the securities at a level above that which might otherwise prevail in the open market and, if commenced, may be discontinued at any time.

In compliance with guidelines of the Financial Industry Regulatory Authority, or FINRA, the maximum consideration or discount to be received by any FINRA member or independent broker dealer may not exceed 8% of the aggregate amount of the securities offered pursuant to this prospectus and any applicable prospectus supplement.

DESCRIPTION OF SECURITIES TO BE REGISTERED

We may offer shares of our common stock and warrants to purchase common stock with a total value of up to \$50,000,000 from time to time under this prospectus at prices and on terms to be determined by market conditions at the time of offering. Below is a brief summary of the types of securities that we may offer hereunder from time to time. Each time we offer a type or series of securities, we will provide a prospectus supplement that will describe the specific amounts, prices and other important terms of the securities.

Common Stock. We may issue shares of our common stock from time to time. Holders of our common stock are entitled to one vote per share for the election of directors and on all other matters that require stockholder approval. Subject to any preferential rights of any outstanding preferred stock, in the event of our liquidation, dissolution or winding up, holders of our common stock are entitled to share ratably in the assets remaining after payment of liabilities and the liquidation preferences of any outstanding preferred stock. Our common stock does not carry any redemption rights or any preemptive rights enabling a holder to subscribe for, or receive shares of, any class of our common stock or any other securities convertible into shares of any class of our common stock.

Warrants. We may issue warrants for the purchase of common stock in one or more series, from time to time. We may issue warrants independently or together with common stock and the warrants may be attached to or separate from those securities. If we issue warrants, they will be evidenced by warrant agreements or warrant certificates issued under one or more warrant agreements, which are contracts between us and an agent for the holders of the warrants. We urge you to read the prospectus supplement related to any series of warrants we may offer, as well as the complete warrant agreement and warrant certificate that contain the terms of the warrants. If we issue warrants, forms of warrant agreements and warrant certificates relating to warrants for the purchase of common stock will be incorporated by reference into the registration statement of which this prospectus is a part from reports we would subsequently file with the SEC.

LEGAL MATTERS

Unless otherwise indicated in the applicable prospectus supplement, certain legal matters relating to the validity of the securities offered by this prospectus will be passed upon for us by Goodwin Procter LLP.

Table of Contents

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, 2009, have been so incorporated in reliance on the report dated December 21, 2009 of Rose, Snyder & Jacobs, a corporation of Certified Public Accountants, given on the authority of said firms as experts in auditing and accounting.

WHERE YOU CAN FIND ADDITIONAL INFORMATION

The Company files annual, quarterly and special reports, proxy statements and other information with the SEC. You may read and copy any document filed by the Company at the SEC's Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information on the public reference room. The Company's filings with the SEC are also available to the public at the SEC's Internet web site at <http://www.sec.gov>. You may also read and copy this information at the National Association of Securities Dealers, Inc., 1735 K Street, N.W., Washington, D.C. 20006.

The Company has filed a registration statement, of which this prospectus is a part, covering the securities offered hereby. As allowed by Commission rules, this prospectus does not include all of the information contained in the registration statement and the included exhibits, financial statements and schedules. You are referred to the registration statement, the included exhibits, financial statements and schedules for further information. This prospectus is qualified in its entirety by such other information.

INFORMATION INCORPORATED BY REFERENCE

The Commission allows us to "incorporate by reference" information in documents we file with them, which means that we can disclose important information to you by referring you to those documents. The information we incorporate by reference is considered to be part of this prospectus and information that we file later with the Commission automatically will update and supersede such information. We hereby incorporate by reference the documents listed below and any future filings we make with the Securities and Exchange Commission under Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, prior to the termination of the offering of the securities covered by this prospectus:

1. The Company's Annual Report on Form 10-K for the fiscal year ended September 30, 2009, filed with the SEC on December 22, 2009.
2. The Company's Current Reports on Form 8-K, filed with the SEC on October 6, 2009, December 17, 2009, December 28, 2009, February 4, 2010, March 19, 2010, March 23, 2010, April 19, 2010, April 27, 2010 and May 28, 2010.
3. The Company's Quarterly Report on Form 10-Q for the quarterly period ended March 31, 2010, filed with the SEC on May 13, 2010 and the Company's Quarterly Report on Form 10-Q for the quarterly period ended December 31, 2009, filed with the SEC on February 11, 2010.
4. The description of the Common Stock contained in the Company's Information Statement on Schedule 14-C, filed on December 22, 2000.

The Company will provide, without charge, to each person, including any beneficial owner, to whom a copy of this prospectus is delivered, upon such person's written or oral request, a copy of any and all of the information incorporated by reference in this prospectus, other than exhibits to such documents, unless such exhibits are specifically incorporated by reference into the information that this prospectus incorporates. Requests should be directed to the Secretary at Arrowhead Research Corporation, 201 South Lake Avenue, Suite 703, Pasadena, California 91101; telephone: (626) 304-3400.

[Table of Contents](#)

ARROWHEAD RESEARCH CORPORATION

PROSPECTUS

_____, 2010

Table of Contents

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	\$ 1,535.00
Accountants Fees and Expenses	\$ 1,000.00
Legal Fees and Expenses	\$10,000.00
Printing Expenses	\$ 1,000.00
Miscellaneous	\$ 5,000.00
Total	<u>\$18,535.00</u>

The amounts set forth above, 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.

We have entered into indemnification agreements with each of our directors and our executive officers. These agreements provide that we will indemnify each of our directors and executive officers to the fullest extent permitted by Delaware law. We will advance expenses, including attorneys' fees, judgments, fines and settlement amounts, to each indemnified director and executive officer in connection with any proceeding in which indemnification is available and we will indemnify our directors and officers for any action or proceeding arising out of that person's services as an officer or director brought on behalf of the Company or in furtherance of our rights.

We also maintain general liability insurance which covers certain liabilities of our directors and officers arising out of claims based on acts or omissions in their capacities as directors or officers, including liabilities under the Securities Act.

Item 16. Exhibits.

See Exhibit Index set forth on page II-5 to this Registration Statement.

Item 17. Undertakings.

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;

Table of Contents

(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.

(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 (1)(i), (1)(ii) and (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.

Table of Contents

(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.

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.

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 Securities Act and will be governed by the final adjudication of such issue.

[Table of Contents](#)

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, 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 Post-Effective Amendment No. 1 to the Registration Statement on Form S-3 to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Pasadena, State of California, on June 1, 2010.

ARROWHEAD RESEARCH CORPORATION

By: /S/ CHRISTOPHER ANZALONE
Chief Executive Officer

Pursuant to the requirements of the Securities Act of 1933, as amended, this Post-Effective Amendment No. 1 to the Registration Statement on Form S-3 has been signed by the following persons in the capacities and on the dates indicated.

<u>Signature</u>	<u>Office(s)</u>	<u>Date</u>
<u>/S/ CHRISTOPHER ANZALONE</u> Christopher Anzalone	Chief Executive Officer (Principal Executive Officer)	June 1, 2010
<u>/S/ KENNETH A. MYSZKOWSKI</u> Kenneth A. Myszkowski	Chief Financial Officer (Principal Financial and Accounting Officer)	June 1, 2010
* R. Bruce Stewart	Executive Chairman & Director	June 1, 2010
* Edward W. Frykman	Director	June 1, 2010
* Charles P. McKenney	Director	June 1, 2010
* LeRoy T. Rahn	Director	June 1, 2010
*By: <u>/S/ CHRISTOPHER ANZALONE</u> Christopher Anzalone Attorney-in-fact		

[Table of Contents](#)

EXHIBIT INDEX

<u>Exhibit No.</u>	<u>Description</u>
1.1	Form of Underwriting Agreement *
3.1	Certificate of Incorporation of Interactive, Inc., a Delaware corporation, dated December 15, 2000 (1)
3.2	Certificate of Amendment of Certificate of Incorporation of InterActive Group, Inc., dated December 12, 2003 (effecting, among other things, a change in the registrant's name to "Arrowhead Research Corporation") (2)
3.3	Certificate of Amendment to Certificate of Incorporation of Arrowhead Research Corporation, dated January 25, 2005 (3)
3.4	Certificate of Amendment to Certificate of Incorporation of Arrowhead Research Corporation, dated October 13, 2009. (4)
3.5	Bylaws (1)
3.6	Amendment No. 1 to the Bylaws of Arrowhead Research Corporation. (5)
4.1	Form of Common Stock Certificate (6)
4.2	Form of Warrant to Purchase Common Stock*
5.1	Opinion of Goodwin Procter LLP+
23.1	Consent of Rose, Snyder & Jacobs, the registrant's independent registered public accounting firm**
23.2	Consent of Goodwin Procter LLP (included in legal opinion filed as Exhibit 5.1)+
24.1	Power of Attorney +

* To be filed by amendment or as an exhibit to a Current Report on Form 8-K and incorporated herein by reference.

** Filed herewith.

+ Previously filed

(1) Incorporated by reference from Schedule 14C filed by registrant on December 22, 2000.

(2) Incorporated by reference from Schedule 14C filed by registrant on December 22, 2003.

(3) Incorporated by reference from Form 10-QSB for the quarter ended December 31, 2004, filed by registrant on February 11, 2005.

(4) Incorporated by reference from the Annual Report on Form 10-K, filed by the registrant on December 22, 2009.

(5) Incorporated by reference from the Current Report on Form 8-K, filed by the registrant on April 27, 2010.

(6) Incorporated by referenced from Amendment No. 2 to the Registration Statement on Form S-1, filed by the registrant on September 11, 2009.

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference, in this Post-Effective Amendment No. 1 to Form S-3 relating to Registration Statement No. 333-148218, of our report dated December 21, 2009, 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, 2009, and to the reference to our Firm under the caption "Experts" in the Prospectus.

/S/ ROSE, SNYDER & JACOBS

Rose, Snyder & Jacobs

A Corporation of Certified Public Accountants

Encino, California

May 28, 2010