

ARROWHEAD RESEARCH CORP

Form S-3/A

September 13, 2004

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As filed with the Securities and Exchange Commission on September 10, 2004

File No. 333-113065

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**UNITED STATES**  
**SECURITIES AND EXCHANGE COMMISSION**

Washington, DC 20549

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**AMENDMENT NO. 1 TO**  
**FORM S-3**  
**REGISTRATION STATEMENT**  
*UNDER THE*  
*SECURITIES ACT OF 1933*

**ARROWHEAD RESEARCH CORPORATION**

(Name of small business issuer in its charter)

**Delaware**  
(State of incorporation)

**46-0408024**  
(I.R.S. Employer Identification No.)

**1118 East Green Street**  
**Pasadena, California 91106**

**(626) 792-5549**

(Address, including zip code, and telephone number,

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including area code, of Registrant's principal executive offices)

*Copies of communications sent to:*

**R. Bruce Stewart, President**

**Rachael A. Simonoff, Esq.**

**ARROWHEAD RESEARCH CORPORATION**

**GUTH|CHRISTOPHER LLP**

**1118 East Green Street**

**10866 Wilshire Boulevard, Suite 1250**

**Pasadena, California 91106**

**Los Angeles, CA 90024**

**(626) 792-5549**

**(310) 234-6920**

(Name and address of agent for service)

**Approximate date of commencement of proposed sale to the public:** From time to time after the effective date of the Registration Statement, as determined by the Registrant.

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

If the only 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. x

If this form is filed 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 delivery of the prospectus is expected to be made pursuant to Rule 434, please check the following box. "

**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 or until this registration statement shall become effective on such date as the 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.**

*PROSPECTUS (Subject to Completion)*

*dated September 10, 2004*

# **ARROWHEAD RESEARCH CORPORATION**

**Up to 26,899,098 shares of Common Stock**

**and**

**Warrants to purchase up to 13,837,748 shares of Common Stock**

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This prospectus covers the sale of shares of the Common Stock, \$.001 par value (the "Common Stock") of Arrowhead Research Corporation, a Delaware corporation (the "Company"), and Warrants to purchase Common Stock, at the price of \$1.50 per share (the "Warrants"), by the selling security holders identified in this prospectus, (collectively with any holder's transferee, pledgee, donee or successor, the "Selling Security Holders"). This prospectus covers the sale by the Selling Security Holders of up to 13,061,350 shares of issued and outstanding Common Stock, 13,837,748 shares of Common Stock issuable upon exercise of the Warrants, as well as Warrants to purchase up to an aggregate of 13,837,748 shares of Common Stock.

The Company will not receive any proceeds from the sale by the Selling Security Holders of the Common Stock, Warrants, or Common Stock issuable upon exercise of the Warrants, except for the \$1.50 payable to the Company upon exercise of the Warrants.

The Company's Common Stock and Warrants are traded on The Nasdaq SmallCap Market and under the symbols ARWR, and ARWRW, respectively. On September 9, 2004, the closing sale price of our Common Stock on The Nasdaq SmallCap Market was \$5.45 per share and the closing sale price of our Warrants on The Nasdaq SmallCap Market was \$3.75 per warrant. Our principal executive offices are located at 1118 East Green Street, Pasadena, California 91106, and our telephone number is (626) 792- 5549.

**Investing in our securities involves risks. You should carefully consider the risk factors beginning on page 4 of this prospectus before you make an investment in our securities.**

Neither the Securities and Exchange Commission nor any state securities commission has approve or disapproved 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 \_\_\_\_\_, 2004

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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 More Information** for more information, page 14. 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 and the documents incorporated by reference into it contain forward-looking statements that involve risks and uncertainties. The Company has made these statements in reliance on the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. The Company's 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 terms.

Forward-looking statements are not guarantees of future performance and are subject to various risks, uncertainties and assumptions that are difficult to predict. Therefore, actual results may differ materially from those expressed in forward-looking statements. They can be affected by many factors, including, those discussed under the caption **Risk Factors** beginning on page 4 of this prospectus and under the caption

**Management's Discussion and Analysis of Financial Condition and Plan of Operations** on page 14 of our Quarterly Report on Form 10-QSB for the quarter ended June 30, 2004, which is incorporated by reference into this prospectus. Forward-looking statements are based on information presently available to management, and the Company does not assume any duty to update forward-looking statements.

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### **SUMMARY**

*Unless otherwise noted, (1) the term **Arrowhead Research** refers to Arrowhead Research Corporation, a Delaware corporation and 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, (3) the term **ARC** refers to Arrowhead Research Corporation, a privately-held California corporation with which Arrowhead Research consummated a stock exchange transaction in January 2004, and (4) the terms **Common Stock** and **stockholder(s)** refer to Arrowhead Research's common stock and the holders of that stock, respectively.*

### **Overview**

Arrowhead Research is a development-stage nanotechnology company structured to bring together a diverse and innovative mix of technologies in the areas of healthcare, semiconductors and manufacturing processes, a broad suite of intellectual property, and some of the most respected minds in this dynamic field. Nanotechnology generally refers to the investigation and manipulation of matter at the atomic, molecular, or macromolecular levels.

The Company was originally incorporated in South Dakota in 1989, and was reincorporated in Delaware in 2000. Arrowhead Research consummated a stock exchange transaction on January 12, 2004 with the owners of ARC, referred to as the **Stock Exchange**. In the **Stock Exchange**, the owners of ARC acquired Common Stock of the Company, and the Company acquired 100% of the issued and outstanding stock of ARC, with ARC becoming a wholly-owned subsidiary of the Company. After the **Stock Exchange**, the owners of ARC owned approximately 89% of the Common Stock. The Company's principal executive offices are located at 1118 East Green Street, Pasadena, California 91106, and its telephone number is (626) 792-5549.

### **Strategy**

Upon consummation of the **Stock Exchange**, all of the officers and directors of the Company prior to that transaction were replaced by designees of the former owners of ARC. The Company's new management team terminated the Company's prior business activities and adopted as its primary business objective: to commercialize pioneering, breakthrough products in nanotechnology. At this time, Arrowhead is a development-stage company, and its business model is based on three strategic components:

Arrowhead funds newly-formed and existing entities that are engaged in the development and commercialization of nanoscale materials, devices, and systems. In return for early-stage financing, Arrowhead obtains a majority economic interest in as well as strategic control over these entities.

Arrowhead funds nanoscience research and development at universities. In return for funding, Arrowhead obtains exclusive rights to license and commercialize technologies that may be generated through the funded research.

Arrowhead seeks to leverage other valuable nanotechnology through licensing and sub-licensing arrangements with third parties.

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Arrowhead's business model is designed to provide its subsidiaries and sponsored scientists with financial, administrative, corporate and strategic resources. The Company believes that this business model will enable each management and research team to maintain focus on specific technologies and specific markets, increasing the likelihood of successful technological development and commercialization. We expect that additional advantages include, among others, the following:

Arrowhead's management and scientific advisors are positioned to identify, and potentially finance, efforts to commercialize products with the most immediate market potential while acquiring intellectual property rights to products with more long term potential.



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Arrowhead, its subsidiaries and sponsored scientists can leverage technology, know-how, and intellectual property generated by others within the Arrowhead family of companies or developed in sponsored research projects.

As a public company, Arrowhead can access the public markets for the purpose of raising capital and provide meaningful incentives in the form of stock options to attract the most talented managers and scientists.

Arrowhead maintains a great deal of flexibility in financing different research and commercial projects. While Arrowhead has the ability to make additional capital contributions, it may choose to forfeit shares in an entity in lieu of making additional cash investments. Arrowhead can also terminate its sponsored research agreements at any time upon written notice.

Arrowhead will have a financial stake in a variety of different nanoscale materials, devices, and systems that could impact diverse markets. As such, the Company is positioned to capture value from the general trend toward miniaturization in coming years, regardless of whether specific technologies succeed or fail.

## **Recent Events**

### **Acquisitions and New Ventures**

On April 20, 2004, the Company formed Aonex Technologies, Inc. in association with Dr. Harry Atwater, and members of his research team at California Institute of Technology ( Caltech ). Aonex research is directed toward commercializing a method for manufacturing semiconductor nanomaterials. If developed, this process could reduce manufacturing costs and improve performance for select device applications including LEDs, high frequency power amplifiers, and high-efficiency solar cells. The Company owns 80 percent of the outstanding voting stock of Aonex and maintains the right to appoint a majority of the Board of Directors. The Company provided \$2 million in initial capital to Aonex and may contribute up to an additional \$3 million over a two year period, as certain milestones in the development of the business are met. If Aonex meets the milestones, and Arrowhead elects not to provide additional capital, Arrowhead would forfeit a proportionate percentage of stock.

On June 4, 2004, the Company acquired approximately 62% of the outstanding voting stock, and the right to appoint a majority of the Board of Directors, of Insert Therapeutics, Inc., a Pasadena-based company. Insert Therapeutics has been in existence since 2000. Insert Therapeutics is currently expanding and leveraging its platform technology, Cyclosert, through an internal small-molecule drug development program and a gene-therapy collaboration with San Diego-based Canji, Inc., a subsidiary of Schering-Plough, and has received grants in both areas from the National Cancer Institute. Insert Therapeutics has designed a class of nanoscale cyclodextrin polymers that incorporate properties for intracellular systemic delivery of a broad range of therapeutics. These polymers can be designed to fit the size of the molecule or drug to be delivered. Cyclosert polymers have been synthesized at molecular weights ranging up to 150 kD, allowing for systemic drug delivery with the potential to slow renal clearance, enhance circulation time and improve passive accumulation of active drug at the target tissue. Insert Therapeutics has completed testing of camptothecin-Cyclosert-conjugate in tissue culture and small-scale animal studies and is negotiating to manufacture conjugate in large quantities for larger-scale animal studies. The Company provided \$1 million in initial capital to Insert Therapeutics and may contribute up to an additional \$4 million over time, as certain milestones in the development of the business are met. If Insert Therapeutics meets the milestones, and Arrowhead elects not to provide additional capital, Arrowhead would forfeit a proportionate percentage of stock.

On June 24, 2004, the Company invested \$2 million in a newly-formed entity named Nanotechnica, Inc. Nanotechnica has licensed the exclusive rights to a broad suite of intellectual property related to nanotechnology and microfluidics technology developed at Caltech in the labs of Michael Roukes and Yu-Chong Tai. The Company owns approximately 74% of Nanotechnica and maintains a right to appoint a majority to the Board of Directors. At this time, Nanotechnica is pursuing the development of several relatively simple, early-stage products such as scanning probe tips, pathogen sensors, and micro gas analyzers. Thus far, the scientific research team at Nanotechnica has developed prototypes for

scanned probe heads, as well as a prototype for an all-electronic, label-free

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pathogen sensor with sensitivity at the level of single bacterial cells / spores. In the future, Nanotechnica aims to establish capabilities for manufacturing a variety of nanoscale devices and systems and to develop more sophisticated products such as devices for real time imaging of cellular events.

### **Sponsored Research**

As of the date of this prospectus, the Company had entered into three arrangements with Caltech, and three corresponding individual professors on the faculty of Caltech, Charles Patrick Collier, Marc Bockrath and Harry Atwater, to finance research projects in various aspects of nanotechnology development. In each case, the researchers focus their efforts on achieving certain mutually agreed upon goals. Arrowhead monitors the progress of the research and works with the researchers in identifying patentable inventions. In exchange for funding the research, the Company has obtained the exclusive right to license and use commercially any technology developed as a result of the research. Both Professors Charles Patrick Collier and Marc W. Bockrath were members of the Company's Board of Directors from the time of the Stock Exchange through March 31, 2004 and currently serve on the Scientific Advisory Board.

## **DESCRIPTION OF THE WARRANTS**

The following sets forth the material terms of the Warrants.

|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Issuer                    | Arrowhead Research Corporation                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Exercise Price            | \$1.50 per share of Common Stock                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Amount Outstanding        | Warrants to purchase up to 13,837,748 shares of Common Stock.                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Expiration Date           | Warrants expire if not exercised by June 30, 2013                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Redemption by Company     | The Warrants are redeemable at the Company's option, in whole but not in part, on 30 days' prior written notice, at the price of \$0.001 per Warrant, provided that the closing bid price for a share of the Company's Common Stock has equaled or exceeded \$3.00 per share for 20 consecutive trading days within no more than 15 days prior to the date of the redemption notice. Holders will be required to exercise their Warrants within 30 days or accept the \$0.001 per Warrant redemption price. |
| Adjustments; Antidilution | All outstanding Warrants are subject to proportional downward adjustment to the warrant exercise price and proportional increase in the number of shares issuable upon exercise of any warrant based on a broad-based weighted average basis formula in the event of a dividend, distribution, stock split, combination, merger, asset sale or reorganization, in accordance with existing warrant terms.                                                                                                   |
| Registration Rights       | Under a registration rights agreement, we agreed to file with the SEC, the shelf registration statement of which this prospectus forms a part, for the resale of the Warrants and the shares of our Common Stock issuable upon exercise of the Warrants. We have agreed with the Warrantholders, subject to certain exceptions, to use our best efforts to keep the registration statement effective for no less than one year from the effective date of the registration statement.                       |

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|                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Trading         | The Warrants are listed for trading on The Nasdaq SmallCap Market. Under the federal securities laws, a Selling Securityholder is required to deliver a copy of this prospectus whenever making any public resale of the Warrants or the underlying Common Stock. Each Selling Securityholder should seek legal counsel if seeking to resell any Warrants or underlying Common Stock without the use of a prospectus pursuant to Rule 144, or another exemption from the registration provisions of the Federal securities laws. |
| Use of Proceeds | The Company will not receive any proceeds from the sale by the Selling Security Holders of the Warrants, or Common Stock issuable upon exercise of the Warrants, except for the \$1.50 payable to the Company upon exercise of the Warrants.                                                                                                                                                                                                                                                                                     |
| Risk Factors    | See Risk Factors and the other information included or incorporated by reference in this prospectus for a discussion of factors you should consider carefully before deciding to invest in the Warrants or shares of our Common Stock                                                                                                                                                                                                                                                                                            |

## **RISK FACTORS**

An investment in our Company is speculative in nature and involves a high degree of risk. We are a development stage company and we have limited historical operations. We urge you to consider our likelihood of success and prospects in light of the risks, expenses and difficulties frequently encountered by entities at our current stage of development. Along with the other information included in this Prospectus and in our other filings with the Securities and Exchange Commission, you should carefully consider the following risks and uncertainties, keeping in mind that they are not the only ones that affect us. Additional risks, which we do not presently consider material or of which we are not currently aware, may also adversely affect us.

Among other things, the following risk factors contain forward-looking statements that are based on certain assumptions about future risks and uncertainties. We believe that our assumptions are reasonable. Nonetheless, it is likely that at least some of these assumptions will not come true. Accordingly, our actual results will probably differ from the outcomes contained in any forward-looking statement, and those differences could be material. Factors that could cause or contribute to those differences include the ones discussed below, as well as those discussed elsewhere in this Prospectus and in our other filings with the Securities and Exchange Commission.

The first set of risk factors set forth below are the primary risks associated with our Stock. The second set of risk factors set forth below are the primary risks associated with our business.

### **CERTAIN RISK FACTORS RELATING TO OUR STOCK**

**Arrowhead's Common Stock price has fluctuated significantly since January 2004 and may continue to do so in the future.**

Because we are a developmental stage company, there are few objective metrics by which our progress may be measured. Consequently, we expect that the market price of our Common Stock will likely continue to fluctuate significantly. We do not expect to generate substantial revenue from the license or sale of our nanotechnology for several years, if at all. In the absence of product revenue as a measure of our operating performance, we anticipate that investors and market analysts will assess our performance by considering factors such as:

announcements of developments related to our business;

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developments in our strategic relationships with scientists within the nanotechnology field;

our ability to enter into or extend investigation phase, development phase, commercialization phase and other agreements with new and/or existing partners;

announcements regarding the status of any or all of our collaborations or products;

market perception and/or investor sentiment regarding nanotechnology as the next technological wave;

announcements regarding developments in the nanotechnology field in general;

the issuance of competitive patents or disallowance or loss of our patent rights; and

quarterly variations in our operating results.

We will not have control over many of these factors but expect that our stock price may be influenced by them. As a result, our stock price may be volatile and you may lose all or part of your investment.

**Additional General Economic Conditions.** The stock prices for many companies in the technology sector have experienced wide fluctuations that often have been unrelated to their operating performance. Such fluctuations may adversely affect the market price of our Common Stock.

**The market for purchases and sales of the Company's Common Stock and Warrants may be very limited, and the sale of a limited number of shares or Warrants could cause the price to fall sharply.**

Although the Common Stock and the Warrants are listed for trading on The Nasdaq SmallCap Market, currently, our securities are very thinly traded. In fact, the volume of trading has been extremely light, with many days when no shares are traded at all. Accordingly, it may be difficult to sell shares of the Common Stock or the Warrants quickly without significantly depressing the value of the stock. Unless we are successful in developing continued investor interest in our stock, sales of our stock could continue to result in major fluctuations in the price of the stock.

**Your interest in the Company may be substantially diluted as a result of the sale of additional securities to fund the Company's plan of operation.**

Our Certificate of Incorporation authorizes the issuance of an aggregate of 50,000,000 shares of Common Stock, on such terms and at such prices as the Board of Directors of the Company may determine. Of these shares, an aggregate of 13,630,046 shares of Common Stock have been issued, 13,837,748 are reserved for issuance upon exercise of outstanding Warrants, and 3,000,000 shares of Common Stock are reserved for issuance upon exercise of stock options that have been granted or may be granted under the Company's 2000 Stock Option Plan to employees, consultants and others expected to provide significant services to Arrowhead. Therefore, approximately 20,000,000 shares of Common Stock remain available for issuance by the Company to raise additional capital, in connection with prospective acquisitions or for other corporate purposes. Issuances of additional shares of Common Stock would result in dilution of the percentage interest in our Common Stock of

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all stockholders ratably, and might result in dilution in the tangible net book value of a share of our Common Stock, depending upon the price and other terms on which the additional shares are issued. In addition, the issuance of additional shares of Common Stock upon exercise of the Warrants, or even the prospect of such issuance, may be expected to have an effect on the market for the Common Stock, and may have an adverse impact on the price at which shares of Common Stock trade.

**If securities or industry analysts do not publish research reports about our business, or if they make adverse recommendations regarding an investment in our stock, our stock price and trading volume may decline.**

The trading market for our Common Stock will be influenced by the research and reports that industry or securities analysts publish about our business. We do not currently have and may never obtain research coverage by

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industry or securities analysts. If no industry or securities analysts commence coverage of our company, the trading price of our stock could be negatively impacted. In the event we obtain industry or security analyst coverage, if one or more of the analysts downgrade our stock or comment negatively on our prospects, our stock price would likely decline. If one of more of these analysts cease to cover us or our industry or fails to publish reports about our Company regularly, our Common Stock could lose visibility in the financial markets, which could also cause our stock price or trading volume to decline.

**The market price of the Common Stock may be adversely affected by the sale of shares or Warrants by the Company's management or founding stockholders, including the Selling stockholders listed in the Selling Securityholders' table of this prospectus.**

Sales of our Common Stock or our Warrants by our officers, directors, employees and founding stockholders could adversely and unpredictably affect the price of those securities. Additionally, the price of Arrowhead's Common Stock and Warrants could be affected even by the potential for sales by these persons. All of our directors and founding shareholders have executed a lock up letter agreement restricting their sales in the 90 day period following the time our Registration Statement is declared effective. However we cannot predict the effect that any future sales of our Common Stock or Warrants, or the potential for those sales, will have on our share price.

**We may be the subject of securities class action litigation due to future stock price volatility.**

In the past, when the market price of a stock has been volatile, holders of that stock have often initiated securities class action litigation against the company that issued the stock. If any of our stockholders brought a lawsuit against us, we could incur substantial costs defending the lawsuit. The lawsuit could also divert the time and attention of our management.

**We do not intend to declare dividends on our Common Stock.**

We will not distribute cash to our stockholders until and unless we can develop sufficient funds from operations to meet our ongoing needs and implement our business plan. The time frame for that is inherently unpredictable, and you should not plan on it occurring in the near future, if at all.

## **CERTAIN RISK FACTORS RELATING TO OUR BUSINESS**

At this time, Arrowhead is a development stage company and our primary business objective is to commercialize pioneering, breakthrough products in nanotechnology. To accomplish our business objectives, Arrowhead seeks to acquire interests in existing or newly-formed entities engaged in research and development projects for the commercialization of nanoscale materials, devices, and systems. Additionally, Arrowhead funds nanoscience research and development at universities.

**We are a development stage company and the Company's success is subject to the substantial risks inherent in the establishment of a new business venture.**



As a consequence of the change in the control of the Company on January 12, 2004, the Company changed management and all efforts that were previously initiated by prior management were abandoned. At that time, the Company's new management adopted a new plan of operations based on the strategy that was only recently formulated by the California corporation following its formation in May 2003. To date, implementation of this strategy is still in the development stage. We have acquired majority interests in only three subsidiary companies and have funded only three university research projects at Caltech. The Company's business and operations should be considered to be in the development stage and subject to all of the risks inherent in the establishment of a new business venture. Accordingly, the intended business and operations of the Company may not prove to be successful in the near future, if at all. Any future success that the Company might enjoy will depend upon many factors, many of which may be beyond the control of the Company, or which cannot be predicted at this time. The Company may encounter unforeseen difficulties or delays in the implementation of its plan of operations which could have a material adverse effect upon the financial condition, business prospects and operations of the Company and the value of an investment in the Company.

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**The Company has not generated revenue and its business model does not predict revenues in the foreseeable future.**

To date, the Company has not generated any revenue as a result of its current plan of operations. Moreover, given its strategy of financing new and unproven technology research, we do not expect to realize significant revenue from operations in the foreseeable future, if at all.

**We must overcome the many obstacles associated with integrating and operating varying business ventures to succeed.**

Arrowhead's model to integrate and oversee the strategic direction of various research and development projects presents many risks, including:

the difficulty of integrating operations and personnel; and

the diversion of our management's attention as a result of evaluating, negotiating and integrating acquisitions or new business ventures;

Generally, we provide administrative, operational and financial support to our subsidiaries. If we are unable to timely and efficiently design and integrate our administrative and operational functions, we may be unable to manage projects effectively, which could adversely affect our ability to meet our business objectives and the value of an investment in the Company could decline.

In addition, consummating acquisitions and taking advantage of strategic relationships could adversely impact our cash position, and dilute shareholder interests, for many reasons, including:

changes to our income to reflect the amortization of acquired intangible assets, including goodwill;

interest costs and debt service requirements for any debt incurred to fund our growth strategy; and

any issuance of securities to fund our operations or growth which dilutes or lessens the rights of current Stockholders.

To date, we have funded only three sponsored research projects at Caltech and acquired interest in only three subsidiaries, Aonex, Insert Therapeutics and Nanotechnica. We have had no significant experience in executing and implementing formations and acquisitions of subsidiaries and, if we are unable to do so effectively, the value of our stock could be negatively impacted.

**We face a difficult and uncertain economic environment in our industry, which could adversely affect our business and operations.**

The high-tech industry in general has experienced a significant economic downturn during the past several years. The poor economic environment has contributed to the decline in value of leading semiconductor and electronics industry players, thus limiting cash available for

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funding basic science research and development for new products and technologies. Economic conditions may not improve in the near term, or at all. Any further future downturn would likely have a material adverse impact on our business and ability to fund our continued investment in nanoscience research and development, or to eventually generate revenues.

**There are substantial risks inherent in attempting to commercialize new technological applications, and, as a result, we may not be able to successfully develop nanotechnology for commercial use.**

The Company finances research and development of nanotechnology, which is new and unproven. The Company's investigative scientists are at various stages of developing technology and such technology's commercial feasibility and acceptance is unknown. Scientific research and development requires significant financing and has a lengthy lifecycle. To date, the Company's research and development projects have not produced commercially viable applications, and may never do so. During our research and development process, the

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Company may experience technological issues that it may be unable to overcome. For example, our scientists must determine how to design and develop nanotechnology applications for potential products designed by third parties for use in cost-effective manufacturing processes. Because of these uncertainties, none of our potential applications may be successfully developed. If the Company is unable to successfully develop nanotechnology-applications for commercial use, we will be unable to generate revenue or build a sustainable or profitable business.

**We will need to achieve commercial acceptance of our applications to obtain revenue and achieve profitability.**

Even if our research and development yields technologically feasible applications, the Company may not successfully develop commercial products on a timely basis, if at all. If the Company's research efforts are successful, it could be at least several years before our technology will be commercially viable, and, during this period, superior competitive technologies may be introduced or customer needs may change diminishing or extinguishing the commercial uses for our applications. To date, the broad markets have generally not adopted nanotechnology-enabled products. The Company cannot predict when broad-market acceptance for nanotechnology-enabled products will develop, if at all, and we cannot reasonably estimate the projected size of any market that may develop. If markets fail to accept nanotechnology-enabled products, we may not be able to achieve revenue from the commercial application of our technologies. Our revenue growth and achievement of profitability will depend substantially on our ability to introduce new technological applications to manufacturers for products accepted by customers. If we are unable to cost-effectively achieve OEM acceptance of our technology, or if the associated products do not achieve wide market acceptance, our business will be materially and adversely affected.

**The Company will need to raise additional capital in the future, and, if we are unable to secure adequate funds on acceptable terms, the Company may be unable to support its business plan.**

The Company has entered into agreements pursuant to which the Company is likely to provide substantial amounts of research project funding and financial support for majority-owned subsidiaries over an extended period of time. Because the Company will likely seek to provide funding that greatly exceeds the Company's available cash resources, the Company will need to raise additional capital in the near term, and may seek to do so by calling the outstanding Warrants for redemption, conducting one or more private placements of equity securities, selling additional securities in a registered public offering, or through a combination of one or more of such financing alternatives. There can be no assurance that any additional capital resources which the Company may need will be available to the Company as and when required, or on terms that will be acceptable to the Company. If the Company is unable to raise the capital required on a timely basis, it may not be able to fund its research projects and the development of the businesses of its subsidiaries. In such event, the Company may be required to delay or reduce implementation of certain aspects of its plan of operations. Moreover, even if the necessary funding is available to the Company, the issuance of additional securities would dilute the equity interests of the Company's existing stockholders, perhaps substantially.

**The Company's success depends on the attraction and retention of senior management and scientists with relevant expertise.**

The Company's future success will depend to a significant extent on the continued services of its key employees, particularly R. Bruce Stewart, who conceived of the Company's business and overall operating strategy and has been most instrumental in assisting the Company raise capital. The Company's ability to execute its strategy will also depend on its ability to attract and retain qualified scientists, sales, marketing and managerial personnel. If we are unable to find, hire and retain qualified individuals, we could have difficulty implementing our business plan in a timely manner, or at all.

**The Company may not be able to compete effectively in securing first-tier research and development projects when competing against existing or new ventures.**

Management believes that the Company's success to date in raising capital to finance nanotechnology research and commercialization projects is attributable, in large part, to the belief that the plan of operations adopted by the Company is relatively novel. If the Company continues to be successful in attracting funding for research and commercialization projects, it is possible that additional competitors could emerge and compete for financing.

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Should that occur, the Company could encounter difficulty in raising funds to finance its future operations and further research and commercialization projects.

Additionally, there are some companies that already fund early-stage, scientific research at universities, and some venture capital funds invest in companies seeking to commercialize technology. It is possible that these established companies and venture funds, as well as possible additional competitors, will emerge to finance nanotechnology research. Should that occur, the Company could encounter difficulty in obtaining the opportunity to finance first-tier research and commercialization projects. Furthermore, should any commercial undertaking by the Company, with respect to a particular product or technology, prove to be successful, there can no assurance that competitors with greater financial resources than the Company will not emerge to offer similar competitive, products and/or technologies.

### **Nanotechnology-enabled products are new and may be viewed as being harmful to human health or the environment.**

There is increasing public concern about the environmental and ethical implications of nanotechnology that could impede market acceptance of products developed through these means. Potentially, nanotechnology-enabled products could be composed of materials such as carbon, silicon, silicon carbide, germanium, gallium arsenide, gallium nitride, cadmium selenide or indium phosphide, and nanotechnology-enabled products have no historical safety record. Because of the size, shape, or composition of the nanostructures or because they may contain harmful elements, nanotechnology-enabled products could pose a safety risk to human health or the environment. In addition, some countries have adopted regulations prohibiting or limiting the use of certain materials that contain certain chemicals, which may limit the market for nanotechnology-enabled products. U.S. government authorities could, for social or other purposes, prohibit or regulate the use of nanotechnology. The regulation and limitation of the kinds of materials used in or to develop nanotechnology-enabled products, or the regulation of the products themselves, could harm the commercialization of nanotechnology-enabled products and impair our ability to achieve revenue from the license of nanotechnology applications.

### **The Company will need approval from governmental authorities in the United States and other countries to successfully realize commercial value from the Company's activities.**

In order to clinically test manufacture, and market products for commercial use, two of the Company's current subsidiaries must satisfy mandatory procedures and safety and effectiveness standards established by various regulatory bodies, including the U.S. Food and Drug Administration (FDA) and the Federal Trade Commission (FTC). Technology and product development and approval within this regulatory framework takes a number of years and involves the expenditure of substantial resources. The time and expense required to perform the required testing can vary and is substantial. In addition, no action can be taken to market any biologic, drug or device in the United States until an appropriate marketing application has been approved by the FDA. Furthermore, even after initial FDA approval has been obtained, further trials may be required to provide additional data on safety and effectiveness. Adverse events that are reported during regulatory trials or after marketing approval can result in additional limitations being placed on a product's use and, potentially, withdrawal of the product from the market. Any adverse event, either before or after approval, can result in product liability claims against the Company, which could significantly and adversely impact the value of our Common Stock.

### **If export controls affecting our products are expanded, our business will be adversely affected.**

The U.S. government regulates the sale and shipment of numerous technologies by U.S. companies to foreign countries. Arrowhead's subsidiaries are developing products that might be useful for military and antiterrorism activities. Accordingly, U.S. government export regulations could restrict sales of these products in other countries. If the U.S. government places expanded export controls on our technology or

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products, our business would be materially and adversely affected. If the U.S. government determines that we have not complied with the applicable export regulations, we may face penalties in the form of fines or other punishment.

**The Company's ability to protect our patents and other proprietary rights is uncertain, exposing it to the possible loss of competitive advantage.**

The Company's subsidiaries have licensed rights to pending patents and have filed and will continue to file patent applications. The researchers sponsored by the Company may also file patent applications that Arrowhead chooses to license. If a particular patent is not granted, the value of the invention described in the patent would be diminished. Further, even if these patents are granted, they may be difficult to enforce. Efforts to enforce our patent rights could be expensive, distracting for management, unsuccessful, cause our patents to be invalidated, and frustrate commercialization of products. Additionally, even if patents are issued, and are enforceable, others may independently develop similar, superior, or parallel technologies to any technology developed by us, or our technology may prove to infringe upon patents or rights owned by others. Thus, the patents held by or licensed to us may not afford us any meaningful competitive advantage. Our inability to maintain our licenses and our intellectual property rights could have a material adverse effect on our business, financial condition and ability to implement our business plan. If we are unable to derive value from our licensed or owned intellectual property, the value of your investment in the Company will be decline.

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**Our Board of Directors has the authority to issue up to 10,000,000 shares of Preferred Stock, which may make an acquisition of our company by another company more difficult.**

We have adopted and may in the future adopt certain measures that may have the effect of delaying, deferring or preventing a takeover or other change in control of the Company that a holder of our Common Stock might consider in its best interest. Specifically, the Company's Board of Directors has the authority to issue up to 10,000,000 shares of preferred stock and to fix the rights (including voting rights), preferences and privileges of these shares (blank check preferred). Such preferred stock may have rights, including economic rights, senior to our common stock. As a result, the issuance of the preferred stock could have a material adverse effect on the price of our common stock and could make it more difficult for a third party to acquire a majority of our outstanding common stock.

## **USE OF PROCEEDS**

The proceeds from the sale of the common stock offered by this prospectus are solely for the account of the selling stockholders. We will not directly receive any proceeds from the sale of shares under this prospectus. To the extent we receive cash upon exercise of any warrants, we expect to use that cash for general corporate purposes.

## **SELLING SECURITY HOLDERS**

The Company has included in this prospectus the following shares of Common Stock and Warrants:

5,871,332 shares of our Common Stock and 6,568,083 Warrants issued to the former shareholders of ARC in the Stock Exchange and to entities and individuals in connection with the acquisition of InterActive Group, Inc.;

6,965,017 shares Common Stock and 7,269,663 Warrants issued in the Company's private placement, consummated concurrently with the Stock Exchange;

75,000 shares issued pursuant to stock option exercise, and

150,000 shares issued to the California Institute of Technology to further research and development at the Institute.

Each Selling Security Holder received Common Stock and/or Warrants in connection with the Exchange Agreement and/or a private placement, and, in accordance with a Registration Rights Agreement, is entitled to have all of their Common Stock and Warrants registered by the Company for resale under the Securities Act.

The following table sets forth the name of each Selling Security Holder, the number of shares of Common Stock owned by each Selling Security Holder as of the date of this prospectus, and percentage of all outstanding shares of Common Stock that such shares represent, together with the number of shares of the Company's Common Stock issuable upon exercise of Warrants owned by each as of the same date. The Selling Security Holders may offer shares and warrants under this prospectus from time to time and may elect to sell none, some or all of the shares or warrants



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set forth next to their name. As a result, we cannot estimate the number of shares of Common Stock and Warrants that a Selling Security Holder will beneficially own after termination of sales under this prospectus. In addition, a Selling Security Holder may have sold, transferred or otherwise disposed of all or a portion of that holder's shares of Common Stock or Warrants since the date on which they provided information for this table. We have not made independent inquiries about this. We are relying on written commitments from the Selling securityholders to notify us of any changes in their beneficial ownership after the date they originally provided this information. See Plan of Distribution beginning on page 13.

| <u>Name</u>  | <u>Shares of Common Stock<br/>owned and offered:</u> |                | <u>Shares of Common Stock<br/>issuable upon exercise of</u> |
|--------------|------------------------------------------------------|----------------|-------------------------------------------------------------|
|              | <u>Number</u>                                        | <u>Percent</u> | <u>Warrants</u>                                             |
| Colman Abbe  | 16,667                                               | *              | 16,667                                                      |
| Richard Abbe | 33,334                                               | *              | 33,334                                                      |

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| Name                                        | Shares of Common Stock<br>owned and offered: |         | Shares of Common Stock<br>issuable upon exercise of<br><br>Warrants |
|---------------------------------------------|----------------------------------------------|---------|---------------------------------------------------------------------|
|                                             | Number                                       | Percent |                                                                     |
| Michael Abbott                              | 35,000                                       | *       | 35,000                                                              |
| AFI, LLP                                    | 25,000                                       | *       | 25,000                                                              |
| Ivano Angelastri                            | 62,500                                       | *       | 32,500                                                              |
| Thomas B. Akin                              | 100,000                                      | *       | 100,000                                                             |
| Jack M. Armstrong, IRA                      | 16,667                                       | *       | 16,667                                                              |
| Milton Aronowitz, Jr.                       | 62,500                                       | *       | 62,500                                                              |
| Craig S. Atkins III                         | 166,667                                      | 1.2%    | 166,667                                                             |
| Sam Belzberg                                | 133,333                                      | *       | 133,333                                                             |
| Doug & Zinita Benson                        | 150,000                                      | 1.1%    | 150,000                                                             |
| F. Berdon Co. LP                            | 40,000                                       | *       | 40,000                                                              |
| Elizabeth Berman                            | 16,667                                       | *       | 16,667                                                              |
| Colbart Birnett                             | 34,000                                       | *       | 34,000                                                              |
| Bluestem Capital Company                    |                                              |         | 34,533                                                              |
| Melinda & Steve Boyd                        | 110,000                                      | *       | 110,000                                                             |
| Timothy J. Brothers                         | 12,500                                       | *       | 12,500                                                              |
| Karen Brunner-Steirer                       | 25,000                                       | *       | 25,000                                                              |
| Paul Burkhard                               | 25,000                                       | *       | 25,000                                                              |
| California Institute of Technology          | 150,000                                      | 1.1%    |                                                                     |
| Canterbury Consulting Inc. 401K Plan        | 10,000                                       | *       | 10,000                                                              |
| Central Park International Corp.            | 25,000                                       | *       | 25,000                                                              |
| Dr. Henry & Marc Chalfin                    | 16,000                                       | *       | 16,000                                                              |
| Philip J. Chelsvig                          | 33,000                                       | *       | 33,000                                                              |
| Robert Ching, MD <sup>(1)</sup>             | 2,204,487                                    | 16.3%   | 2,204,487                                                           |
| Scott Cohen                                 | 50,000                                       | *       | 50,000                                                              |
| Congregation Darkei Tshivo of Dinov Inc     | 50,000                                       | *       | 50,000                                                              |
| Virginia Dadley                             | 102,500                                      | *       | 102,500                                                             |
| Philip & Judy Damashek                      | 466,667                                      | 3.5%    | 466,667                                                             |
| Patsy Z. Dewey                              | 75,000                                       | *       | 75,000                                                              |
| The Dorsey Family Trust                     | 100,000                                      | *       | 100,000                                                             |
| Drake Revocable Trust                       | 500,167                                      | 3.7%    | 416,667                                                             |
| Dunedin, Inc.                               |                                              |         | 2,500                                                               |
| Eduard Maurice Erni                         | 25,000                                       | *       | 25,000                                                              |
| Richard & Anne Ferrero                      | 60,000                                       | *       | 60,000                                                              |
| Fred F. Finocchiaro                         | 133,863                                      | *       | 158,863                                                             |
| John Rocky Finocchiaro                      | 33,000                                       | *       | 33,000                                                              |
| Carol Flickinger                            |                                              |         | 2,250                                                               |
| William Forkner                             | 12,500                                       | *       | 5,000                                                               |
| Edward Frykman <sup>(2)</sup>               | 50,000                                       | *       | 50,000                                                              |
| Carl Fuller, IRA                            | 6,667                                        | *       | 6,667                                                               |
| Alan Gelband                                | 50,000                                       | *       | 50,000                                                              |
| Ari S. Goldman                              | 18,000                                       | *       | 18,000                                                              |
| Henry Gurley III                            | 29,703                                       | *       | 29,703                                                              |
| Dean Hadley                                 | 25,000                                       | *       | 25,000                                                              |
| Dean Hall                                   | 25,000                                       | *       | 25,000                                                              |
| William J. Hanson <sup>(3)</sup>            | 114,912                                      | *       | 242,329                                                             |
| Hauck & Aufhauser Banquiers Luxembourg S.A. | 100,000                                      | *       | 100,000                                                             |
| Heller Family Foundation                    | 50,000                                       | *       | 50,000                                                              |
| Stephen Hess                                | 25,000                                       | *       | 25,000                                                              |
| Iroquois Capital L.P.                       | 50,000                                       | *       | 50,000                                                              |

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| Name                                       | Shares of Common Stock<br>owned and offered: |         | Shares of Common Stock<br>issuable upon exercise of |
|--------------------------------------------|----------------------------------------------|---------|-----------------------------------------------------|
|                                            | Number                                       | Percent | Warrants                                            |
| James Irvine                               | 33,333                                       | *       | 33,333                                              |
| Michael Kahan                              | 25,000                                       | *       | 25,000                                              |
| Andreas Kappler                            | 25,000                                       | *       | 25,000                                              |
| Harry and Matye Kilpatrick                 | 25,000                                       | *       | 25,000                                              |
| Mary Jane Kirtland                         | 10,000                                       | *       | 10,000                                              |
| Jeffrey P. Knightly                        | 25,000                                       | *       | 25,000                                              |
| Kreuzfeld Ltd                              | 1,250,000                                    | 9.2%    | 1,100,000                                           |
| David M. Lackey                            | 300,000                                      | 2.2%    | 875,615                                             |
| John T. Lackey                             | 250,000                                      | 1.8%    | 250,000                                             |
| Robert J. and Karin A. Lancellotti         | 15,000                                       | *       | 15,000                                              |
| Calvin Layland                             | 50,000                                       | *       | 50,000                                              |
| Arvid Lokensgard                           | 10,000                                       | *       | 10,000                                              |
| Richard Love                               | 33,947                                       | *       | 145,218                                             |
| Jonathan Manela                            | 16,667                                       | *       | 16,667                                              |
| Gustavo A. Martinez and Irma Rosas Simbeck | 20,000                                       | *       | 20,000                                              |
| Kathleen Maclean                           | 33,333                                       | *       | 33,333                                              |
| Andreas Meixger                            | 15,000                                       | *       | 15,000                                              |
| Midwest Investments Services, LLC          | 46,667                                       | *       | 46,667                                              |
| Philip W. Mirebelli                        | 25,000                                       | *       | 25,000                                              |
| William M. Moon, DDS                       | 33,333                                       | *       | 33,333                                              |
| Dominic F. Mortellaro                      | 30,000                                       | *       | 30,000                                              |
| R. Verena Mumford-Wolfensberger            | 35,000                                       | *       | 35,000                                              |
| Randall Myers                              | 33,000                                       | *       | 33,000                                              |
| NAV I Fund LP                              | 33,333                                       | *       | 33,333                                              |
| NAV Capital Mgmt NAV Fund I, Ltd           | 16,667                                       | *       | 16,667                                              |
| Barry Neville                              | 20,000                                       | *       | 20,000                                              |
| Edward Newman                              | 33,333                                       | *       | 33,333                                              |
| Larry Noble IRA                            | 23,300                                       | *       | 23,300                                              |
| Michi O                                    | 25,000                                       | *       | 27,250                                              |
| Dean J. O'Conner                           | 12,730                                       | *       | 12,730                                              |
| Penfield Partners LP                       | 200,000                                      | 1.5%    | 200,000                                             |
| James M. Phillips, Jr. <sup>(4)</sup>      | 150,000                                      | 1.1%    | 250,000                                             |
| Russ Pohl                                  |                                              |         | 2,000                                               |
| PTJP Partners                              | 100,000                                      | *       | 100,000                                             |
| Jeffrey O. Putterman                       | 100,000                                      | *       | 100,000                                             |
| Premium Strategy Partners, AG              | 200,000                                      | 1.5%    | 5,000                                               |
| Arthur & Selma Rabin                       | 333,333                                      | 2.5%    | 333,333                                             |
| Donald L. Richey, MD                       | 25,000                                       | *       | 25,000                                              |
| Nicolas Rogivue                            | 550,000                                      | 4.1%    | 550,000                                             |
| Romano Ltd.                                | 33,333                                       | *       | 33,333                                              |
| San Diego Magnetix, Inc.                   |                                              |         | 25,000                                              |
| Martin Schlatter                           | 25,000                                       | *       | 25,000                                              |
| John Schneller                             | 25,000                                       | *       | 25,000                                              |
| S & I Consulting                           |                                              |         | 2,500                                               |
| SDS Capital Group SPC, Ltd.                | 166,667                                      | 1.2%    | 166,667                                             |
| Janet L. Segal Revocable Trust             | 25,000                                       | *       | 25,000                                              |
| Carl D. and Margaret L. Selkirk            | 25,000                                       | *       | 25,000                                              |
| Hardip K. and Paul Sethi                   | 17,000                                       | *       | 17,000                                              |
| Frederick L. Simmons                       | 35,000                                       | *       | 35,000                                              |

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| Name                            | Shares of Common Stock<br>owned and offered: |         | Shares of Common Stock<br>issuable upon exercise of |
|---------------------------------|----------------------------------------------|---------|-----------------------------------------------------|
|                                 | Number                                       | Percent | Warrants                                            |
| Smithfield Fiduciary LLC        | 333,333                                      | 2.5%    | 333,333                                             |
| Lauren J. Solomon               | 100,000                                      | *       | 100,000                                             |
| Russell D. Solomon              | 25,000                                       | *       | 25,000                                              |
| Kenneth H. South                | 75,000                                       | *       | 75,000                                              |
| Robert Stahl <sup>(5)</sup>     | 2,000                                        | *       | 10,250                                              |
| Robert A. Stein                 | 50,000                                       | *       | 50,000                                              |
| R. Bruce Stewart <sup>(6)</sup> | 471,500                                      | 3.5%    | 240,000                                             |
| Robert B. Stewart               | 420,000                                      | 3.1%    | 704,533                                             |
| Thomas C. Stewart               | 310,000                                      | 2.3%    | 510,000                                             |
| Irene Tanner                    | 25,000                                       | *       | 25,000                                              |
| Michael Tauss                   | 37,500                                       | *       | 7,500                                               |
| Taylor Family Trust             | 100,000                                      | *       | 100,000                                             |
| Sheldon S. Traube               |                                              |         | 19,000                                              |
| Torrey Pines Research           | 45,965                                       | *       | 112,197                                             |
| TPR Group, Inc                  | 19,509                                       | *       | 84,806                                              |
| Bennett Harry Tremaine IRA      | 50,000                                       | *       | 50,000                                              |
| Bret L. Udem                    | 20,000                                       | *       | 20,000                                              |
| V&L Ventures, Inc.              | 25,000                                       | *       | 25,000                                              |
| Vertical Ventures, LLC          | 372,933                                      | 2.8%    | 372,933                                             |
| West Bay Investments, LLC       | 22,000                                       | *       | 22,000                                              |
| Aaron Wolfson                   | 61,000                                       | *       | 61,000                                              |
| Abraham Wolfson                 | 34,000                                       | *       | 34,000                                              |
| Morris Wolfson                  | 50,000                                       | *       | 50,000                                              |
| Wolfson Equities                | 240,333                                      | 1.8%    | 240,333                                             |

\* Less than 1% of the total of 13,630,046 shares of Common Stock outstanding on September 10, 2004.

(1) Includes 311,248 shares of Common Stock and Warrants to purchase 311,248 shares held by the M. Robert Ching, M.D., Inc. Defined Benefit Pension Plan, 71,066 shares and Warrants to purchase 71,066 shares owned by the M. Robert Ching, M.D., Inc. Money Purchase Pension Plan, and 1,433,840 shares and Warrants to purchase 1,433,840 shares owned by The Ching Revocable Trust. Also includes 100,000 shares and Warrants to purchase 100,000 shares owned by Brian T. Ching, 100,000 shares and Warrants to purchase 100,000 shares owned by Brent Ching, 100,000 shares and warrants to purchase 100,000 shares owned by Bradley Ching, 75,000 shares and Warrants to purchase 75,000 shares owned by Philip and Beverly Ching, and 13,333 shares and Warrants to purchase 13,333 shares owned by Victor Ching, the beneficial ownership of all of which is disclaimed by M. Robert Ching.

(2) Mr. Frykman is a director of the Company.

(3) Mr. Hanson was a director and Vice President of the Company until the change in control of the Company that occurred on January 12, 2004.

(4) Mr. Phillips was a director and Secretary of the Company until his retirement on August 11, 2004.

(5) Mr. Stahl was the President of the Company until the change in control of the Company that occurred on January 12, 2004.

(6) Mr. Stewart is a director and the President of the Company.

## **PLAN OF DISTRIBUTION**

The Common Stock and Warrants offered by this prospectus may be sold by the Selling Securityholders or by their respective pledgees, donees, transferees or other successors in interest. 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 the

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Common Stock and/or Warrants stock may then be listed. The Common Stock and Warrants may be sold in one or more of the following kinds of transactions:

one or more block trades in which a broker or dealer so engaged will attempt to sell all or a portion of the Common Stock and/or Warrants held by the Selling Security Holder as an agent, but may position and resell a portion of the block as principal to facilitate the transaction;

a purchase by a broker or dealer as a principal, for resale by such broker or dealer as principal and resale by such broker or dealer for its account under this prospectus;

ordinary brokerage transactions and transactions in which the broker solicits purchasers; and

privately negotiated transactions between the Selling Security Holder and purchasers without a broker-dealer.

The Selling Security Holders may effect such transactions by selling Common Stock and/or Warrants to or through broker dealers, and such broker-dealers will receive compensation in negotiated amounts in the form of discounts, concessions, commissions or fees from the Selling Security Holders and/or the purchasers of the Common Stock and/or Warrants for whom such broker-dealers may act as agent or to whom they sell as principal, or both (which compensation to a particular broker-dealer might be in excess of customary commissions). Such brokers or dealers or other participating brokers or dealers and the Selling Security Holders may be deemed to be underwriters within the meaning of the Securities Act, in connection with such sales. Except for customary selling commissions in ordinary brokerage transactions, any such underwriter or agent will be identified, and any compensation paid to such persons will be described, in a supplement to this prospectus. In addition, any securities covered by this prospectus that qualify for sale under Rule 144 might be sold under Rule 144 rather than under this prospectus.

Each Selling Security Holder will bear all expenses with respect to the offering of Common Stock and/or Warrants by such Selling Security Holder, except that the Company will pay the costs associated with registering the Common Stock and Warrants under the Securities Act and preparing this prospectus.

## **LEGAL OPINION**

Certain legal matters relating to the validity of the common stock offered by this prospectus will be passed upon for us by Guth | Christopher LLP, Los Angeles, California.

## **EXPERTS**

The financial statements of the Company incorporated in this prospectus by reference to the Company's Annual Report on Form 10-KSB for the year ended September 30, 2003, have been so incorporated in reliance on the report of Kevin G. Breard, CPA, An Accountancy Corporation, given on the authority of said firm as experts in auditing and accounting. The financial statements of Insert Therapeutics, Inc., included in the Company's Current Report on Form 8-K/A, filed August 11, 2004 have been so incorporated in reliance on the report of Rose, Snyder & Jacobs, a corporation of Certified Public Accountants, given on the authority of said firm as experts in auditing and accounting.

**WHERE TO FIND ADDITIONAL INFORMATION**

The Company files annual, quarterly and special reports, proxy statements and other information with the Securities and Exchange Commission (the Commission). You may read and copy any document filed by the Company at the Commission's Public Reference Room at 450 Fifth Street, N.W., Washington, D.C. 20549. Please call the Commission at 1-800-SEC-0330 for further information on the public reference room. The Company's filings with the Commission are also available to the public at the Commission's internet web site: <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.

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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 the Company to incorporate by reference the information that is filed by the Company with the Commission, which means that the Company can disclose important information to you by referring you to those documents. The information incorporated by reference is considered to be a part of this prospectus, and later information that the Company files with the Commission will automatically update and supersede this information. This prospectus incorporates by reference the documents listed below, and any future filings made with the Commission under Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended, (the Exchange Act), until the Selling Security Holders sell all of the Common Stock and Warrants offered herein. The documents incorporated by reference are:

1. The Company's Annual Report on Form 10-KSB/A for the fiscal year ended September 30, 2003, filed on July 7, 2004;
2. The Company's Quarterly Report on Form 10-QSB for the fiscal quarter ended December 31, 2003, filed on February 13, 2004;
3. The Company's Quarterly Report on Form 10-QSB/A for the quarter ended March 31, 2004, filed on July 7, 2004;
4. The Company's Quarterly Report on Form 10-QSB for the quarter ended June 30, 2004, filed on August 16, 2004;
5. The Company's Current Report on Form 8-K, filed on December 15, 2003;
6. The Company's Current Report on Form 8-K, filed on January 9, 2004;
7. The Company's Current Report on Form 8-K, filed on March 10, 2004;
8. The Company's Current Report on Form 8-K, filed on April 23, 2004;
9. The Company's Current Report on Form 8-K, filed on June 18, 2004;



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10. The Company's Current Report on Form 8-K, filed on July 27, 2004;

11. The Company's Current Report on Form 8-K/A, filed on August 11, 2004;

12. The description of the Common Stock contained in the Company's Information Statement on Schedule 14-C, filed on December 22, 2000;

13. The description of the Warrants contained in the Company's Registration Statement on Form 8-A, filed on February 20, 2004; and

14. 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 this Registration Statement and prior to the filing of a post-effective amendment to this registration statement of which this prospectus is a part that indicates that all securities offered hereunder have been sold, or which deregisters all securities then remaining unsold under such registration statement, shall be deemed to be incorporated by reference in the registration statement and to be a part hereof from the date of filing of such documents.

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, 1118 East Green Street, Pasadena, California 91106; telephone: (626) 792-5549.

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**Up to 26,899,098 SHARES OF COMMON STOCK**

**AND**

**WARRANTS TO PURCHASE UP TO 13,837,748 SHARES OF COMMON STOCK**

**ARROWHEAD RESEARCH CORPORATION**

\_\_\_\_\_  
**PROSPECTUS**  
\_\_\_\_\_

\_\_\_\_\_, 2004

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## PART II

## INFORMATION NOT REQUIRED IN PROSPECTUS

**Item 14. Other Expenses of Issuance and Distribution.**

The following table sets forth the costs and expenses, payable by the Company in connection with the registration and sale of the Common Stock and Warrants being registered. All amounts are estimates except the SEC registration fee.

|                              | <b>Amount to be paid</b> |
|------------------------------|--------------------------|
| SEC registration fee         | 9,700                    |
| Printing expenses            | 5,000                    |
| Legal fees and expenses      | 15,000                   |
| Accounting fees and expenses | 2,300                    |
| Miscellaneous                | 25,000                   |
|                              | <b>\$ 57,000</b>         |

**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 of 1933 (the "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 Securities and Exchange Commission such indemnification is against public policy as expressed in the Act and is, therefore, unenforceable.

**Item 16. Exhibits.**

See Exhibit Index set forth on page II-4 to this Registration Statement.

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**Item 17. Undertakings.**

The Company hereby undertakes:

(a) *Rule 415 Offering.*

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this Registration Statement 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;

(2) That, for the purpose of determining any liability under the Securities Act, each 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.

(b) *Filings incorporating subsequent Exchange Act documents by reference.*

The Company hereby undertakes that, for purposes of determining any liability under the Securities Act of 1933, each filing of the Company's annual report pursuant to section 13(a) or section 15(d) of the Securities Exchange Act of 1934 (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 this 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.

(c) *Request for Acceleration of Effective Date.*

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, 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.

In the event that a claim for indemnification against such liabilities (other than the payment by the Company 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 Company 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 Company certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3/A 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 September 10, 2004.

**ARROWHEAD RESEARCH CORPORATION**

By: /s/ R. BRUCE STEWART  
**R. Bruce Stewart**  
**President**

Pursuant to the requirements of the Securities Act of 1933, this Registration Statement on Form S-3/A has been signed by the following persons in the capacities and on the dates indicated.

| <u>Signature</u>               | <u>Officer</u>                        | <u>Date</u>        |
|--------------------------------|---------------------------------------|--------------------|
| <u>/s/ R. BRUCE STEWART</u>    | President (principal executive)       | September 10, 2004 |
| <b>R. Bruce Stewart</b>        | and Director                          |                    |
| <u>/s/ JOSEPH T. KINGSLEY</u>  | Chief Financial Officer and Secretary | September 10, 2004 |
| <b>Joseph T. Kingsley</b>      |                                       |                    |
| <u>/s/ EDWARD W. FRYKMAN*</u>  | Director                              | September 10, 2004 |
| <b>Edward W. Frykman</b>       |                                       |                    |
| <u>/s/ LeROY T. RAHN*</u>      | Director                              | September 10, 2004 |
| <b>LeRoy T. Rahn</b>           |                                       |                    |
| <u>/s/ CHARLES P. McKENNEY</u> | Director                              | September 10, 2004 |
| <b>Charles P. McKenney</b>     |                                       |                    |

\* By R. Bruce Stewart, Attorney-in-Fact.

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**EXHIBIT INDEX**

| <b><u>Exhibit<br/>Number</u></b> | <b><u>Document Description</u></b>                                                                                                                                                                                     |
|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3.1                              | Certificate of Incorporation of Interactive, Inc., a Delaware company, dated February 8, 2001 (1)                                                                                                                      |
| 3.2                              | Certificate of Amendment of Certificate of Incorporation of InterActive Group, Inc., dated January 12, 2004 (effecting, among other things a change in the corporation s name to Arrowhead Research Corporation ). (2) |
| 3.3                              | Bylaws (1)                                                                                                                                                                                                             |
| 4.1                              | Registration Rights Agreement dated January 12, 2004 (3)                                                                                                                                                               |
| 4.2                              | Standstill and Registration Rights Agreement dated January 12, 2004 (3)                                                                                                                                                |
| 4.3                              | Form of Warrant to Purchase Common Stock (4)                                                                                                                                                                           |
| 5.1                              | Opinion of Guth   Christopher LLP, including the consent of such firm**                                                                                                                                                |
| 23.1                             | Consent of Guth   Christopher LLP (included in legal opinion filed as Exhibit 5.1)**                                                                                                                                   |
| 23.2                             | Consent of Kevin G. Breard, CPA, an Accountancy Corporation*                                                                                                                                                           |
| 23.3                             | Consent of Rose, Snyder & Jacobs, LLP, the Company s independent registered public accounting firm*                                                                                                                    |

\* Filed herewith

\*\* To be filed by amendment

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

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

(3) Incorporated by reference from the Annual Report on Form 10-KSB for the year ended September 30, 2003, filed by registrant on January 13, 2004.

(4) Incorporated by reference from exhibit 4.1 to the Registration Statement on Form 8-A, filed by registrant on February 23, 2004.