

ARROWHEAD RESEARCH CORP  
Form 10QSB  
August 16, 2004  
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**UNITED STATES**  
**SECURITIES AND EXCHANGE COMMISSION**

Washington, DC 20549

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**FORM 10-QSB**

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(Mark One)

**QUARTERLY REPORT UNDER SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the quarterly period ended June 30, 2004.

**TRANSITION REPORT UNDER SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

Commission file number 000-21898

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**ARROWHEAD RESEARCH CORPORATION**

(Name of small business issuer in its charter)

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Delaware  
(State of incorporation)

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

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1118 East Green Street

Pasadena, California 91106

(626) 792-5549

(Address and telephone number of principal executive offices)

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Check whether the issuer (1) filed all reports required to be filed by Section 13 or 15(d) of the Exchange Act during the past 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes  No

State the number of shares outstanding of each of the issuer's classes of common equity, as of the latest practicable date: 13,630,046 as of August 13, 2004.

Transitional Small Business Disclosure Format (Check one): Yes  No

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**Table of Contents****Arrowhead Research Corporation and Subsidiaries****(A Development Stage Company)****Consolidated Balance Sheets****as of June 30, 2004**

	(unaudited)	
	June 30, 2004	September 30, 2003
	<u>                    </u>	<u>                    </u>
<b>ASSETS</b>		
<b>CURRENT ASSETS</b>		
Cash and cash equivalents	\$ 9,839,483	\$ 1,355,289
Marketable securities	711,072	
Grant receivable, net of allowance for doubtful account of \$0	37,200	
Other receivables	520	
Prepaid research, Note 6.	268,457	158,625
Other prepaid expenses	79,823	.
	<u>                    </u>	<u>                    </u>
<b>TOTAL CURRENT ASSETS</b>	<b>10,936,555</b>	<b>1,513,914</b>
<b>PROPERTY &amp; EQUIPMENT</b>		
Computers, office equipment and furniture	138,712	2,115
Research equipment	993,737	
Software	12,955	
Leasehold improvements	84,239	
	<u>                    </u>	<u>                    </u>
	1,229,643	2,115
Less: Accumulated depreciation & amortization	(527,799)	(90)
	<u>                    </u>	<u>                    </u>
<b>NET PROPERTY &amp; EQUIPMENT</b>	<b>701,844</b>	<b>2,025</b>
<b>OTHER ASSETS</b>		
Restricted cash	50,773	
Deposits	12,600	
Goodwill	446,432	
	<u>                    </u>	<u>                    </u>
<b>TOTAL OTHER ASSETS</b>	<b>509,805</b>	
<b>TOTAL ASSETS</b>	<b>\$ 12,148,204</b>	<b>\$ 1,515,939</b>
	<u>                    </u>	<u>                    </u>
<b>LIABILITIES AND SHAREHOLDERS EQUITY</b>		
<b>CURRENT LIABILITIES</b>		
Accounts payable	\$ 43,337	\$ 92,688
Accounts payable, capital equipment	253,500	
Accrued expenses	49,841	800
Payroll liabilities	26,283	2,689
	<u>                    </u>	<u>                    </u>
<b>TOTAL CURRENT LIABILITIES</b>	<b>372,961</b>	<b>96,177</b>
Minority interest	927,915	
Commitments and contingencies, Note 6.		

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SHAREHOLDERS EQUITY

Capital Stock, \$0.001 par value, 50,000,000 shares authorized; 13,625,546 and 4,680,000 shares issued and outstanding, respectively	13,626	4,680
Additional paid-in capital	11,948,944	1,510,320
Accumulated deficit during the development stage	(1,115,242)	(95,238)
<b>TOTAL SHAREHOLDERS EQUITY</b>	<b>10,847,328</b>	<b>1,419,762</b>
<b>TOTAL LIABILITIES AND SHAREHOLDERS EQUITY</b>	<b>\$ 12,148,204</b>	<b>\$ 1,515,939</b>

**Table of Contents****Arrowhead Research Corporation and Subsidiaries****(A Development Stage Company)****Consolidated Statements of Operations**

(unaudited)

	Three months ended June 30, 2004	Nine months ended June 30, 2004	From inception through June 30, 2004
REVENUE	\$ 37,200	\$ 37,200	\$ 37,200
OPERATING EXPENSES			
Salaries	150,702	190,702	215,702
Consulting	70,714	129,189	154,189
General and administrative expenses	179,563	553,458	594,521
Research and development	232,235	434,645	438,020
TOTAL OPERATING EXPENSES	633,214	1,307,994	1,402,428
OPERATING LOSS	(596,014)	(1,270,794)	(1,365,232)
OTHER INCOME (EXPENSES)			
Loss on disposition of building and equipment	0	(23,331)	(23,331)
Unrealized gain (loss) in marketable securities	(96,556)	211,072	211,072
Interest income	8,039	16,707	16,707
Minority interest	46,342	46,342	46,342
TOTAL OTHER INCOME (EXPENSES)	(42,175)	250,790	250,790
Provision for income taxes	0	0	800
NET LOSS	\$ (638,189)	\$ (1,020,004)	\$ (1,115,242)
Net loss per share	\$ (0.05)	\$ (0.10)	
Weighted average shares outstanding	13,585,986	10,275,403	

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Arrowhead Research Corporation and Subsidiaries

(A Development Stage Company)

Consolidated Statement of Stockholders Equity

since inception to June 30, 2004

(unaudited)

	Common Stock		Additional Paid in- Capital	Accumulated Deficit during the Development Stage	Totals
	Shares	Amount			
Common stock issued for cash at \$0.001 per share	3,000,000	\$ 3,000	\$	\$	\$ 3,000
Common stock issued for cash at \$1.00 per share	1,680,000	1,680	1,678,320		1,680,000
Stock issuance costs charged to additional paid-in capital			(168,000)		(168,000)
Net loss for period from inception to September 30, 2003				(95,238)	(95,238)
Common stock issued for cash at \$0.20 per share	75,000	75	14,925		15,000
Common stock issued for cash at \$1.00 per share	475,000	475	474,525		475,000
Common stock issued for marketable securities at \$1 per share	500,000	500	499,500		500,000
Stock issuance costs charged to additional paid-in-capital			(96,500)		(96,500)
Net loss for three months ended December 31, 2003				(205,932)	(205,932)
Common stock issued for cash at \$1.50 per share	6,608,788	6,609	9,906,573		9,913,182
Common stock issued in reverse acquisition	705,529	706	(127,844)		(127,138)
Common stock issued as a gift for \$1.00 per share	150,000	150	149,850		150,000
Common stock issued for services at \$1.50 per share	356,229	356	533,988		534,344
Additional paid-in-capital for services			60,000		60,000
Stock issuance costs charged to additional paid-in-capital			(991,318)		(991,318)
Net loss for 3 months ended March 31, 2004				(175,883)	(175,883)
Stock issuance issued for cash at \$0.20 per share	75,000	75	14,925		15,000
Net loss for 3 months ended June 30, 2004				(638,189)	(638,189)
<b>Balances as of June 30, 2004</b>	<b>13,625,546</b>	<b>\$ 13,626</b>	<b>\$ 11,948,944</b>	<b>\$ (1,115,242)</b>	<b>\$ 10,847,328</b>

**Table of Contents****Arrowhead Research Corporation and Subsidiaries****(A Development Stage Company)****Consolidated Statement of Cash Flows****For the nine months ended June 30, 2004 and from inception through June 30, 2004**

(unaudited)

	<b>Nine months ended June 30, 2004</b>	<b>From inception through June 30, 2004</b>
<b>CASH FLOWS FROM OPERATING ACTIVITIES:</b>		
Net loss	\$ (1,020,004)	\$ (1,115,241)
Adjustment to reconcile net loss to net cash used in operating activities:		
Loss on disposal of assets	23,331	23,331
Unrealized gain on securities	(211,072)	(211,072)
Issuance of stock for services	60,000	60,000
Depreciation and amortization	2,244	2,333
Minority interest	(46,342)	(46,342)
Decrease (increase) in receivables	(37,720)	(37,720)
Decrease (increase) in prepaid and other assets	(202,255)	(360,880)
Decrease (increase) in accounts payable	(255,242)	(159,865)
Decrease (increase) in accrued expenses	46,352	47,152
Decrease (increase) in other liabilities	26,283	26,283
<b>NET CASH USED IN OPERATING ACTIVITIES</b>	<b>(1,614,425)</b>	<b>(1,772,021)</b>
<b>CASH FLOWS FROM INVESTING ACTIVITIES:</b>		
Purchase of property & equipment	(221,597)	(223,712)
Cash paid for interest in Aonex	(2,000,000)	(2,000,000)
Cash paid for interest in Insert	(1,000,000)	(1,000,000)
Cash obtained from interest in Aonex	2,001,250	2,001,250
Cash obtained from interest in Insert	1,304,259	1,304,259
<b>NET CASH PROVIDED BY INVESTING ACTIVITIES</b>	<b>83,912</b>	<b>81,797</b>
<b>CASH FLOWS FROM FINANCING ACTIVITIES:</b>		
Net proceeds from issuance of common stock	10,014,707	11,529,707
<b>NET CASH PROVIDED BY FINANCING ACTIVITIES</b>	<b>10,014,707</b>	<b>11,529,707</b>
<b>NET INCREASE (DECREASE) IN CASH</b>	<b>8,484,194</b>	<b>9,839,483</b>
CASH AT BEGINNING OF PERIOD	1,355,289	
<b>CASH AT END OF PERIOD</b>	<b>\$ 9,839,483</b>	<b>\$ 9,839,483</b>
Supplementary disclosures:		
Interest paid	\$	\$
Income tax paid	\$ 800	\$ 800





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**ARROWHEAD RESEARCH CORPORATION**

(A DEVELOPMENT STAGE COMPANY)

**NOTES TO FINANCIAL STATEMENTS**

JUNE 30, 2004

(unaudited)

**NOTE 1: ORGANIZATION AND SIGNIFICANT ACCOUNTING POLICIES**

*General*

On January 12, 2004, Arrowhead Research Corporation ( Arrowhead or the Company ) (formerly known as InterActive Group, Inc.) issued shares of common stock and warrants in exchange for all of the issued and outstanding securities of Arrowhead Research Corporation, a California corporation (the California corporation ) (the Stock Exchange ). As a result of this transaction, the California corporation became a wholly-owned subsidiary of the Company, and the former shareholders of the California corporation acquired approximately 89% of the Company's Common Stock outstanding immediately thereafter. In addition, all of the officers and directors of the Company prior to the transaction were replaced by designees of the former shareholders of the California corporation, and the Company's corporate name was changed to Arrowhead Research Corporation.

Arrowhead has been operating under its new management since January 2004, and, at this time, is a development-stage company. Our primary business objective is to commercialize pioneering, breakthrough products in nanotechnology. Our business model is based on three strategic components:

Arrowhead provides capital to entities engaged in development and commercialization of nanoscale materials, devices, and systems. In return for early-stage funding, Arrowhead acquires a majority interest in these entities.

Arrowhead sponsors nanoscience research and development by directly funding research at universities. In return for funding, Arrowhead has historically obtained exclusive rights to license and commercialize technologies generated through the research.

Arrowhead seeks to leverage valuable intellectual property in nanotechnology through licensing and sub-licensing arrangements.

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

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

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

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 the entity in lieu of making an additional cash investment. Arrowhead can also terminate its sponsored research agreements at any time upon written notice.

Arrowhead has a 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 particular technologies succeed or fail.

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Currently, operations conducted by Arrowhead and its subsidiaries consist of primarily technological research and development. It could take a long time to bring products to market, and success from an investment standpoint is uncertain. We can give no assurances that research and development being conducted by Arrowhead or any of its subsidiaries will generate any revenue or profits.

### ***Summary of Significant Accounting Policies***

**Basis of Presentation** This report on Form 10-QSB for the quarter ended June 30, 2004, should be read in conjunction with the Company's Annual Report on Form 10-KSB for the year ended September 30, 2003 filed with the SEC on January 13, 2004, and also in conjunction with the Form 8-K/A filed with the SEC on August 11, 2004, in connection with the acquisition of Insert Therapeutics, Inc. The accompanying unaudited condensed consolidated financial statements have been prepared in accordance with generally accepted accounting principles for interim financial information and with the instructions to Form 10-Q and Rule 10-01 of Regulation S-X. Accordingly, they do not include all of the information and footnotes required by generally accepted accounting principles for complete financial statements. In the opinion of management, all normal recurring adjustments considered necessary for a fair presentation have been included. Operating results for the three-month and nine-month periods ended June 30, 2004, are not necessarily indicative of the results that may be expected for the year ending September 30, 2004.

**Cash and cash equivalents** For purposes relating to the statement of cash flows, the Company considers all highly liquid debt instruments purchased with a maturity of three months or less to be cash equivalents.

**Restricted Cash** Restricted cash in the amount of \$50,773 at June 30, 2004 is to secure a facility lease, which has expired and is continuing on a month-to-month basis.

**Investments** The Company's securities investments consist of corporate stocks, and are held principally for the purpose of selling in the near term and are classified as trading securities. Trading securities are recorded at fair value on the balance sheet in current assets, with the change in fair value during the period reflected in earnings.

**Property and equipment** Property and equipment are recorded at cost. Depreciation of property and equipment is recorded on the straight-line method over the respective useful lives of the assets ranging from 3 to 7 years. Leasehold improvements are fully amortized.

**Revenue Recognition** Insert Therapeutics was awarded a grant of \$236,441 for the period from July 2003 through June 2004 and \$244,780 for the period from July 2004 through June 2005 and a second grant of \$292,940 for the period from April 2004 through March 2005 and \$300,000 for the period from April 2005 through March 2006. These grants are recognized as revenue as the funds are expended in accordance with the terms of the grant, and since its acquisition by Arrowhead Research, Insert Therapeutics recognized revenue from the grant in the amount of \$37,200.

**Earnings per share** Basic earnings (loss) per share is computed using the weighted-average number of common shares outstanding during the period. Diluted earnings (loss) per share is computed using the weighted-average number of common shares and dilutive potential common shares outstanding during the period. Dilutive potential common shares primarily consist of employee Stock Options and Warrants. For the quarter ended June 30, 2004, their effect is anti-dilutive.

Stock-Based Compensation Arrowhead has a Stock Option Plan (the Plan ) which provides for the granting of non-qualified Stock Options or incentive Stock Options. Under the Plan, 3,000,000 shares of Arrowhead s Common Stock are reserved for issuance upon exercise of Stock Options or Stock Purchase Warrants that may be granted by the Board of Directors to employees, consultants and others expected to provide significant services to Arrowhead.

Arrowhead accounts for employee stock option grants in accordance with Accounting Principles Board Opinion No. 25, Accounting for Stock Issued to Employees and related interpretations (APB 25), and has adopted the disclosure only alternative described in Statement of Financial Accounting Standards (SFAS) No. 123, Accounting for Stock-Based Compensation, amended by SFAS No. 148 Accounting for Stock Based Compensation-Transition and Disclosure.

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SFAS No. 123, Accounting for Stock-Based Compensation, requires pro forma information regarding net income (loss) using compensation that would have been incurred if Arrowhead had accounted for its employee stock options under the fair value method of that statement. Options to purchase 895,000 and 1,545,000 shares of the common stock of Arrowhead were granted during the three months and nine months ended June 30, 2004, respectively. The fair value of options granted in the three months and nine months ended June 30, 2004 were estimated at \$147,228 and \$235,433, respectively, as of the date of grant in accordance with the Black-Scholes Option pricing model with the following assumptions:

	<b>Three months ended June 30, 2004</b>	<b>Nine Months ended June 30, 2004</b>
Risk free interest rate	3.66%	2.96% -3.66%
Stock volatility factor	0.01	0.01
Weighted average expected option life	5 years	5 years
Expected dividend yield	None	None

The pro forma net loss and loss per share had Arrowhead accounted for the options using FAS 123 would have been as follows:

	<b>Three months ended June 30, 2004</b>	<b>Nine months ended June 30, 2004</b>
Net loss as reported	\$ (638,189)	\$ (1,020,004)
Basic and diluted net loss per share as reported	\$ (0.05)	\$ (0.10)
Add: stock-based compensation expense included in determination of net loss as reported	\$	\$
Deduct: total stock-based employee compensation expense determined under fair market value-based method for all awards	\$ (9,360)	\$ (36,166)
<b>Pro forma net loss</b>	<b>\$ (647,549)</b>	<b>\$ (1,056,170)</b>
<b>Pro forma net loss per share</b>	<b>\$ (0.05)</b>	<b>\$ (0.10)</b>

**NOTE 2: BASIS OF CONSOLIDATION**

On April 20, 2004, Arrowhead acquired 1,000,000 shares of Series A Preferred stock in Aonex Technologies, Inc. ( Aonex ). The 1,000,000 shares of Series A Preferred stock represent 80% of the outstanding, voting shares of Aonex and allows Arrowhead to elect a majority of the Board of Directors of Aonex.

On June 4, 2004, Arrowhead purchased 24,496,553 shares of Series B Preferred Stock of Insert Therapeutics, Inc. ( Insert ), a Pasadena, California based company. This Series B Preferred Stock represents 62% of the voting securities of Insert and allows Arrowhead to elect a majority of the Board of Directors of Insert.



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The Stock Exchange resulted in a change of control of the Company and has been accounted for as a reverse acquisition, as though Arrowhead Research, the California corporation acquired the Company through a purchase of the net assets of the Company with no goodwill being recognized. Therefore, the financial statements of the Company are deemed to be those of the California corporation from its inception on May 7, 2003 and reflect the consolidated assets and operations of the two entities only from and after January 12, 2004. The operations of the California corporation were immaterial from May 7, 2003 through June 30, 2003, and therefore the comparative statements of operations and cash flows are not presented.

**NOTE 3. SHAREHOLDERS' EQUITY**

Arrowhead is authorized to issue up to 50,000,000 shares, 0.001 par value, of common stock and 20,000,000 shares of preferred stock. At June 30, 2004, 13,625,546 shares of common stock were outstanding and an additional 13,837,439 shares are reserved for issuance upon exercise of outstanding common stock purchase warrants. An additional 3,000,000 shares are reserved under Arrowhead's 2000 Stock Option Plan.

In connection with the formation of the company, two private placements of common stock, and the acquisition of InterActive Group, Inc., Arrowhead issued 13,837,439 common stock purchase warrants. Each Warrant entitles the holder to purchase one share of common stock at a price of \$1.50 at any time following issuance and prior to June 30, 2013, on which date all unexercised warrants will expire. The warrants are redeemable by Arrowhead at any time following issuance, upon 30 days prior written notice, provided that a public market for the underlying shares of common stock then exists and that the closing bid price for a share of Arrowhead's common stock, for 20 consecutive trading days ending not more than 15 days prior to the date of the redemption notice, equals or exceeds \$3.00 per share. Holders will be required to exercise their warrants within 30 days or accept the \$.001 per warrant redemption price.

**NOTE 4: LEASES**

On May 24, 2004, Arrowhead entered into a lease agreement for approximately 3,500 square feet of office space at 1118 East Green Street, Pasadena, CA 91106. The lease commenced on June 1, 2004 and expires on November 30, 2005. The rental rate is \$6,125 for June 1, 2004 through May 31, 2005 and \$6,300 for June 1, 2005 through November 30, 2005.

On June 15, 2004, Aonex entered into a lease agreement for approximately 4,006 square feet of office space in Pasadena, California. The lease commenced on July 1, 2004 and expires on June 30, 2006. The rental rate is \$6,009 per month until July 1, 2005, at which time it increases to \$6,810 per month.



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On December 27, 2000, Insert Therapeutics entered into a lease agreement for a approximately 7,000 square feet of combined lab and office space in Pasadena, California. The lease expired on April 30, 2003, but Insert continues to occupy the space on a month to month basis at a cost of \$10,543 per month.

**NOTE 5: SUBSIDIARIES**

On April 20, 2004, Arrowhead finalized a purchase of 1,000,000 shares of voting, newly-issued Series A Preferred Stock of newly-formed Aonex Technologies, Inc., representing 80% of the voting securities of Aonex, for \$2,000,000 paid on the closing date. In conjunction with the stock sale, Arrowhead Research entered into a related Agreement to Provide Additional Capital (See Note 6), under which, if Arrowhead elects not to provide additional capital, Arrowhead would forfeit a proportionate percentage of stock. Aonex is seeking to commercialize a method for transferring nano-layers of expensive semiconductor materials and oxides onto low-cost substrates with no adhesives and with controlled stress. The wafers developed through the Aonex process could reduce manufacturing costs and improve performance for select device applications including LEDs, high power amplifiers, and high-efficiency solar cells.

On June 4, 2004, Arrowhead finalized a purchase of 24,496,553 shares of voting, newly-issued Series B Preferred Stock of Insert Therapeutics, Inc., representing 62% of the voting securities of Insert, for \$1,000,000 paid on the closing date. In conjunction with the stock sale, Arrowhead Research entered into a related Agreement to Provide Additional Capital (See Note 6), under which, if Arrowhead elects not to provide additional capital, Arrowhead would forfeit a proportionate percentage of stock. Insert is currently expanding and leveraging its platform technology, Cycloset, through an internal small-molecule drug delivery development program, a gene-therapy collaboration with San Diego-based Canji, Inc., a subsidiary of Schering-Plough, and grants in both areas from the National Cancer Institute. Insert has designed a novel class of nanoscale cyclodextrin polymers that incorporate optimal properties for intracellular systemic delivery of a broad range of therapeutics.

The following summarizes pro forma information, assuming the acquisition had occurred on October 1, 2003:

	<b>Three months ended June 30, 2004</b>	<b>Nine months ended June 30, 2004</b>
Revenue	\$ 72,882	\$ 109,175
Net loss	(778,204)	(1,677,898)
Loss per share	(0.06)	(0.16)

On April 21, 2004, Arrowhead entered into a letter agreement with Caltech and Michael Roukes to form a company, Nanotechnica, Inc. ( Nanotechnica ) to further develop and commercialize a portfolio of intellectual property that was developed by Dr. Roukes and his group over a period of more than ten years. Nanotechnica was incorporated on June 24, 2004, and Arrowhead funded Nanotechnica with \$2,000,000 on August 6, 2004 in anticipation of finalizing the purchase of 5,000,000 shares of voting, newly-issued Series A Preferred Stock. The 5,000,000 shares of Series A Preferred stock would represent 74% of the outstanding voting securities of Nanotechnica. Nanotechnica aims to establish capabilities for manufacturing a variety of nanoscale devices and systems. In the near term, Nanotechnica is pursuing the development of several simple, early-stage products such as scanning probe tips, pathogen sensors, and micro gas analyzers. In the more distant future, Nanotechnica plans to develop more sophisticated products such as devices for real time imaging of cellular events and capabilities for magnetic resonance force microscopy.



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Arrowhead Research is operating two majority-owned subsidiaries and is finalizing the formation and financing of a third majority-owned subsidiary. The following table summarizes the terms of capital contributions that may be provided by Arrowhead:

<u>Subsidiary</u>	<u>Amount Subject to Agreements to Provide Additional Capital</u>	<u>Estimated Time Period for Additional Capital Contributions</u>
Aonex	\$ 3,000,000	2 years
Insert	\$ 4,000,000	*
Nanotechnica	\$ 18,000,000	18 months

\* Arrowhead must elect to pay an additional \$1,000,000 on or before December 31, 2004. Additional future capital contributions to Insert will depend on certain FDA approvals, the timing of which is unknown and cannot be estimated.

On April 20, 2004, Arrowhead entered into an Agreement to Provide Additional Capital with Aonex. Under the terms of the Agreement, Arrowhead may contribute up to an additional \$3,000,000 over a two-year period as certain milestones in the development of its business are met. If the milestones are met, and Arrowhead elects not to provide additional capital, Arrowhead would forfeit a proportionate percentage of stock, the Agreement to Provide Additional Capital would terminate and Arrowhead would forfeit the opportunity to provide any future additional capital under the terms of the agreement. If the milestones are not met, Arrowhead is not subject to any forfeiture of stock for the failure to provide additional capital to Aonex.

On June 4, 2004, Arrowhead entered into an Agreement to Provide Additional Capital with Insert. Under the terms of the Agreement, Arrowhead may contribute up to an additional \$4,000,000 at certain time periods and as milestones in the development of its business are met. If the milestones are met, and Arrowhead elects not to provide additional capital, Arrowhead would forfeit a proportionate percentage of stock, the Agreement to Provide Additional Capital would terminate and Arrowhead would forfeit the opportunity to provide any future additional capital under the terms of the agreement. If the milestones are not met, Arrowhead is not subject to any forfeiture of stock for the failure to provide additional capital to Insert.

Pursuant to a letter agreement dated April 21, 2004, Arrowhead is expecting to enter into a similar Agreement to Provide Additional Capital with Nanotechnica. Under the terms of the letter agreement, Arrowhead may contribute up to an additional \$18,000,000 over an eighteen month period according to a timetable or by mutual agreement. If the additional capital contributions are not made, Arrowhead would forfeit a proportionate percentage of stock, the Agreement to Provide Additional Capital would terminate, and Arrowhead would forfeit the opportunity to provide any future additional capital under the terms of the agreement.

**Sponsored Research Agreements**

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The terms of three sponsored research agreements between Arrowhead Research and the California Institute of Technology are summarized in the following table:

<u>Research Project</u>	<u>Total estimated</u> <u>project cost</u>	<u>Annual</u> <u>cost</u>	<u>Amount paid</u> <u>to date</u>	<u>Time period</u>
Research Tools (Dr. C. Patrick Collier)	\$ 1,288,766	\$ 235,894	\$ 235,894	Oct. 1, 2003 - Sept. 30, 2008 (5 years)
Nanotubes (Dr. Marc Bockrath)	\$ 810,000	\$ 162,000	\$ 162,000	Jan. 1, 2004 - Dec. 31, 2008 (4 years)
Nanofilms (Dr. Harry Atwater)	\$ 870,793	\$ 242,640	\$ 242,640	Jan. 2, 2004 - Dec. 31, 2008 (4 years)

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The terms of each agreement call for Arrowhead to make annual payments, as indicated above, to subsidize all direct and indirect costs incurred in the performance of the research, not to exceed total estimated project cost. If any of these agreements are extended, the dollar value of costs that will be reimbursed may be modified by mutual agreement to cover additional work performed during the extension. Each research agreement is terminable on 60-days written notice with an obligation to satisfy outstanding obligations at the time of cancellation.

As of June 30, 2004, the Company had advanced Caltech a total of \$640,534 for research and development costs under these research agreements. These costs are amortized over the time period covered above and consist primarily of technology development and application research. Research expense related to these costs was \$166,292 and \$372,077 for the quarter and nine months ended June 30, 2004, respectively. Prepaid research amounted to \$268,457 at June 30, 2004.

**NOTE 7. RELATED PARTY TRANSACTIONS**

James M. Phillips, Jr., director and secretary of Arrowhead was paid a monthly retainer of \$4,500 per month for legal services. Mr. Phillips retired and resigned from all positions with Arrowhead, including his position as a director. For the nine months ended June 30, 2004, Mr. Phillips was paid a total of \$31,500 under this arrangement.

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### **ITEM 2. MANagements Discussion and Analysis and Plan of Operation**

Statements contained in this Quarterly Report on Form 10-QSB, which are not purely historical, are forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934, including but not limited to statements regarding the Company's expectations, hopes, beliefs, intentions or strategies regarding the future. Actual results could differ materially from those projected in any forward-looking statements as a result of a number of factors, including those detailed in Risk Factors below and elsewhere in this Quarterly Report on Form 10-QSB. The forward-looking statements are made as of the date hereof, and the Company assumes no obligation to update the forward-looking statements, or to update the reasons why actual results could differ materially from those projected in the forward-looking statements.

*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 our company 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, and (4) the terms Common Stock and stockholder(s) refer to Arrowhead's common stock and the holders of that stock, respectively.*

#### **Overview**

Arrowhead Research is a diversified nanotechnology company structured to bring together an innovative mix of technologies in the areas of healthcare, semiconductors and manufacturing processes, as well as 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.

Arrowhead consummated a stock exchange transaction in January 2004 with the owners of ARC (the Stock Exchange). In the Stock Exchange, the Company sold approximately 89% of its Common Stock to the owners of ARC, and the Company acquired 100% of the issued and outstanding stock of ARC, with ARC becoming a wholly-owned subsidiary of the Company.

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. To help achieve our business objectives we are actively seeking to expand our management team, and, specifically, have extended an offer of employment to a new Chief Financial Officer. Our President and Chief Executive Officer, R. Bruce Stewart has over 40 years of entrepreneurial, business development, and investment banking experience. He has founded and financed several companies, including companies that are traded in the public markets.

Upon the Stock Exchange, the Company's new management team terminated the Company's prior business activities and adopted its primary business objective: to commercialize pioneering, breakthrough products in nanotechnology.

#### **Plan of Operation**

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Arrowhead has been operating under its new management since January 2004, and, at this time, is a development-stage company. Our primary business objective is to commercialize pioneering, breakthrough products in nanotechnology. Our business model is based on three strategic components:

Arrowhead provides capital to entities engaged in development and commercialization of nanoscale materials, devices, and systems. In return for early-stage funding, Arrowhead acquires a majority interest in these entities.

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Arrowhead sponsors nanoscience research and development by directly funding research at universities. In return for funding, Arrowhead has historically obtained exclusive rights to license and commercialize technologies generated through the funded research.

Arrowhead seeks to leverage valuable intellectual property in nanotechnology through licensing and sub-licensing arrangements.

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

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

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

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 its subsidiaries in lieu of making an additional cash investment. Arrowhead can also terminate its sponsored research agreements at any time upon written notice.

Arrowhead has a 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 particular technologies succeed or fail.

Currently, operations conducted by Arrowhead and its subsidiaries consist of primarily technological research and development. It could take a long time to bring products to market, and success from an investment standpoint is uncertain. We can give no assurances that research and development being conducted by Arrowhead or any of its subsidiaries will generate any revenue or profits.

## **Subsidiaries**

In the quarter ended June 30, 2004, we acquired a controlling interest in the following two product-driven companies, which we will operate as majority-owned subsidiaries, and Arrowhead is in the process of finalizing the acquisition of a majority interest in a third subsidiary:

### **Aonex Technologies, Inc.**

On April 20, 2004, the Company formed Aonex Technologies, Inc. ( Aonex ) in association with Dr. Harry Atwater, and members of his research team at California Institute of Technology ( Caltech ). In





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exchange for one million shares of voting, newly-issued Series A Preferred Stock of Aonex, Arrowhead provided \$2,000,000 in initial capitalization, and may contribute up to an additional \$3,000,000 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. If the milestones are not met, Arrowhead is not subject to such forfeiture. Arrowhead owns 80 percent of the outstanding voting stock of Aonex and maintains the right to appoint a majority of the Board.

## Technology

Aonex was formed to commercialize a method for transferring nano-layers of expensive semiconductor materials and oxides onto low-cost ( virtual ) substrates (e.g., silicon, sapphire, and glass), with no adhesives and with controlled stress. The process could produce high-performance laminate wafers (e.g., indium phosphide-on-silicon and germanium-on-silicon) that offer the electrical and optical characteristics of exotic semiconductor materials and mechanical stability levels associated with silicon. These engineered substrates are expected to reduce manufacturing costs and improve performance for select device applications including LEDs, high frequency power amplifiers, and high-efficiency solar cells. Aonex technology could ultimately support the integration of different semiconductor materials onto a single substrate. If developed, this type of technology could enable the integration of optical, logical, and high frequency power amplification devices into single dies an industry trend termed system on a chip (SoC). Such technology could lead to improved performance and significant cost savings.

Currently, Aonex is performing on-going testing of implantation conditions on two target materials, using facilities and outsourced implantation providers, and is continuing evaluation of optimal anneal conditions to minimize production costs of virtual substrates. In addition, Aonex is establishing relationships with outsourced providers of specific elements of Aonex manufacturing process.

## Intellectual Property

Aonex licensed a suite of intellectual property from Caltech in exchange for the issuance of warrants to purchase 700,000 shares of common stock at a price per share of \$0.001 to Caltech. The license agreement provides Aonex with exclusive, worldwide rights to certain patents filed by Caltech.

## Key Personnel

Research is led by Dr. Harry Atwater, the Howard Hughes Professor of Applied Physics and Materials Science at Caltech and co-inventor of Aonex s core technology. Professor Atwater has consulted extensively for industry and government, and has actively served the materials science community in various capacities. He is a team leader for the NREL National Thin Film Si Photovoltaics team and serves on the Director s Review Committee, Chemistry and Materials Science Division, Lawrence Livermore National Laboratory; and the Board of Directors, Gordon Research Conferences. He has served on the Department of Energy, Office of Science, Division of Materials Sciences Visiting Committee; Stanford University Department of Materials Science and Engineering Visiting Committee; National Science Foundation Division of Materials Research Visiting Committee.

Sean Olson is the President of Aonex and has both technical and business experience in the semiconductor industry. Mr. Olson served in engineering and management positions at Silicon Valley Group Lithography (acquired by ASML), and supported technology and business

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development efforts at Oraxion Diagnostics, a start-up in the metrology space. He was also a strategy consultant for The Boston Consulting Group.

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### *Insert Therapeutics, Inc.*

On June 4, 2004, the Company acquired a majority interest in Insert Therapeutics, Inc. ( Insert ), a Pasadena-based company that has been in existence since 2000. In exchange for 24,496,553 shares of voting, newly-issued Series B Preferred Stock of Insert Therapeutics, Inc., Arrowhead provided \$1,000,000 in capitalization on the closing date and has agreed to contribute up to an additional \$4,000,000 at certain time periods and as milestones in the development of the business are met. If Insert meets the milestones and Arrowhead elects not to provide additional capital, Arrowhead would forfeit a proportionate percentage of stock. If the milestones are not met, Arrowhead is not subject to such forfeiture. Arrowhead owns approximately 62% of the voting stock of Insert Therapeutics, Inc. and maintains the right to appoint a majority of the board.

### Technology

Insert Therapeutics is currently expanding and leveraging its platform technology, Cyclosert, through an internal small-molecule drug development program, a gene-therapy collaboration with San Diego-based Canji, Inc., a subsidiary of Schering-Plough, and grants in both areas from the National Cancer Institute. Insert 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's linear cyclodextrin-containing polymers can be designed to be neutral, positively charged or negatively charged. This feature is unique to Cyclosert technology and provides flexibility for formulation and delivery. 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 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. Insert hopes to file an Investigational New Drug (IND) application in the near future and has had informal discussions with City of Hope regarding clinical trials.

### Intellectual Property

Insert Therapeutics has an exclusive, worldwide license from Caltech to a suite of U.S. and foreign patents that are pending or have been issued. Insert has also filed over 15 U.S. and foreign patent applications, which are still pending.

### Key Personnel

Dr. Mark Davis is the founder of Insert and co-inventor of Insert's core technology. Dr. Davis is the Warren and Katharine Schlinger Professor of Chemical Engineering at Caltech. Dr. Davis is a Member of the National Academy of Engineering and a recipient of numerous awards including the prestigious Alan T. Waterman Award, given by the National Science Foundation annually to only one scientist in the United States across all disciplines. Dr. Davis was the first engineer to win this award for his work in rationally designed materials. Dr. Davis earned his B.S., M.S. and Ph.D. degrees in Chemical Engineering and holds over 25 patents, has published more than 250 papers and has presented over 400 seminars throughout the world.

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Research and development is under the direction of Dr. Thomas Schluep, Insert's Chief Scientific Officer. Dr. Schluep, who recently joined the company, is an expert in the development of formulations for biologics. Prior to joining Insert, he was responsible for the non-viral gene therapy program at Canji, Inc.,

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a wholly owned subsidiary of Schering-Plough. He successfully led an interdisciplinary team of scientists in their effort to develop synthetic gene delivery vehicles for the systemic treatment of cancer with the p53 tumor suppressor gene. His other research activities included the development of formulations that enhance adenoviral gene delivery after systemic or local regional administration. As a senior member of the bio-analytical group, he was also responsible for assay development, qualification, and GMP testing of adenoviral gene therapy vectors. Prior to Canji, Dr. Schlupe was a post-doctoral associate at the department of Chemical Engineering at the Massachusetts Institute of Technology. He received his Sc.D. in Process Engineering in 1995 and an MS in Biotechnology in 1989, both from the Swiss Federal Institute of Technology in Zurich, Switzerland.

Insert's corporate and business activities are led by Insert's President, John Petrovich. Mr. Petrovich brings general management, strategic planning, legal and fundraising expertise to Insert. His recent management activities include serving as Chief Operating Officer of NeTune Communications, a privately-held satellite communications services firm serving the film production industry. Prior to that, he was a partner at the law firm of Brown Raysman Millstein Felder & Steiner LLP, and a corporate finance partner at the law firm of Morrison & Foerster. He earned his B.S. in Business Administration/Finance from the University of Southern California and his Juris Doctor from the UCLA School of Law.

### Nanotechnica, Inc.

On April 21, 2004, Arrowhead, Caltech and Dr. Michael Roukes agreed to form Nanotechnica, Inc. (Nanotechnica). Nanotechnica was incorporated on June 24, 2004, and Arrowhead has provided \$2,000,000 in capital in anticipation of finalizing the agreements related to the formation of that company. Arrowhead, in conjunction with the current scientific founders, is seeking to bring in additional intellectual property and scientific expertise to Nanotechnica. At the time of closing, it is anticipated that Arrowhead will own approximately 74% of Nanotechnica and maintain a right to appoint a majority to the board.

### Technology

Nanotechnica aims to establish capabilities for manufacturing a variety of nanoscale devices and systems. In the near term, Nanotechnica is pursuing the development of several simple, early-stage products such as scanning probe tips, pathogen sensors, and micro gas analyzers. In the more distant future, Nanotechnica plans to develop more sophisticated products such as devices for real time imaging of cellular events and capabilities for magnetic resonance force microscopy.

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 pathogen sensor with sensitivity down to single bacterial cells / spores. An independent testing laboratory has been engaged to validate and certify the performance of this technology for government agencies such as the Department of Defense and the NIAID.

### Intellectual Property

It is expected that Caltech will grant to Nanotechnica a fully-paid, worldwide, exclusive license to certain technology developed by Dr. Roukes and his research group at Caltech in return for a Warrant to purchase, for a nominal consideration, shares of the new company's Common Stock. The patent rights included the license agreement have not been finalized.



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### Key Personnel

Dr. Roukes has agreed to be Nanotechnica's Chief Technical Officer. Dr. Roukes is a Caltech Professor of Physics, Applied Physics and Bioengineering. Dr. Roukes has gained worldwide recognition through his work on the physics and fabrication of nanoscale electronic devices. He is the newly named founding Director of Caltech's Kavli Nanoscience Institute, which received a \$7.5 million grant to foster innovative research at the frontiers of nanoscale science and engineering. At Caltech, he is co-founder/co-director both of the *Initiative in Computational Molecular Biology* (CMB) and the *Laboratory for Large Scale Integration of Nanostructures* (LSI Nano). Among his external activities, he chairs the external advisory board of Harvard University's nanoscience center (CIMS), is active on (and has organized) numerous national panels on nanotechnology, e.g. for the DoD, DARPA, NSF, IEEE, and ASME. Recently, Dr. Roukes co-founded the multi-institute *Nanosystems Biology Alliance*. Among his honors, Roukes is a fellow of the American Physical Society, and was recently awarded as a Gilbreth Lecturer to the National Academy of Engineering.

### **Sponsored Research**

In addition to forming subsidiary companies, as of June 30, 2004, the Company had entered into three arrangements with the California Institute of Technology, 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 commercially exploit any technology developed as a result of the research.

The Company is engaged in negotiations with Caltech and additional members of its faculty pertaining to additional research agreements, and it is anticipated that the Company will enter into comparable arrangements with a number of researchers in the nanotechnology field, both at Caltech and at other universities. The Company also may seek to identify and finance the research and development activities of other entrepreneurs who are working in the nanotechnology arena outside of a university setting.

The three research agreements currently being financed by Arrowhead are:

**Nanoelectronics:** Professor Marc Bockrath and his team of scientists at Caltech are investigating the behavior of electronic circuits comprised of nanoscale materials. The Bockrath group is researching the transport phenomena of nanometer scale systems to create devices, such as memories and logic gates, that operate on these new principles. In particular they are examining the nature of carbon nanotubes.

Carbon nanotubes have several attractive qualities: they are chemically stable, have the electrical conductivity of copper, the thermal conductivity of diamond, and are mechanically flexible with an extremely high strength-to-weight ratio. Research by the Bockrath group is focused on developing of more powerful electromechanical devices, including faster memory chips, switches, and signal processors, and the creation of arrays of sensors that can be individually tailored to detect particular chemical species, enabling on-chip, artificial-nose chemical identification.

**Biomolecular Tools:** Professor C. Patrick Collier's group is developing new technologies that will enable the study and control of biomolecular materials and dynamics at the nanometer scale. These new tools are combinations of nanofabrication using an atomic force microscope (AFM),



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microfluidics-based chips, and fluorescence microscopy. Nanoarrays of biologically active enzymes on glass surfaces are being constructed using an AFM-based writing technique known as Dip-Pen Nanolithography.

Dip-Pen Nanolithography uses chemically modified AFM tips to pattern biological molecules at the nanoscale on a surface of interest. Collier's group has demonstrated, on a preliminary basis, catalytic activity from nanoarrays of functional enzymes patterned with Dip-Pen Nanolithography by monitoring the formation of fluorescent

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products of enzymatic reactions in microfluidic channels. This sets the stage for rapid testing of large libraries of enzymes in microfluidic lab-on-a-chip based devices as well as the screening of inhibitors against substrate binding as possible new drugs.

The Collier Lab has also developed scanning nanoelectrode probes consisting of single-wall carbon nanotubes attached to AFM tips. Carbon nanotube probes offer superior imaging resolution compared to conventional AFM tips. Additionally, the nanotubes are conductive and can be chemically or biologically functionalized in unique ways to serve as biomolecule-specific sensors and triggering devices integrated with AFM. These nanotube AFM probes have the ability to generate higher resolution topographical imaging capability and they are expected to be used to correlate molecular structure to biochemical dynamics.

*Nanofilms:* Professor Harry Atwater's group is developing methods of engineering nanofilm materials. These ultra-thin films have properties that mirror those of larger, single-crystal bulk materials at the macroscopic level with the added advantage that they can be placed on inexpensive substrates and/or possibly integrated alongside different materials in a single device. Nanofilms currently under investigation include high performance semiconductor materials (potentially useful in such applications as LEDs, solar cells, and wireless communication devices) and so-called active oxides (potentially useful for active optical devices and electro-optical integration).

The Atwater group is pursuing two approaches to creating these nanofilms. The first, thin-film growth, has the potential to create piezoelectric devices that approach the quality of single crystal devices, but at lower manufacturing costs and greater potential for integration into MEMS-based devices. The second approach, wafer bonding and layer transfer, could enable the development of low-cost, high performance laminate substrates (e.g., InP on Si) reducing manufacturing costs, improving device performance, and enabling the integration of multiple device types into a single chip – an industry trend termed system-on-a-chip (SoC). In addition, this latter process has, for the first time, yielded ferroelectric thin films with properties that are as good as those of bulk materials.

## **Liquidity and Capital Resources**

To date, Arrowhead has completed two private placements in which it issued and sold Units, each consisting of one share of Common Stock and a Warrant to purchase an additional share of Common Stock for the price of \$1.50. The aggregate net proceeds from the two private placements totaled \$11,302,363. We are not party to any bank loans or other institutional debt.

## **Funding of Subsidiaries**

As of August 13, 2004, Arrowhead had used approximately \$5,000,000 of its cash resources to acquire its interest in, and fund, its two majority-owned subsidiaries, Aonex Technologies, Inc. and Insert Therapeutics, Inc., and fund its third subsidiary, Nanotechnica, Inc., in anticipation of finalizing the agreements related to the formation of that company. Arrowhead anticipates providing additional

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amounts to its subsidiaries over the next several years and may make future capital contributions, subject to certain conditions, pursuant to separate Agreements to Provide Additional Capital with each subsidiary (the Agreement to Provide Additional Capital with Nanotechnica has not been finalized). The amounts and timing of our future capital commitments are summarized in the following table:

<u>Subsidiary</u>	<u>Contingent Future Capital Contributions</u>	<u>Estimated Time Period</u>
Aonex	\$ 3,000,000	2 years
Insert	\$ 4,000,000	*
Nanotechnica	\$ 18,000,000	18 months

\* Arrowhead may elect to pay an additional \$1,000,000 on or before December 31, 2004. Additional future capital contributions to Insert are conditioned on certain FDA approvals, the timing of which is unknown and cannot be estimated.

Arrowhead may choose not to fund an additional capital contribution with respect to any entity and, in lieu of making a cash contribution, may forfeit a proportionate number of the entity's shares. Upon forfeiture of the proportionate number of shares, the Agreement to Provide Additional Capital would terminate, and Arrowhead would also forfeit the opportunity to provide any future additional capital under the terms of the original agreement.

**Funding of Sponsored Research**

As of August 13, 2004, the Company had used \$640,500 of its cash resources to fund the three research projects that have already begun, and the Company anticipates paying an additional \$2,329,000 over the next four to five year period to continue to support these research projects.

<u>Research Project</u>	<u>Total Estimated Project Cost</u>	<u>Annual Cost</u>	<u>Amount Paid To Date</u>	<u>Time Period</u>
Biomolecular Tools (Dr. C. Patrick Collier)	\$1,288,766	\$235,894	\$235,894	Oct. 1, 2003 -Sept. 30, 2008 (5 years)
Nanotubes (Dr. Marc Bockrath)	\$810,000	\$162,000	\$162,000	Jan. 1, 2004 - Dec. 31, 2008 (4 years)
Nanofilms (Dr. Harry Atwater)	\$870,793	\$242,640	\$242,640	Jan. 2, 2004 - Dec. 31, 2008 (4 years)

Each research agreement is terminable on 60-days written notice.

**General, Administrative and Corporate Expenses**

Our general and administrative expenses rose in the quarter ended June 30, 2004. These expenses rose, in part, due to the lease of larger office space and costs associated with a move to the new space and equipping our new offices. Also in the quarter ended June 30, 2004, we hired two additional full time employees. Increased expenses also reflect a general increase in corporate expenses, particularly those associated with being a public company.

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### **Need To Raise Additional Capital**

As of August 13, 2004, Arrowhead retained in excess of \$7,400,000 (which amount includes \$2,000,000 advanced to Nanotechnica, Inc. in anticipation of the finalization of the details of its formation) of the \$11,302,363 net proceeds from its two private placements, which cash could be used to provide additional funding to subsidiaries and researchers. Since Arrowhead anticipates providing in excess of \$26,000,000 for these purposes over the next two years; the Company expects to raise substantial additional capital over this period by selling additional equity securities.

To raise additional capital without further diluting our stockholders, we expect to call our outstanding Warrants for redemption. We believe that, if our Warrants are called for redemption, the Warrant holders will instead exercise them prior to redemption. Should we call the Warrants for redemption, and all of the Warrant holders exercise their Warrants, rather than participating in the redemption, we would realize gross proceeds of approximately \$20,756,624.

However, we do not know if Warrant holders would exercise their Warrants in the face of a redemption call, and, if they do, how many would seek to exercise. Additionally, although the trading price of our stock should not be affected by a large Warrant exercise, a large exercise of our Warrants would result in a larger number of outstanding shares of our Common Stock, which could negatively impact our stock price.

In addition, the Company will likely seek to raise additional capital through the sale of Common Stock and/or new Warrants in one or more private placements, or in a registered public offering. The Company may not be able to raise the additional capital it needs at a favorable stock price, if at all. Further, the approval of the Company's pending application for the listing of its Common Stock and Warrants on The NASDAQ Small Cap Market will subject the Company to the NASDAQ market rules, including those rules that require stockholder approval before the sale of stock at a price below the prevailing market price for the Common Stock or a stock issuance involving the issuance of shares in excess of 20% of the number of our outstanding shares.

### **Risk Factors**

An investment in our Common Stock 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 Quarterly Report on Form 10-QSB, 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.

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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 Quarterly Report on Form 10-QSB 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.**

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.

Industry and Company-Specific Events. We believe some additional reasons for past fluctuations in the price of our stock have included:

announcements of developments related to our business;

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

market perception of nanotechnology as the next technological wave;

quarterly variations in our operating results; and

general market conditions or market conditions specific to particular industries.

Sales upon Registration. The Company has filed a registration statement with the Securities and Exchange Commission, for the purpose of registering for resale under the Securities Act, all of the Common Stock that was issued without registration in connection with the two private placements and the Stock Exchange. If this pending registration becomes effective, the number of shares of the Company's Common Stock in the public float will increase dramatically. Sales of a number of the shares of Common Stock pursuant to the registration statement, or even the possibility of such sales, could have a significant depressing effect on the market price for the Company's Common Stock and Warrants.

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**Warrants.** The pending registration statement that the Company has filed with the Securities and Exchange Commission also covers all the Warrants issued in connection with the two private placements and the Stock Exchange, along with all of the shares of Common Stock issuable upon exercise of the Warrants. The issuance of shares of Common Stock upon exercise of the Warrants, or the prospect of such issuance, may negatively impact the price of the Company's Common Stock and Warrants.

### **Dilution Through Sales of Additional Securities.**

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 13,552,599 shares of Common Stock have been issued, 13,835,748 are reserved for issuance upon exercise of outstanding Common Stock 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 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.

### **Limited Public Market for Common Stock**

Although we have applied for listing on The NASDAQ SmallCap Market, our Common Stock currently trades in the over-the-counter market and is quoted on the OTC Bulletin Board under the symbol ARWR. Currently, our Common Stock is very thinly traded. The OTC Bulletin Board has less daily trading volume on average than the average trading market for companies quoted on the NASDAQ SmallCap Market, NASDAQ National Market or the New York Stock Exchange. 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 our Common Stock 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.

### **Sales by Officers or Directors.**

Sales of our Common Stock by our officers, directors and employees could adversely and unpredictably affect the price of our shares. Additionally, the price of Arrowhead's stock 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 the potential for those sales, will have on our share price.

### **Absence of Dividends.**

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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.



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### **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 development and commercialization of nanoscale materials, devices, and systems. Additionally, Arrowhead directly funds nanoscience research and development at universities.

#### **Developmental Stage; Unproven Plan of Operations.**

As a consequence of the change in the control of the Company on January 12, 2004, all efforts that were previously initiated by prior management in an attempt to develop a viable business plan were abandoned. In place thereof, the Company 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, with only a limited number of research projects and subsidiary companies having been selected for funding. Accordingly, the Company's business and operations should be considered to be in the development stage, subject to all of the risks inherent in the establishment of a new business venture. For this reason, the intended business and operations of the Company may not prove to be successful. Any future success that the Company might enjoy will depend upon many factors including factors 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.

#### **We Must Overcome the Many Obstacles Associated with Integrating and Operating Varying Business Ventures.**

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.

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;

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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 common stockholders.

To date, we have implemented only funding for sponsored research, the formation of Aonex, and the acquisition of Insert Therapeutics. 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 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 generate revenues.

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### **Risks Inherent in Research Projects.**

As is the case with any research project, it is possible that no commercially viable technology will be developed as a result of any one or more of the research projects that the Company has agreed to finance to date or may finance in the future. This is particularly true in the case of the projects that the Company typically will finance, since most of these projects are in the very early stage of research, well before they have generated sufficient results to attract the interest of traditional strategic partners or financing sources that focus in the high tech or scientific arenas.

### **Risks Inherent In Attempting To Commercialize New Technologies Through Subsidiaries**

The Company's majority-owned subsidiaries are, and are expected to be in the foreseeable future, in development stage or start-up businesses focused on risky technologies. The subsidiaries have limited or no history of operations and have not attained profitability. Start-up companies are more vulnerable than better capitalized companies to adverse business or economic developments. Start-up businesses generally have limited product lines, service niches, markets and/or financial resources. Start-up companies are not well-known to the investing public are subject to potential bankruptcy, general movements in markets, and perceptions of potential growth.

### **Lack of Revenue; No Assurance of Profitability.**

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 in the foreseeable future, if at all.

### **Need for Additional Capital.**

The Company has entered into agreements pursuant to which it 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

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majority owned subsidiaries. In such event, the Company may be required to delay or reduce implementation of certain aspects of its plan of operations. Even if the necessary funding were available, the issuance of additional securities would dilute the equity interests of its existing stockholders, perhaps substantially.

### **Reliance on Key Personnel.**

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 our business and overall operating strategy and has been most instrumental in assisting Arrowhead raise the capital that it needs. Our ability to execute our strategy will also depend on our ability to attract and retain qualified technical, sales, marketing, finance 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.

### **Possibility of Competition.**

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

Additionally, some companies already fund early-stage, scientific research at universities and 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 similar research projects. Should that occur, the Company could encounter difficulty in obtaining the opportunity to finance 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 be no assurance that competitors with greater financial resources than the Company will not emerge to offer similar competitive, products and/or technologies.

### **Intellectual Property Risks.**

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 do issue 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 results of operations.

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**Regulatory and Social Risks.**

There are several regulatory and social risks associated with nanotechnology that could affect commercialization success. There is increasing public concern about the environmental and ethical implications of nanotechnology that could impede market acceptance of products developed through these means. At least one of Arrowhead's subsidiaries will be required to seek approval from the Food and Drug Administration (FDA). The FDA approval process is demanding and lengthy and could delay or hinder commercialization of certain products. Finally, Arrowhead's subsidiaries are developing products that might be useful for military and antiterrorism activities. United States government export regulations could restrict sales of these products in other countries.

**ITEM 3. CONTROLS AND PROCEDURES.**

As of the end of the period covered by this Quarterly Report on Form 10-QSB, the chief executive and financial officer of the Company conducted an evaluation of the effectiveness of the design and operation of the Company's disclosure controls and procedures pursuant to Rules 13a-14 and 3a-15 under the Securities Exchange Act of 1934, as amended. Based upon that evaluation, the executive chief executive and financial officer concluded that the Company's disclosure controls and procedures are functioning effectively to provide reasonable assurance that the information required to be disclosed by the Company in reports filed under the Securities Exchange Act of 1934 is recorded, processed, summarized and reported with the time period prescribed by the Securities and Exchange Commission. A controls system, no matter how well designed and operated, cannot provide absolute assurance that the objectives of the controls system are met, and no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, within a company have been detected.

No change in the Company's internal controls financial reporting occurred during the Company's most recent fiscal quarter that have materially affected, or is reasonably likely to materially affect, these controls subsequent to the date this evaluation was carried out.



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- 3.1 Certificate of Incorporation of InterActive Group, Inc., a Delaware company (1)
- 3.2 Certificate of Amendment of Certificate of Incorporation of InterActive Group, Inc. (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)
- 10.1 2000 Stock Option Plan (1)
- 10.2 Research Agreement with California Institute of Technology regarding the research of C. Patrick Collier (4)

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10.3	Research Agreement with California Institute of Technology regarding the research of Marc Bockrath (4)
10.4	Research Agreement between California Institute of Technology pertaining to research in Harry Atwater's laboratory (5)
10.5	Letter Agreement among the Company, California Institute of Technology and Harry Atwater pertaining to the formation of Aonex Technologies, Inc. (fka Aonex Corporation) (5)
10.6	Letter Agreement among the Company, California Institute of Technology and Michael Roukes pertaining to the formation of Nanotechnica (fka Nanokinetics) (5)
10.7	Series B Stock Purchase Agreement pertaining to acquisition of majority interest in Insert Therapeutics, Inc. (5)
10.8	Consulting Agreement between Insert Therapeutics and Dr. Mark Davis*
10.9	Consulting Agreement between Insert Therapeutics and Neologix, Inc.*
10.10	Amendment No. 1 to Agreement to Provide Additional Capital between Arrowhead and Insert Therapeutics, Inc.*
10.11	Consulting Agreement between Aonex Technologies, Inc. (fka Aonex Corporation) and Dr. Harry Atwater*
10.12	Agreement to Provide Additional Capital between Arrowhead Research and Aonex Technologies, Inc.*
31.1	Rule 13a-14(a)/15d-14(a) Certification of Chief Executive Officer*
32.1	Section 1350 Certification by Principal Executive Officer*

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\* Filed herewith

- (1) Incorporated by reference from the exhibits to the Schedule 14C filed by registrant on December 22, 2000.
- (2) Incorporated by reference from the exhibit 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, 2004, filed by registrant on January 13, 2004.
- (4) Incorporated by reference from the Annual Report on Form 10-KSB for the year ended September 30, 2004, filed by registrant on July 7, 2004.
- (5) Incorporated by reference from the Quarterly Report on Form 10-QSB for the quarter ended March 31, 2004, filed by registrant on July 7, 2004.



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(b) Reports on Form 8-K.

The Company furnished to the SEC the following Current Reports on Form 8-K:

Current Report on Form 8-K on April 6, 2004, to disclose a change in the composition of the Company's board of directors, establishment of an audit committee, adoption of a Code of Conduct and the establishment of a Scientific Advisory Board.

Current Report on Form 8-K on April 23, 2004, to announce the agreements entered into by the Company with respect to the formation and stock purchase of Aonex Corporation, Insert Therapeutics, Inc. and Nanotechnica, Inc.

Current Report on Form 8-K on June 18, 2004, to announce the consummation of the acquisition of a majority interest in Insert Therapeutics, Inc.

**SIGNATURES**

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Issuer has caused this Quarterly Report on Form 10-QSB to be signed on its behalf by the undersigned, thereunto duly authorized.

Dated: August 13, 2004

ARROWHEAD RESEARCH CORPORATION.

BY: /s/ R. BRUCE STEWART

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R. Bruce Stewart, President  
Chief executive, financial and accounting officer