

ARROWHEAD RESEARCH CORP

Form SC 13G

February 12, 2014

UNITED STATES
 SECURITIES AND EXCHANGE COMMISSION
 Washington, D.C. 20549
 SCHEDULE 13G
 Under the Securities Exchange Act of 1934
 (Amendment No. ___)

Arrowhead Research Corporation

 (Name of Issuer)

Common Stock, Par Value .001

 (Title of Class of Securities)

042797209

 (CUSIP Number)

with a copy to:

Austin W. Marx	Allen B. Levithan, Esq.
527 Madison Avenue, Suite 2600	Lowenstein Sandler PC
New York, New York 10022	65 Livingston Avenue
	Roseland, New Jersey 07068
	(973) 597-2406

(Name, Address and Telephone Number of Person
 Authorized to Receive Notices and Communications)

December 31, 2013

(Date of Event which Requires Filing of this Statement)

Check the appropriate box to designate the rule pursuant to which this Schedule is filed:

- ____ Rule 13d-1(b)
- Rule 13d-1(c)
- ____ Rule 13d-1(d)

*The remainder of this cover page shall be filled out for a reporting person's initial filing on this form with respect to the subject class of securities, and for any subsequent amendment containing information which would alter disclosures provided in a prior cover page.
 The information required on the remainder of this cover page shall not be

deemed

to be ?filed? for the purpose of Section 18 of the Securities Exchange Act of

1934 (?Act?) or otherwise subject to the liabilities of that section of the Act

but shall be subject to all other provisions of the Act (however, see the Notes).

Cusip No. 042797209 13G

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1.Names of Reporting Persons. I.R.S. Identification Nos. of above persons (entities only):

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Austin W. Marxe, David M. Greenhouse and Adam C. Stettner

- 2. Check the Appropriate Box if a Member of a Group (See Instructions):
 - (a) Not Applicable
 - (b)
- 3. SEC Use Only
- 4. Source of Funds (See Instructions): 00
- 5. Check if Disclosure of Legal Proceedings Is Required Pursuant to Items 2(d) or 2(e):
 - Not Applicable

6. Citizenship or Place of Organization: United States

- 7. Sole Voting Power: 0
- 8. Shared Voting Power: 4,371,595*
- 9. Sole Dispositive Power: 0
- 10. Shared Dispositive Power: 4,371,595*__

11. Aggregate Amount Beneficially Owned by Each Reporting Person: 4,371,595*

12. Check if the Aggregate Amount in Row (11) Excludes Certain Shares (See Instructions): Not Applicable

13. Percent of Class Represented by Amount in Row (11): 9.99%*

14. Type of Reporting Person (See Instructions): IA, IN

* This is a joint filing by Austin W. Marxe (?Marxe?), David M. Greenhouse (?Greenhouse?) and Adam C. Stettner (?Stettner?). Marxe, Greenhouse and Stettner share sole voting and investment power over 1,615,778 shares of Common Stock and 1,193 Preferred Shares(1) convertible into 651,913 shares of Common Stock owned by Special Situations Fund III QP, L.P., 486,680 shares of Common Stock and 359 Preferred Shares(1) convertible into 196,175 shares of Common Stock owned by Special Situations Cayman Fund, L.P., 233,607 shares of Common Stock and 173 Preferred Shares(1) convertible into 94,536 shares of Common Stock owned by Special Situations Private Equity Fund, L.P. and 778,689 shares of Common Stock and 575 Preferred Shares(1) convertible into 314,208 shares of Common Stock owned by Special Situations Life Sciences Fund, L.P. See Items 2 and 4 of this Schedule for additional information.

(1) The Preferred Shares describe herein may be converted to Common Stock to the extent that the total number of shares then beneficially owned does not exceed 9.99%.

Item 1. Security and Issuer:

- (a) Arrowhead Research Corporation
- (b) 225 S. Lake Avenue, Suite 1050, Pasadena, CA 91101

Item 2. (a) Name of Person Filing:

The persons filing this report are Austin W. Marxe (?Marxe?),

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David M. Greenhouse (?Greenhouse?) and Adam C. Stettner (?Stettner?), who are members of SSCayman, LLC (?SSCay?), the general partner of Special Situations Cayman Fund, L.P. (?Cayman?). Marxe, Greenhouse and Stettner are controlling principals of AWM Investment Company, Inc. (?AWM?), the general partner of MGP Advisers Limited Partnership (?MGP?), the general partner of Special Situations Fund III QP, L.P. (?SSFQP?). Marxe, Greenhouse and Stettner are members of MG Advisers L.L.C. (?MG?), the general partner of Special Situations Private Equity Fund, L.P. (?SSPE?). Marxe, Greenhouse and Stettner are also members of LS Advisers L.L.C. (?LS?), the general partner of Special Situations Life Sciences Fund, L.P. (?SSLS?). AWM serves as the investment adviser to Cayman, SSFQP, SSPE and SSLS. (Cayman, SSFQP, SSPE and SSLS will hereafter be referred to as the ?Funds?). The principal business of each Fund is to invest in equity and equity-related securities and other securities of any kind or nature.

(b) Address of Principal Business Office or, if none, Residence:

The principal business address for Marxe, Greenhouse and Stettner is 527 Madison Avenue, Suite 2600, New York, NY 10022.

(c) Citizenship:

Austin W. Marxe, David M. Greenhouse and Adam C. Stettner are United States citizens.

(d) Title of Class of Securities: Common Stock

(e) CUSIP Number: 042797209.

Item 3. If this statement is filed pursuant to §240.13d-1(b) or 240.13d-2(b), check whether

the person filing is a: Not Applicable

- (a) Broker or Dealer registered under section 15 of the Act;
- (b) Bank as defined in section 3(a) (6) of the Act;
- (c) Insurance Company as defined in section 3(a) (19) of the Act;
- (d) Investment Company registered under section 8 of the Investment Company Act of 1940;
- (e) An Investment Adviser in accordance with §240.13d-1(b) (I) (ii) (E);
- (f) An employee benefit plan or endowment fund in accordance with §240.13d-1(b) (I) (ii) (F);

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(g) A parent holding company or control person in accordance with §240.13d-

1(b) (1) (ii) (G);

(h) A savings association as defined in Section 3(b) of the Federal Deposit Insurance

Act;

(i) A church plan that is excluded from the definition of an investment company under section 3(c) (14) of the Investment Company Act of 1940;

(j) Group, in accordance with §240.13d-1(b) (1) (ii) (J).

Item 4. Ownership:

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(a) Amount Beneficially Owned: Messrs. Marxe, Greenhouse and Stettner beneficially own a total of 4,371,595 shares of Common Stock and 2,300 Preferred Shares(1) convertible into 1,256,831 shares of Common Stock. This amount includes 1,615,778 shares of Common Stock and 1,193 Preferred Shares(1) convertible into 651,913 shares of Common Stock owned by SSFQP, 486,680 shares of Common Stock and 359 Preferred Shares(1) convertible into 196,175 shares of Common Stock owned by Cayman, 233,607 shares of Common Stock and 173 Preferred Shares(1) convertible into 94,536 shares of Common Stock owned by SSPE and 778,689 shares of Common Stock and 575 Preferred Shares(1) convertible into 314,208 shares of Common Stock owned by SSLS.

(b) Percent of Class: Messrs. Marxe, Greenhouse and Stettner beneficially own 9.99% of the outstanding shares, of which SSFQP owns 5.8% of the outstanding shares, Cayman owns 1.8% of the outstanding shares, SSPE owns 0.8% of the outstanding shares and SSLS owns 2.7% of the outstanding shares. The percentage of ownership reported by each of the Funds assumes full conversion of the Preferred Stock.

(c) Number of Shares as to which the person has:

- (i) Sole power to vote or to direct the vote: 0
- (ii) Shared power to vote or to direct the vote: 4,371,595
- (iii) Sole power to dispose or to direct the disposition of: 0

(iv) Shared power to dispose or to direct the disposition of:
4,371,595

Item 5. Ownership of Five Percent or Less of a Class: If this statement is being filed to report the fact that as of the date hereof the reporting person has ceased to be the beneficial owner of more than five percent of the class of securities, check the following ___.

Item 6. Ownership of More than Five Percent on Behalf of Another Person: Not Applicable.

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Item 7. Identification and Classification of the Subsidiary Which Acquired the Security being Reported on By the Parent Holding Company: Not Applicable.

Item 8. Identification and Classification of Members of the Group: Not applicable

Item 9. Notices of Dissolution of Group: Not applicable.

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Item 10.Certification:

By signing below I certify that, to the best of my knowledge and belief, the securities referred to above were acquired and are held in the ordinary course of business and were not acquired and are not held for the purpose of or with the effect of changing or influencing the control of the issuer of the securities and were not acquired and are not held in connection with or as a participant in any transaction having that purpose or effect.

SIGNATURE

After reasonable inquiry and to the best of my knowledge and belief, I certify that the information set forth in this statement is true, complete and correct.

Dated: February 7, 2014

/s/Austin W. Marxe
AUSTIN W. MARXE

/s/David M Greenhouse
DAVID M. GREENHOUSE

/s/Adam C. Stettner
Adam C. Stettner

Attention: Intentional misstatements or omissions of fact constitute Federal criminal violations (See 18 U.S.C. 1001).

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JOINT FILING AGREEMENT

Austin W. Marxe, David M. Greenhouse and Adam C. Stettner hereby agree that the Schedule 13G to which this agreement is attached is filed on behalf of each of them.

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/s/_Austin W. Marxe
Austin W. Marxe

/s/_David M. Greenhouse
David M. Greenhouse

/s/ Adam C. Stettner
Adam C. Stettner

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