

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

**SCHEDULE 14A  
(Rule 14a-101)**

**INFORMATION REQUIRED IN PROXY STATEMENT**

**SCHEDULE 14A INFORMATION**

**Proxy Statement Pursuant to Section 14(a) of the  
Securities Exchange Act of 1934**

Filed by the Registrant

Filed by a Party other than the Registrant

Check the appropriate box:

- Preliminary Proxy Statement
- Confidential, For Use of the Commission Only (as permitted by 14a-6(e)(2))**
- Definitive Proxy Statement
- Definitive Additional Materials
- Soliciting Material Pursuant To §240.14a-12

**ARROWHEAD RESEARCH CORPORATION**

(Name of Registrant as Specified in Its Charter)

(Name of Person(s) Filing Proxy Statement if other than the Registrant)

Payment of filing fee (Check the appropriate box):

- No fee required.
- Fee computed on table below per Exchange Act Rules 14a-6(i)(1) and 0-11.
  - (1) Title of each class of securities to which transaction applies:
  - (2) Aggregate number of securities to which transaction applies:
  - (3) Per unit price or other underlying value of transaction computed pursuant to Exchange Act Rule 0-11 (set forth the amount on which the filing fee is calculated and state how it was determined):
  - (4) Proposed maximum aggregate value of transaction:
  - (5) Total fee paid:
- Fee paid previously with preliminary materials.
- Check box if any part of the fee is offset as provided by Exchange Act Rule 0-11(a)(2) and identify the filing for which the offsetting fee was paid previously. Identify the previous filing by registration statement number, or the Form or Schedule and the date of its filing.
  - (1) Amount Previously Paid:
  - (2) Form, Schedule or Registration Statement No.:
  - (3) Filing party:
  - (4) Date filed:



**ARROWHEAD RESEARCH CORPORATION**  
**225 SOUTH LAKE AVENUE, SUITE 1050**  
**PASADENA, CALIFORNIA 91101**

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**NOTICE OF ANNUAL MEETING OF STOCKHOLDERS**  
**TO BE HELD ON TUESDAY, MARCH 3, 2015**

TO THE STOCKHOLDERS OF ARROWHEAD RESEARCH CORPORATION:

NOTICE IS HEREBY GIVEN that the 2015 Annual Meeting of Stockholders of Arrowhead Research Corporation, a Delaware corporation (the “Company”), will be held on Tuesday, March 3, 2015, at 10:00 a.m., local time, at the Sheraton Pasadena, 303 E. Cordova Street, Pasadena, California 91101, for the following purposes:

1. To elect six directors to serve as members of the Company’s Board of Directors for one to three-year terms, if Proposal No. 2 is approved, or, if Proposal No. 2 is not approved, for one-year terms until the next Annual Meeting or until their successors are elected;
2. To approve a proposal to amend and restate the Company’s Certificate of Incorporation to divide our Board of Directors into three classes, with directors in each class serving staggered three-year terms;
3. To conduct an advisory (non-binding) vote on executive compensation; and
4. To ratify the selection of Rose, Snyder & Jacobs, LLP as independent auditors of the Company for the fiscal year ending September 30, 2015;

The foregoing items of business are more fully described in the Proxy Statement accompanying this Notice. Proposal No. 1 relates solely to the election of the six directors nominated by the Board of Directors and does not include any other matters relating to the election of directors, including, without limitation, the election of directors nominated by any stockholder of the Company.

Only stockholders of record at the close of business on January 9, 2015 are entitled to notice of and to vote at the Annual Meeting.

All stockholders of record are cordially invited to attend the Annual Meeting in person. However, to ensure your representation at the meeting, you are urged to vote via the Internet or telephone as instructed in the Notice Regarding the Internet Availability of Proxy Materials, or to mark, sign, date and return the proxy card as promptly as possible in the postage-prepaid envelope enclosed for that purpose. Any stockholder of record attending the Annual Meeting may vote in person even if such stockholder has previously returned a proxy. Please note, however, that if your shares are held of record by a broker, bank or other nominee and you wish to vote at the meeting, you must obtain a proxy issued in your name from that record holder.

/s/ Jane Davidson

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Jane Davidson  
Secretary

Pasadena, California  
January 27, 2015

**Your vote is important, whether or not you expect to attend the Annual Meeting of Stockholders. Stockholders of record are urged to vote via the Internet or telephone as instructed, or if you are voting by mail, to mark, sign and date and promptly return the proxy in the stamped return envelope provided. Voting promptly will help avoid the additional expense of further solicitation to assure a quorum at the meeting.**

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**Please note, however, that if your shares are held of record by a broker, bank or other nominee and you wish to vote at the meeting, you must obtain a proxy issued in your name from that record holder.**

**Important Notice Regarding the Availability of Proxy Materials for the Stockholder Meeting To Be Held on Tuesday, March 3, 2015**

You may access the following proxy materials at [www.edocumentview.com/ARWR](http://www.edocumentview.com/ARWR)

Notice of the 2015 Annual Meeting of Stockholders;  
Company's 2015 Proxy Statement;  
Company's Annual Report on Form 10-K for the year ended September 30, 2014; and  
Form of Proxy Card

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**ARROWHEAD RESEARCH CORPORATION**  
**225 South Lake Avenue, Suite 1050**  
**Pasadena, California 91101**  
**(626) 304-3400**

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**PROXY STATEMENT FOR ANNUAL MEETING OF STOCKHOLDERS**  
**TO BE HELD ON TUESDAY, MARCH 3, 2015**

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**GENERAL INFORMATION CONCERNING SOLICITATION AND VOTING**

The enclosed Proxy is solicited on behalf of Arrowhead Research Corporation (the “**Company**” or “**Arrowhead**”) for use at the 2015 Annual Meeting of Stockholders (the “**Annual Meeting**”) to be held on Tuesday, March 3, 2015 at 10:00 a.m., local time, and at any adjournment(s) thereof, for the purposes set forth herein and in the accompanying Notice of Annual Meeting of Stockholders (the “**Notice**”). The Annual Meeting will be held at the Sheraton Pasadena, 303 E. Cordova Street, Pasadena, CA 91101.

The Company anticipates that these proxy solicitation materials will first be mailed on or about January 27, 2015 to all stockholders entitled to vote at the Annual Meeting.

**Record Date**

Only holders of record of our voting stock at the close of business on January 9, 2015 (the “**Record Date**”) are entitled to notice of the Annual Meeting and to vote at the Annual Meeting. On that date, the Company had outstanding (i) 54,733,264 shares of common stock (“**Common Stock**”), (ii) 2,300 shares of Series B Convertible Preferred Stock (the “**Series B Preferred Stock**”) and (iii) 16,000 shares of Series C Convertible Preferred Stock (the “**Series C Preferred Stock**”, together the “**Preferred Stock**”). Holders of the Preferred Stock are entitled to vote with the holders of Common Stock on an as-converted basis, subject to the applicable limitations on their rights to convert the Preferred Stock into Common Stock. As of the Record Date, and without regard to conversion limits that may serve to reduce the number of shares eligible to vote at the annual meeting, the Preferred Stock was entitled to vote up to 3,987,206 equivalent shares of Common Stock. The Common Stock and that portion of the Preferred Stock that is entitled to vote at the Annual Meeting is sometimes referred to herein as the “**Voting Stock**.”

**Revocability of Proxies**

Any proxy given by a stockholder of record pursuant to this solicitation may be revoked by the person giving it at any time before its use by delivering to the Secretary of the Company, at or before the taking of the vote at the Annual Meeting, a written notice of revocation or a duly executed proxy bearing a later date or by attending the Annual Meeting and voting in person. Stockholders may also revoke their proxy by entering a new vote over the Internet or by telephone.

**Voting and Solicitation**

Each share of the Company’s Voting Stock is entitled to one vote on all matters presented at the Annual Meeting. Stockholders do not have the right to cumulate their votes in the election of directors. Shares of Voting Stock represented by properly executed proxies will, unless such proxies have been previously revoked, be voted in accordance with the instructions indicated thereon. In the absence of specific instructions to the contrary, properly executed proxies will be voted FOR all matters submitted to a vote of stockholders at the Annual Meeting pursuant to this proxy statement. No business other than that set forth in the accompanying Notice of Annual Meeting of Stockholders is expected to come before the Annual Meeting. Should any other matter requiring a vote of stockholders properly arise, the persons named in the enclosed form of proxy will vote such proxy in accordance with the recommendation of the Board of Directors (the “**Board**”).

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If you will not be able to attend the Annual Meeting to vote in person, you may vote your shares via the Internet or by telephone or by mail as set forth in the Notice.

In addition to proxy solicitation by a proxy solicitor engaged by the Company, if any, proxies may be solicited by certain of the directors, officers and employees of the Company, without additional compensation. The Company will bear the costs of solicitation. In addition, the Company expects to reimburse brokerage firms and other persons representing beneficial owners of shares for their expenses in forwarding solicitation materials to such beneficial owners.

If your shares are held in street name, the voting instruction form sent to you by your broker, bank or other nominee should indicate whether the institution has a process for beneficial holders to provide voting instructions over the Internet or by telephone. A number of banks and brokerage firms participate in a program that also permits stockholders whose shares are held in street name to direct their vote over the Internet or by telephone. If your bank or brokerage firm gives you this opportunity, the voting instructions from the bank or brokerage firm that accompany this proxy statement will tell you how to use the Internet or telephone to direct the vote of shares held in your account. If your voting instruction form does not include Internet or telephone information, please complete and return the voting instruction form in the self-addressed, postage-paid envelope provided by your broker. Stockholders who vote by proxy over the Internet or by telephone need not return a proxy card or voting instruction form by mail.

#### **Quorum; Abstentions; Broker Non-Votes**

The required quorum for the transaction of business at the Annual Meeting is a majority of the votes eligible to be cast by holders of shares of Voting Stock issued and outstanding on the Record Date. Shares that are voted "FOR," "AGAINST" or "ABSTAIN" on a matter are treated as being present at the meeting for purposes of establishing a quorum with respect to such matter. For certain proposals, brokers may not have discretionary authority to vote on a particular matter if they have not received specific instructions from the beneficial owner of the shares ("**broker non-votes**"). Shares subject to a broker non-vote will be counted as present for the purpose of determining the presence or absence of a quorum for the transaction of business at the Annual Meeting; the effect of abstentions and broker non-votes on the proposals presented herein is discussed below.

With regard to the election of directors, votes may be cast in favor of a director nominee or withheld. Because directors are elected by plurality, abstentions from voting and broker non-votes will be entirely excluded from the vote and will have no effect on its outcome. If a quorum is present at the meeting, the nominees receiving the greatest number of votes, up to six directors, will be elected.

Because Proposal No. 2 must be approved by a majority of the outstanding capital stock, abstentions and broker non-votes will have the same effect as a vote against that proposal. Because Proposal Nos. 3 and 4 must be approved by the affirmative vote of a majority of the shares of Voting Stock entitled to vote thereon and present in person or by proxy at the Annual Meeting (the "**Required Vote**"), abstentions will be counted in tabulations of the votes cast on each such proposal and will have the same effect as a vote against the proposal, whereas broker non-votes will be excluded from the vote and will have no effect on its outcome.

#### **Deadline for Receipt of Stockholder Proposals**

Any stockholder who meets the requirements of the proxy rules under the Securities Exchange Act of 1934, as amended (the "**Exchange Act**"), who intends to present a proposal at the Company's 2016 Annual Meeting of Stockholders must ensure that the proposal is received by the Corporate Secretary at Arrowhead Research Corporation, 225 South Lake Avenue, Suite 1050, Pasadena, CA 91101, not later than September 29, 2015, in order to be considered for inclusion in our proxy materials for that meeting; provided, however, that if the Company's 2016 Annual Meeting of Stockholders is held before February 2, 2016 or after April 2, 2016, you must provide specified information to us a reasonable time before we begin to print and send our proxy statement for our 2016 Annual Meeting. Proposals received after the specified dates may be excluded from the Company's proxy statement.

Additionally, our Bylaws provide for notice procedures to recommend a person for nomination as a director or to propose business to be considered by stockholders at a meeting. To be considered timely under these provisions, the stockholder's notice must be received by the Corporate Secretary at our principal executive offices at the address set forth above between 90 and 120 days prior to the one-year anniversary of the date of the 2015 Annual Meeting;

provided, however, that if the 2016 Annual Meeting date is advanced by more than 30 days before or delayed by more than 60 days after the anniversary date of the 2015 Annual Meeting, then stockholders must provide notice within time periods specified in our Bylaws. Our Bylaws also specify requirements as to the form and content of a stockholder's notice.

## PROPOSAL ONE ELECTION OF DIRECTORS

The Board has nominated the following six persons as directors to serve until the 2016 Annual Meeting and until their successors have been duly elected. Each of the nominees is currently a director of Arrowhead. Except as set forth in the biographical information below, none of the nominees is related by blood, marriage or adoption to any other nominee or any executive officer of the Company. The six nominees receiving the greatest numbers of votes at the Annual Meeting will be elected to the six director positions. Unless otherwise instructed, the proxy holders will vote the proxies received by them for the six nominees named below. If any nominee is unable or declines to serve as director at the time of the Annual Meeting, the proxies will be voted for any nominee who is designated by our present Board to fill the vacancy. The table below sets forth, with respect to each nominee for election, his age and current position with Arrowhead, and, if Proposal No. 2 is approved by the Company's stockholders, the class which each nominee shall serve under if elected and the expiration of the term of such director.

**Nominees for Election as Directors.** The Board unanimously adopted a resolution proposing that the Company adopt an Amended and Restated Certificate of Incorporation (the "**A&R Certificate of Incorporation**") and Amended and Restated Bylaws (the "**A&R Bylaws**") that classify the Board into three separate classes, as nearly equal in number as possible, with one class being elected each year to serve a staggered three-year term. The classification of the board and the adoption of the A&R Certificate of Incorporation is conditioned on obtaining stockholder approval as discussed herein under "Proposal Two — Approval of a Classified Board of Directors." Stockholder approval is not required for the adoption of the A&R Bylaws.

Subject to the approval of the A&R Certificate of Incorporation, the terms of office of the Class I, Class II and Class III directors will expire in 2016, 2017 and 2018, respectively.

### OUR BOARD UNANIMOUSLY RECOMMENDS A VOTE "FOR" EACH OF THE NOMINEES LISTED BELOW.

| <u>Name</u>          | <u>Age</u> | <u>Position with Arrowhead</u>                | <u>Classification (Term Expiration)</u> |
|----------------------|------------|---|---|
| Charles P. McKenney* | 76         | Director                                      | Class I (2016)                          |
| Mauro Ferrari**      | 55         | Director                                      | Class I (2016)                          |
| Christopher Anzalone | 45         | Chief Executive Officer, President & Director | Class II (2017)                         |
| Michael S. Perry*    | 55         | Director                                      | Class II (2017)                         |
| Douglass Given       | 62         | Director and Chairman of the Board            | Class III (2018)                        |
| Edward W. Frykman*   | 78         | Director                                      | Class III (2018)                        |

\* Member of the Audit Committee, Compensation Committee and Nomination Committee.

\*\* Member of the Compensation Committee and Nomination Committee

If the A&R Certificate of Incorporation is not approved, each nominee, if elected at the Annual Meeting, will serve as a director until the earlier of the 2016 Annual Meeting of the Company's stockholders or until his successor is duly elected and qualified.

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**Dr. Christopher Anzalone** has been President, Chief Executive Officer and Director of the Company since December 1, 2007. In 2005, Dr. Anzalone formed and served as CEO of the Benet Group LLC, a private equity firm focused on creating and building new nano-biotechnology companies from university-generated science. Prior to his tenure at the Benet Group, from 1999 until 2003, he was a partner at the Washington, DC-based private equity firm Galway Partners, LLC, where he was responsible for sourcing, structuring, and building new business ventures. Dr. Anzalone holds a Ph.D. in Biology from UCLA and a B.A. in Government from Lawrence University. We believe Dr. Anzalone's qualifications to serve on the Board include his deep understanding of the business through his role as Chief Executive Officer; in addition, Dr. Anzalone has extensive experience in biotechnology, nanotechnology, company-building and venture capital.

**Dr. Mauro Ferrari** was appointed to the Arrowhead Board of Directors in 2010. Dr. Ferrari is the President and CEO of The Houston Methodist Hospital Research Institute (TMHRI), Executive Vice President of Houston Methodist Hospital, and Senior Associate Dean of Weill Cornell Medical College in New York. He is also the President of The Alliance for NanoHealth. Dr. Ferrari is an internationally recognized expert in nanomedicine and biomedical nanotechnology. Prior to assuming leadership of TMHRI, Dr. Ferrari was Professor and Chairman of The Department of NanoMedicine and Biomedical Engineering at The University of Texas Health Science Center at Houston, Professor of Experimental Therapeutics at the MD Anderson Cancer Center, Adjunct Professor of Bioengineering at Rice University, and Adjunct Professor of Biomedical Engineering at the University of Texas in Austin. His previous academic appointments include tenured professorships at UC Berkeley and The Ohio State University.

From 2003 to 2005, Dr. Ferrari served as Special Expert on Nanotechnology and Eminent Scholar at The National Cancer Institute, where he led in the development of NCI's program in Nanotechnology, which remains the largest program in NanoMedicine in the world. Dr. Ferrari has been serving as the Editor-in-Chief for "Biomedical Microdevices: BioMEMS and Biomedical Nanotechnology" since 1997. We believe Dr. Ferrari's qualifications to serve on the Board include his extensive training and experience in the fields of nanotechnology, biotechnology and biomedical applications. Dr. Ferrari has significant technical training, several academic appointments, over 300 published articles, over 30 issued patents, and is the recipient of most prestigious academic awards in nanomedicine and drug delivery technology. Additionally, Dr. Ferrari has extensive experience in developmental stage organizations having founded several startup companies.

**Edward W. Frykman** has been a director of the Company since January 2004. Mr. Frykman was an Account Executive with Crowell, Weedon & Co., a position he held from 1992 until 2008 when he retired. Before his service at Crowell, Weedon & Co., Mr. Frykman served as Senior Vice President of L.H. Friend & Co. Both Crowell Weedon & Co. and L.H. Friend & Co. are investment brokerage firms located in Southern California. In addition, Mr. Frykman was a Senior Account Executive with Shearson Lehman Hutton, where he served as the Manager of the Los Angeles Regional Retail Office of E. F. Hutton & Co. Mr. Frykman is also a director of Acacia Research Corporation, a publicly-held corporation based in Newport Beach, California. We believe Mr. Frykman's qualifications to serve on the Board include his long tenure as a member of the Board which enabled Mr. Frykman to gain a deep understanding of the company's operations, strategy and finances. Mr. Frykman also has extensive experience in the fields of finance and public company oversight.

**Dr. Douglass Given** has been a director of the company since November 2010. Dr. Given is the founder and managing partner of G5 Partners LLC and an Advisor to Bay City Capital LLC, a San Francisco based Life Sciences Venture Capital firm. He joined Bay City in 2000, served as a General Partner and Investment Partner from 2004-2014, and participated in more than 50 investments. He has co-founded 14 startup companies. He formerly held positions as Corporate Senior Vice President and Chief Technology Officer at Mallinckrodt, Vice President at Schering Plough, Vice President at Monsanto/GD Searle and Medical Advisor at Lilly. He has been a Director at 8 public and 8 private companies and is currently Chairman at Arrowhead, Vivaldi Biosciences Inc and Medical eXcellence Inc. He has held positions as CEO at Progenitor Inc, Mercator Genetics Inc, NeoRx Corp, VIA Pharmaceuticals Inc, and Vivaldi Biosciences Inc. Dr. Given has been a member of the University of Chicago Medical Center and Pritzker School of Medicine Visiting Committee since 1995 and served as its Chair from 2007-2013.

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Additional University of Chicago activities include the Center for Global Health External Advisory Board and Investment Committee for the Innovation Fund. He is a member of the Johns Hopkins Bloomberg School of Public Health Advisory Board and its Development Committee and Innovation and Commercialization Committee. He is a member of the Harvard School of Public Health International Advisory Council and the Stanford Medicine Community Council. He received his MD & PhD from the University of Chicago and MBA from the Wharton School, University of Pennsylvania. Dr. Given was a Clinical and Research Fellow in Internal Medicine and Infectious Diseases at Massachusetts General Hospital and Harvard Medical School. We believe Dr. Given's qualifications to serve on the Board include his extensive experience as a physician scientist, in finance and business transactions, particularly investments in the life sciences industry as well as directorship roles in biopharmaceutical companies. Dr. Given also has significant leadership roles, including CTO and Senior Vice President, at several large pharmaceutical companies. Dr. Douglass Given is a brother of Dr. Bruce Given, our chief operating officer.

**Charles P. McKenney** has been a director of the Company since April 2004. Mr. McKenney is retired from a government affairs law practice in Pasadena, California that he maintained from 1989 until 2014, representing businesses and organizations in their relations with state and local government regarding their obligations under state and local land use and trade practices laws. From 1973 through 1989, he served as Attorney for Corporate Government Affairs for Sears, Roebuck and Co., helping organize and carry out Sears's western state and local government relations programs. Mr. McKenney has served two terms on the Pasadena, California City Council as well as on several city boards and committees, including three city Charter Reform Task Forces. We believe Mr. McKenney's qualifications to serve on the Board include his long tenure as a member of the Board resulting in a deep understanding of the Company's operations, strategy and finances. Mr. McKenney also has extensive experience providing strategic legal and advisory services to developmental stage organizations.

**Dr. Michael S. Perry** joined Arrowhead's Board of Directors in December 2011. Dr. Perry is currently Chief Scientific Officer, Global Cell and Gene Therapy at Novartis Pharma. Prior to his appointment at Novartis, Dr. Perry was a Venture Partner with Bay City Capital LLP from 2005 until November 2012 and President and Chief Medical Officer of Poniard Pharmaceuticals from 2010 to November 2012. He also currently serves as a member of the board of directors of AmpliPhi Biosciences Corporation and Avita Medical. He was Chief Development Officer at VIA Pharmaceuticals, Inc., a publicly held drug development company, from April 2005 until May 2009. Prior thereto, he served as Chairman and Chief Executive Officer of Extropy Pharmaceuticals, Inc., a privately held pediatric specialty pharmaceutical company, from June 2003 to April 2005. From 2002 to 2003, Dr. Perry served as President and Chief Executive Officer of Pharsight Corporation, a publicly held software and consulting services firm. From 2000 to 2002, Dr. Perry served as Global Head of Research and Development for Baxter BioScience. From 1997 to 2000, Dr. Perry was President and Chief Executive Officer of both SyStemix Inc. and Genetic Therapy Inc., two wholly owned subsidiaries of Novartis Corp. and from 1994 to 1997, he was Vice President of Regulatory Affairs for Novartis Pharma (previously Sandoz Pharmaceuticals). Prior to 1994, Dr. Perry held various management positions with Syntex Corporation, Schering-Plough Corporation and BioResearch Laboratories, Inc. Dr. Perry holds a Doctor of Veterinary Medicine, a Ph.D. in Biomedical Pharmacology and a B.Sc. in Physics from the University of Guelph, Ontario, Canada. He is a graduate of the International Management Program at Harvard Business School. We believe Dr. Perry's qualifications to serve on the board include his medical expertise and his extensive experience in preclinical and clinical drug development, including executive level leadership roles in several publicly held biotech companies.

#### **Corporate Governance Policies and Practices**

The following is a summary of our corporate governance policies and practices:

- The positions of Chairman of the Board and Chief Executive Officer are separated, which allows our Chief Executive Officer to focus on our day-to-day business, while allowing the Chairman of the Board to lead the Board in its fundamental role of providing advice to and oversight of management. While our Bylaws do not require that our Chairman and Chief Executive Officer positions be separate, our Board believes that having separate positions is the appropriate leadership structure for us at this time and demonstrates our commitment to good corporate governance.



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- A majority of the members of the Board are independent directors, as defined by the NASDAQ Marketplace Rules. The Board has determined that all of the Company's directors are independent, except Dr. Anzalone, due to his employment relationship with the Company, and Dr. Given, who is the brother of Bruce Given, the Company's Chief Operating Officer. Non-employee directors do not receive consulting or other fees from the Company, other than Board and Committee compensation.
  - The Board has overall responsibility for the oversight of the Company's risk management process, which is designed to support the achievement of organizational objectives, including strategic objectives, to improve long-term organizational performance and enhance stockholder value. Risk management includes not only understanding company-specific risks and the steps management implements to manage those risks, but also what level of risk is acceptable and appropriate for the Company. Management is responsible for establishing our business strategy, identifying and assessing the related risks and implementing appropriate risk management practices. The Board regularly reviews our business strategy and management's assessment of the related risk, and discusses with management the appropriate level of risk for the Company.
  - All of the Company's employees, officers and directors are subject to the Company's Code of Business Conduct and Ethics Policy, which is available on the Company's website at [www.arrowheadresearch.com](http://www.arrowheadresearch.com). The ethics policy meets the requirements of the NASDAQ Marketplace Rules, as well as the code of ethics requirements of the SEC.
  - The Audit, Compensation and Nomination Committees consist entirely of independent directors.
  - The independent directors meet separately in executive session on a regular basis to discuss matters relating to the Company and the Board, without members of the management team present.
  - The Board reviews at least annually the Company's business initiatives, capital projects and budget matters.
  - The Audit Committee reviews and approves all related-party transactions or, if the size and nature of the transaction warrants, a special committee of non-related Board members is formed to negotiate and approve the transaction.

#### **Stockholder Communications with Directors**

Stockholders who wish to communicate with the Board or any individual director can write to: Jane Davidson, Corporate Secretary, Arrowhead Research Corporation, 225 South Lake Avenue, Suite 1050, Pasadena, CA 91101. Your letter should indicate that you are an Arrowhead stockholder. Depending on the subject matter, management will:

- Forward the communication to the director or directors to whom it is addressed;
- Forward the communication to the Chairman of the Board, if addressed to the board of directors; or
- If not addressed to any director or directors, attempt to handle the inquiry directly (for example, requests for information or stock-related matters).

#### **Board Meetings and Committees**

The Board held a total of seven meetings during the fiscal year ended September 30, 2014. The Board has three standing committees: an Audit Committee, a Compensation Committee, and a Nomination Committee.

The functions of the Audit Committee are to select independent public accountants, to review the scope and results of the year-end audit with management and the independent auditors, to review the Company's accounting principles and its system of internal accounting controls, to review the Company's annual and quarterly reports before filing with the Securities and Exchange Commission, and to review any related-party transactions. The Audit Committee met four times during fiscal 2014. The current members of the Audit Committee are Edward W. Frykman, Chairman, Charles P. McKenney, and Michael S. Perry. The Board has determined that all members of the Audit Committee are independent directors under the Rules of the SEC and the listing standards of the NASDAQ Marketplace Rules and are financially literate. The Board has determined that Mr. Frykman is an "audit committee financial expert" in accordance with the applicable regulations. The Audit Committee Charter is available on the Company's website at [www.arrowheadresearch.com](http://www.arrowheadresearch.com).

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The functions of the Compensation Committee are to review the goals and achievements of the Company and the Chief Executive Officer for the prior year and approve the goals of the Company and the Chief Executive Officer for the next year, to review and approve salaries, bonuses and other benefits payable to the Company's executive officers and to administer the Company's 2004 Equity Incentive Plan and 2013 Incentive Plan. The Compensation Committee is specifically responsible for determining the compensation of the Chief Executive Officer and the other executive officers. The Compensation Committee reviews compensation recommendations made by the Chief Executive Officer for other senior executives of the Company at least annually; the Chief Executive Officer is not present during discussions or deliberations regarding his compensation. The Compensation Committee engaged a consultant to provide advice and guidance with regard to compensation for our named executive officers for fiscal 2014. The Compensation Committee met three times during fiscal 2014. The current members of the Compensation Committee are Michael S. Perry, Chairman, Edward Frykman, Charles P. McKenney, and Mauro Ferrari. The Board has determined that all members of the Compensation Committee are independent directors under the listing rules of the NASDAQ Marketplace Rules. The Compensation Committee's charter is available on the Company's website at [www.arrowheadresearch.com](http://www.arrowheadresearch.com). The Committee has not delegated any of its responsibilities or authorities granted under its charter.

The Nomination Committee is responsible for proposing a slate of directors for election by the stockholders at each Annual Stockholders Meeting and for proposing candidates to fill any vacancies. The Nomination Committee met once during fiscal 2014. The current members of the Nomination Committee are Michael S. Perry, Chairman, Edward Frykman, Charles P. McKenney and Mauro Ferrari. The Nomination Committee's charter is available on the Company's website at [www.arrowheadresearch.com](http://www.arrowheadresearch.com). The Nomination Committee manages the process for evaluating current Board members at the time they are considered for re-nomination. After considering the appropriate skills and characteristics required on the Board, the current makeup of the Board, the results of the evaluations, and the wishes of the Board members to be re-nominated, the Nomination Committee recommends to the Board whether those individuals should be re-nominated.

On at least an annual basis, the Nomination Committee reviews with the Board whether it believes the Board would benefit from adding new members and, if so, the appropriate skills and characteristics required for any new members. If the Board determines that a new member would be beneficial, the Nomination Committee solicits and receives recommendations for candidates and manages the process for evaluating candidates. All potential candidates, regardless of their source, are reviewed under the same process. The Nomination Committee (or its chairman) screens the available information about the potential candidate(s). Based on the results of the initial screening, interviews with viable candidates are scheduled with Nomination Committee members, other members of the Board and senior members of management. Upon completion of these interviews and other due diligence, the Nomination Committee may recommend to the Board the election or nomination of a candidate.

Candidates for independent Board member positions have historically been identified through recommendations from directors or others associated with the Company. Arrowhead stockholders may also recommend candidates by sending the candidate's name and resume to the Nomination Committee pursuant to the procedures, set forth above, for communication with the Board. As described above, our Bylaws also provide for separate notice procedures to recommend a person for nomination as a director to be considered by stockholders at a meeting, including requirements as to the timing, form and content of a stockholder's notice.

The Nomination Committee has no predefined minimum criteria for selecting Board nominees, although it believes that all independent directors should share qualities such as independence, business experience at the corporate level, relevant non-competitive experience, and strong communication and analytical skills. In any given search, the Nomination Committee may also define particular characteristics for candidates to balance the overall skills and characteristics of the Board and the needs of the Company. However, during any search, the Nomination Committee reserves the right to modify its stated search criteria for exceptional candidates. While the Board does not have a policy with regard to consideration of diversity for selecting candidates, the Nomination Committee may consider diversity, including diversity with respect to experience, skill set, age, areas of expertise and professional background, as well as race, gender, national origin and any other criteria deemed appropriate by the Nomination Committee.

No incumbent director attended fewer than 75% of the aggregate of (i) the total number of meetings of the Board held during fiscal 2014, and (ii) the total number of meetings held by all committees of the Board during fiscal 2014 on which such person served.

In addition, the majority of the directors attended the 2014 Annual Meeting of Stockholders. It is the Company's policy to encourage, but not require, that all directors attend our annual stockholder meetings.

### FISCAL 2014 DIRECTOR COMPENSATION

#### Director Compensation

Directors who are also employees of the Company receive no separate compensation from the Company for their service as members of the Board. Effective in the second quarter of fiscal 2014, our non-employee chairman of the board receives a cash retainer of \$70,000 per year; other non-employee directors receive a cash retainer of \$45,000 per year, paid quarterly. In 2014, non-employee directors received a grant of 15,000 restricted stock units which vest on the one year anniversary of the date of grant. The Non-employee Chairman received an additional grant of 5,000 restricted stock units. Dr. Given received an additional \$80,000 in board fees for his service on a special short term Corporate Development Committee from February to December 2014. Prior to the increase in board fees effective in the second quarter of fiscal 2014, non-employee directors received a cash retainer of \$37,500 per year, paid quarterly. Dr. Given received an additional payment of \$1,250 quarterly for his service as Chairman. Based on the policies of his current employer, Dr. Ferrari currently declines to accept cash or equity compensation. Dr. Ferrari may elect to receive compensation in the future. The following table sets forth the total compensation paid to our non-employee directors in fiscal 2014. Dr. Anzalone's compensation is set forth below in the Summary Compensation Table.

| Name             | Fee Earned        |                      | Total (\$) |
|------------------|-------------------|----------------------|------------|
|                  | Paid in Cash (\$) | or Stock Awards (\$) |            |
| Douglass Given   | \$ 143,125        | \$290,800            | \$433,925  |
| Edward Frykman   | \$ 43,125         | \$218,100            | \$261,225  |
| Charles McKenney | \$ 43,125         | \$218,100            | \$261,225  |
| Michael S. Perry | \$ 43,125         | \$218,100            | \$261,225  |
| Mauro Ferrari    | \$ —              | \$ —                 | \$ —       |

- (1) Each non-employee director received a grant of 15,000 restricted stock units ("RSUs"). Dr. Given received an additional grant of 5,000 units for his service as Chairman of the Board. Dr. Ferrari has declined to accept compensation at this time due to his obligations to his employer.
- (2) This column represents the total grant date fair value, computed in accordance with ASC 718, of restricted stock units granted during fiscal year 2014, based on the number of RSUs granted multiplied by the grant date fair value of \$14.54, which is equal to the closing price of our Common Stock on the grant date.
- (3) RSUs to non-employee directors vest one year from date of grant.

#### Vote Required; Recommendation of the Board

The six nominees receiving the greatest numbers of votes at the meeting, assuming a quorum is present, will be elected to the six director positions to serve until their terms expire or until their successors have been duly elected and qualified. Because directors are elected by plurality, abstentions from voting and broker non-votes will be entirely excluded from the vote and will have no effect on its outcome.

### THE BOARD UNANIMOUSLY RECOMMENDS A VOTE "FOR" EACH OF THE NOMINEES FOR DIRECTOR IN PROPOSAL ONE.

#### PROPOSAL TWO APPROVAL OF A CLASSIFIED BOARD OF DIRECTORS

The Board has unanimously adopted a resolution proposing an A&R Certificate of Incorporation adding a new Article NINTH that classifies the Board into three classes with staggered terms of office, incorporating all prior amendments to the Company's Certificate of Incorporation, and making certain non-substantive conforming

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changes. The Board has also unanimously adopted a resolution adopting, subject to stockholder approval of the A&R Certificate of Incorporation, the A&R Bylaws which will amend Section 2.2 of the Bylaws to create a classified Board as provided for in the proposed A&R Certificate of Incorporation. If Proposal No. 2 is adopted by the stockholders, the A&R Bylaws will replace the Company's current Bylaws. Because bylaw amendments can be adopted by board action alone, a separate stockholder vote is not being sought on the proposed bylaw amendments that would be made concurrent with the adoption of the A&R Certificate of Incorporation.

As of January 9, 2015, the Board consists of a single class of six directors. All of the Company's directors are elected at each Annual Meeting of Stockholders, unless a vacancy occurs during the year (which could be created through expanding the size of the Board, for example) and the Nomination Committee finds a candidate to fill the vacancy. In such a case, the Nomination Committee would present the candidate to the Board of Directors for approval and appointment. The candidate would serve until he or she is elected by the Stockholders at the next Annual Meeting. If approved, the A&R Certificate of Incorporation would classify the Board into three separate classes, as nearly equal in number as possible, with one class being elected each year to serve a staggered three-year term. However, for the initial terms immediately following the division of the Board into three classes, directors would be assigned terms of one, two or three years, as described below.

The directors initially elected in Class I (Charles McKenney and Mauro Ferrari) would serve until the 2016 Annual Meeting of Stockholders, or until their respective successors have been elected and have qualified, or until their earlier death, resignation, retirement or removal. The directors initially elected in Class II (Michael S. Perry and Christopher Anzalone) would serve until the 2017 Annual Meeting of Stockholders, or until their respective successors have been elected and have qualified, or until their earlier death, resignation, retirement or removal. The directors initially elected in Class III (Douglass Given and Edward Frykman) would serve until the 2018 Annual Meeting of Stockholders, or until their respective successors have been elected and have qualified, or until their earlier death, resignation, retirement or removal.

If Proposal No. 2 is approved, beginning with the election of directors to be held at the 2016 Annual Meeting of Stockholders, the class of directors to be elected in such year would be elected for a three-year term, and at each successive annual meeting, the class of directors to be elected in such year would be elected for a three-year term so that the term of office of one class of directors shall expire in each year.

If the stockholders approve Proposal No. 2 at the Annual Meeting, Article NINTH of the A&R Certificate of Incorporation will read as set forth below:

The Board shall be classified, with respect to the time for which the directors severally hold office, into three classes, as nearly equal in number as possible, the first class, designated "Class I," to hold office initially for a term expiring at the annual meeting of stockholders to be held in 2016, the second class, designated "Class II," to hold office initially for a term expiring at the annual meeting of stockholders to be held in 2017, and the third class, designated "Class III," to hold office initially for a term expiring at the annual meeting of stockholders to be held in 2018, with members of each class to hold office until their successors are elected and qualified or until their earlier death, resignation, retirement or removal. At each annual meeting of the stockholders of the Corporation, the successors to the class of directors whose term expires at that meeting shall be elected to hold office for a term expiring at the annual meeting of stockholders held in the third year following the year of their election. If the number of directors which constitutes the whole Board is changed, any increase or decrease shall be apportioned among the classes so as to maintain the number of directors in each class as nearly equally as possible, and any additional director of any class elected to fill a vacancy resulting from an increase in such class shall hold office for a term that coincides with the remaining term of that class, but in no event shall a decrease in such number of directors shorten the term of any incumbent director. Any director chosen to fill a vacancy not resulting from an increase in the number of directors shall hold office until the next election of the class for which such director has been chosen, and until that director's successor has been elected and has qualified or until such director's earlier death, resignation, retirement or removal.

In addition to making the change set forth above, the A&R Certificate of Incorporation will incorporate all prior amendments to the Company's Certificate of Incorporation and will contain certain non-substantive conforming changes. The complete text of the proposed A&R Certificate of Incorporation is attached hereto as Exhibit A.

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## **Background**

The classified board amendment is designed to assure continuity and stability in the Board's leadership and policies by ensuring that at any given time a majority of the directors will have prior experience with the Company and, therefore, will be familiar with its business and operations. The Company has not experienced continuity problems in the past and the Board wishes to ensure that the Board's past continuity will continue. The Board believes that the stability in the Board of Directors' leadership and policies in the past has helped to promote the creation of long-term stockholder value. The Board also believes that the classified board amendment will assist the Board in protecting the interests of the Company's stockholders in the event of an unsolicited offer for the Company by encouraging any potential acquirer to negotiate directly with the Board.

To preserve the classified board structure, the A&R Certificate of Incorporation also provides that a director elected by the Board of Directors to fill a vacancy holds office until the next election of the class for which such director has been chosen, and until that director's successor has been elected and qualified or until his or her earlier death, resignation, retirement or removal. Delaware law provides that, if a corporation has a classified board, unless the corporation's Certificate of Incorporation specifically provides otherwise, the directors may only be removed by the stockholders for cause. The A&R Certificate of Incorporation would not provide for removal of directors other than for cause. Therefore, if Proposal No. 2 is approved, stockholders would be able to remove directors of the Company for cause, but not in other circumstances. Presently, all of the directors of the Company are elected annually and all of the directors may be removed, with or without cause, by a majority of the voting power of the Company.

Unless a director is removed or resigns, three annual elections would be needed to replace all of the directors on the classified Board. The classified board amendment may, therefore, discourage an individual or entity from acquiring a significant position in the Company's stock with the intention of obtaining immediate control of the Board. If this Proposal No. 2 is approved, these provisions will be applicable to each annual election of directors, including the elections following any change of control of the Company.

The Company is not aware of any present or threatened third-party plans to gain control of the Company, and the classified board amendment is not being recommended in response to any such plan or threat. Rather, the Board is recommending the classified board amendment as part of its periodic review of the Company's key governance mechanisms and to assist in assuring fair and equitable treatment for all of the Company's stockholders in hostile takeover situations. The Board has no present intention of soliciting a stockholder vote on any other proposals relating to a possible takeover of the Company.

The classified board amendment may increase the amount of time required for a takeover bidder to obtain control of the Company without the cooperation of the Board, even if the takeover bidder were to acquire a majority of the voting power of the Company's outstanding Common Stock. Without the ability to obtain immediate control of the Board, a takeover bidder will not be able to take action to remove other impediments to its acquisition of the Company. Thus, the classified board amendment could discourage certain takeover attempts, perhaps including some takeovers that stockholders may feel would be in their best interests. Further, the classified board amendment will make it more difficult for stockholders to change the majority composition of the Board, even if the stockholders believe such a change would be desirable. Because of the additional time required to change the control of the Board, the classified board amendment could be viewed as tending to perpetuate present management.

Although this proposal could make it more difficult for a hostile bidder to acquire control over the Company, the Board of Directors believes that by forcing potential bidders to negotiate with the Board for a change of control transaction, the Board will be better able to maximize stockholder value in any change of control transaction.

## **Vote Required; Recommendation of the Board**

Proposal No. 2 must be approved by the affirmative vote of a majority of the shares of Voting Stock entitled to vote thereon. For this purpose, abstentions and broker non-votes will be counted as a vote against the proposal.

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**THE BOARD UNANIMOUSLY RECOMMENDS A VOTE “FOR” PROPOSAL TWO.**

**PROPOSAL THREE  
ADVISORY VOTE ON EXECUTIVE COMPENSATION**

The compensation paid to our NEO's is described below in the Compensation Discussion and Analysis on pages 11 through 19 of this proxy statement for the fiscal year ended September 30, 2014. The Board of Directors is asking stockholders to cast a non-binding, advisory vote FOR the following resolution:

“RESOLVED, that the compensation paid to the Company's named executive officers, as disclosed pursuant to Item 402 of Regulation S-K, as set forth in the compensation tables and narrative discussion, is hereby APPROVED.”

Although the vote we are asking you to cast is non-binding, the Compensation Committee and the Board value the views of our stockholders and will consider the outcome of the vote when determining future compensation arrangements for our named executive officers.

**Vote Required; Recommendation of the Board**

Proposal No. 3 must be approved by the Required Vote, assuming a quorum is present. For this purpose, abstentions will be counted as a vote against the proposal, while broker non-votes will have no effect on the outcome of the vote.

**THE BOARD UNANIMOUSLY RECOMMENDS A VOTE “FOR” PROPOSAL THREE.**

**EXECUTIVE COMPENSATION**

**Compensation Discussion and Analysis**

The following compensation discussion and analysis describes the material elements of compensation received for fiscal 2014 by each of the executive officers identified below in the Summary Compensation Table, who are referred to collectively as our “named executive officers.” Our named executive officers with respect to the fiscal year that ended on September 30, 2014 were Christopher Anzalone, President and Chief Executive Officer; Bruce Given, Chief Operating Officer, Kenneth Myszkowski, Chief Financial Officer, David Lewis, Chief Scientific Officer and Peter Leone, Vice President, Program Management and Strategy. Although the Company's fiscal year ends September 30 of each year, the Company's compensation is based on a calendar year. The tables and information presented in this Compensation and Analysis and the Executive Compensation tables that follow generally refers to compensation earned in the fiscal year. Thus, salaries are reported for the twelve months ending September 30, 2014. Bonuses reflect amounts earned for the period ending December 31, 2013 and paid in early 2014.

***Compensation Philosophy and Objectives***

Our philosophy in setting compensation policies for executive officers has two fundamental objectives: (1) to attract, motivate and retain a highly skilled team of executives and (2) to align our executives' interests with those of our stockholders by rewarding short-term and long-term performance and aligning compensation to increases in stockholder value. The Compensation Committee believes that executive compensation should be directly linked both to continuous improvements in corporate performance (“pay for performance”) and the achievement of specific objectives that are expected to increase stockholder value. In furtherance of this goal, the Compensation Committee has established the following guidelines as a foundation for compensation decisions:

- provide a competitive total compensation package that enables the Company to attract and retain highly qualified executives with the skills and experience required for the achievement of business goals;

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- promote the achievement of key strategic and financial performance measures by linking short-term and long-term compensation to the achievement of measurable goals;
  - reward significant achievements outside of predetermined goals;
  - recognize that pharmaceutical research, development and commercialization require sustained and focused effort over many years, and involve a high degree of risk and therefore balance incentives for annual and long-term compensation;
  - employ outside compensation expertise and market data from industry peers to assure that the Company's compensation practices are consistent with industry practice and meet the Company's goals for its compensation program;
  - consider the Company's cash resources and cost of capital to balance cash and equity compensation; and
  - align executives' incentives with the creation of stockholder value.

The executive compensation program consists of three key elements: base salary, performance bonus and equity-based compensation. The Compensation Committee believes that cash compensation in the form of base salary and performance bonuses provides our executives with short-term rewards for success in operations, and that long-term compensation through the award of stock options and restricted stock units aligns the objectives of management with those of our stockholders with respect to long-term performance and success.

The Compensation Committee also focuses on the Company's financial and working capital condition when making compensation decisions and approving performance objectives. Because the Company has sought to preserve cash and currently does not operate at a profit, overall compensation is weighted more heavily toward equity-based compensation. Thus, a significant portion of each executive's compensation is at risk, and dependent on the increase in the value of the company's stock and the satisfaction of other performance criteria. The Compensation Committee will continue to periodically reassess the appropriate weighting of cash and equity compensation as the Company development programs mature.

In reviewing the compensation structure for fiscal 2014, the Compensation Committee also considered how the Company's compensation policies may affect the Company's risk profile and whether compensation policies and practices may encourage undue risk-taking by employees. More specifically, the Compensation Committee considered the general design philosophy of the Company's policies for employees whose conduct would be most affected by incentives established by compensation policies. In considering these issues, the Compensation Committee concluded that the use of performance-based bonuses and long-term equity awards did not appear to create undue risks for the Company or encourage excessive risk-taking behavior on the part of named executive officers.

With respect to bonus awards for our executive officers, the amount of an individual's award depends principally on overall Company performance, as determined by the Compensation Committee, which reduces the ability and incentive for an individual to take undue risks in an effort to increase the amount of his or her bonus award. The Company's performance goals are reviewed regularly by the Compensation Committee and the Board of Directors and are considered to be generally of the nature that would not encourage or reward excessive risk taking. Additionally, the Board has the ability to intervene in instances where actions by the Company vis-à-vis Company performance goal attainment would be considered unduly risky to prevent or penalize such actions.

With respect to equity awards, these awards typically vest over a period of two to four years, meaning that long-term value creation, contrasted with short-term gain, presents the best opportunity for employees to profit from these awards. The Company has not historically issued equity awards with specific performance based vesting conditions in addition to or in lieu of time-based vesting conditions, imposed claw-back provisions or holding periods for vested awards, although the Compensation Committee considers from time to time whether such mechanisms might be appropriate in the future as the Company's development programs progress.

#### ***Procedures and Policies***

The Compensation Committee reviews executive compensation annually. The Compensation Committee draws on a number of resources to assist in the evaluation of the various components of the Company's executive compensation program including, but not limited to, advice of an independent compensation consultant, and information provided in the public filings of industry peers and industry data compiled yearly by Radford in its Global Life Sciences Survey, which represents a nationally-based assessment of executive compensation widely

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used within the pharmaceutical and biotechnology industry sectors. While we do not position compensation levels based upon a specific or target level relative to a peer group or other companies, pay practices at other companies are an important factor that the Compensation Committee considers in assessing the reasonableness of compensation and ensuring that our compensation practices are competitive in the marketplace.

### ***Roles in Determining Compensation***

#### *Compensation Committee*

The Board has delegated to the Compensation Committee the responsibility to ensure that total compensation paid to our executive officers, including named executive officers, is consistent with our compensation policy and objectives. The Compensation Committee's charter is available on the Company's website at [www.arrowheadresearch.com](http://www.arrowheadresearch.com). The Compensation Committee oversees and approves all compensation arrangements and actions for our executive officers and other key employees, including the named executive officers. While the Compensation Committee draws on a number of resources, including input from the Chief Executive Officer and independent compensation consultants, to make decisions regarding the Company's executive compensation program, ultimate decision-making authority rests with the Compensation Committee. The Compensation Committee retains discretion over base salary, annual incentive bonus, equity compensation and other compensation considerations for our named executive officers. The Compensation Committee relies upon the judgment of its members in making compensation decisions, after reviewing the performance of the Company and evaluating an executive's performance during the year against Company goals, operational performance, and business responsibilities. In addition, the Compensation Committee incorporates judgment in the assessment process to respond to and adjust for the evolving business environment.

During 2014, Dr. Perry served as Chairman of the Compensation Committee, and Mr. Frykman, Mr. McKenney and Dr. Ferrari served as members. The Company's Board of Directors has determined that all of the Compensation Committee members are "independent" directors for all required legal purposes, including pursuant to Nasdaq's definition of independence. The members have extensive experience in executive management, as well as compensation practices and policies.

#### *Compensation Consultant*

The Compensation Committee has retained the services of an external compensation consultant, StreeterWyatt LLC ("StreeterWyatt"). The mandate of StreeterWyatt is to assist the Compensation Committee in its review of executive and director compensation practices, including the competitiveness of pay levels, executive compensation design, benchmarking with the Company's peers in the industry and other technical considerations. The Compensation Committee has evaluated StreeterWyatt's performance, considered alternative compensation consultants and has the final authority to engage and terminate the StreeterWyatt's services. The decision to engage StreeterWyatt was not made or recommended by the Company's management. The Compensation Committee, after a review of the factors set forth in Section 10C-1 of the Securities Exchange Act of 1934, has determined that the work performed by StreeterWyatt in 2014 does not present any conflicts of interest.

In October 2013, the Compensation Committee first retained the services of StreeterWyatt to advise the committee on the Company's overall compensation practices, including the following: (i) establishment of a peer group of companies to use in compensation analysis (ii) assessment of compensation levels and mix of compensation elements for the Company's executive officers and vice presidents, (iii) executive compensation and governance trends based on peer group practices and market trends, (iv) development of company-wide cash and equity grant ranges based on the Company's job classification structure, and (v) adoption of an equity incentive plan as a successor to the Company's 2004 Stock Incentive Plan.

In September 2014, the Compensation Committee again retained the services of StreeterWyatt in order to (i) assess compensation levels and mix of elements for the Company's executive officers and other key employees, (ii) review the peer group companies selected in 2013 and recommend any changes, and (iii) advise the committee on executive compensation and governance trends based on peer group trends and market practices.

#### *Chief Executive Officer*

The Chief Executive Officer attends Compensation Committee meetings and works with the Compensation Committee Chairman and StreeterWyatt to develop compensation recommendations for the executive officers (excluding the Chief Executive Officer), based upon individual experience and breadth of knowledge, internal



considerations, individual performance during the fiscal year and other factors deemed relevant by the Compensation Committee. The recommendations are then submitted to the Compensation Committee for review and consideration. The Compensation Committee works directly with StreeterWyatt to determine compensation actions for the Chief Executive Officer; the Chief Executive Officer does not participate in Compensation Committee discussions relating to his compensation.

As part of the review process, the Chief Executive Officer makes recommendations to the Compensation Committee with respect to the compensation levels for individual executives other than himself based on the performance evaluation conducted by each executive's manager. The Compensation Committee reviews this information and adjusts or approves the recommendations as appropriate. In addition, for each named executive officer, the Compensation Committee considers the Company's performance against annual and longer term objectives, market data regarding executive compensation at comparable companies and realized and realizable values under previous equity awards.

In the case of the Chief Executive Officer, the Compensation Committee evaluates his performance against the Company's annual goals and longer term objectives pre-established by the Board of Directors, together with market data regarding executive compensation at comparable companies and realized and realizable values under previous equity awards.

### ***Comparative Analysis***

The Compensation Committee engaged StreeterWyatt to conduct a benchmarking study reporting on compensation levels and practices, including equity, relative to industry peers. The findings were presented to the Committee by StreeterWyatt in December 2013 and StreeterWyatt provided a competitive assessment of the Company's executive compensation program as compared to the market data for base salaries, target total cash compensation and equity compensation. As a general rule, the Compensation Committee considered NEO compensation relative to the peer group median, however, various other factors were taken into account in determining compensation and the Compensation Committee does not target compensation at any specific level relative to the peer group. Such factors include past performance and scope of the NEO's actual role relative to the normal scope associated with that particular job among the peer group companies. In consideration of these factors, the market data and StreeterWyatt's assessment of the Company's executive compensation programs, as well as the Company's performance in fiscal 2013, adjustments to compensation were made in the first calendar quarter of 2014, as described below in the discussion on base salary.

Because the biotechnology industry is a dynamic industry, the comparator group used by the Compensation Committee to measure the competitive positioning of our compensation packages is periodically updated to ensure that companies continue to meet the established criteria. Accordingly, a group of peer companies for purposes of measuring the competitive positioning of the 2014 compensation package for the named executive officers was selected for primary comparison, as well as a secondary group of peer companies for referencing additional information. For example, using a secondary peer group provided input on more positions and for certain positions provided more robust data than the primary peer group alone. The selection of the primary peer group was based on an analysis performed by StreeterWyatt in late 2013. Peer companies were selected at that time primarily using the following criteria: publicly-held pre-commercial U.S. biotechnology companies, and companies with 50 – 500 employees. In general, the Company also selected peer companies with market capitalization values between 50% and 200% of the Company's market capitalization at the time of final peer selection in late 2013. While there are companies that fall outside this guideline range, the primary peer group was selected in such a manner that the Company's market capitalization was very near the median for all peer companies. Consideration was also given to the frequency or infrequency with which a company was identified as a peer with other peer companies. Specifically, the selected comparable companies were as follows:

#### **Primary peer group members:**

Alnylam Pharmaceuticals, Inc.  
Anacor Pharmaceuticals, Inc.  
ArQule Inc.  
BioCryst Pharmaceuticals, Inc.  
CytRx Corporation  
Dynavax Technologies Corporation

Geron Corporation  
Infinity Pharmaceuticals, Inc.  
Neurocrine Biosciences Inc.  
Omeros Corporation  
Organovo Holdings, Inc.  
Orexigen Therapeutics, Inc.

Osiris Therapeutics, Inc.  
Regulus Therapeutics Inc.  
Rigel Pharmaceuticals, Inc.  
Sangamo Biosciences Inc.  
Sarepta Therapeutics, Inc.  
Targacept, Inc.  
Xenoport, Inc.

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**Secondary peer group members:**

Achillion Pharmaceuticals, Inc.  
Ariad Pharmaceuticals Inc.  
Arena Pharmaceuticals, Inc.  
Cadence Pharmaceuticals Inc.  
Cerus Corporation  
Corcept Therapeutics Incorporated  
Cytokinetics, Incorporated

Dyax Corp.  
Idenix Pharmaceuticals Inc.  
Immumedix Inc.  
Insmed Incorporated  
InterMune, Inc.  
Keryx Biopharmaceuticals Inc.  
Lexicon Pharmaceuticals, Inc.

Progenics Pharmaceuticals, Inc.  
Peregrine Pharmaceuticals, Inc.  
Raptor Pharmaceuticals Corp.  
Synta Pharmaceuticals Corp.  
Threshold Pharmaceuticals Inc.  
Vanda Pharmaceuticals, Inc  
XOMA Corporation  
Zogenix, Inc.

***Elements of Compensation***

In fiscal 2014, our executive compensation program consisted of the following forms of compensation, each of which are described below in greater detail:

- Base Salary
- Annual Bonus Incentive
- Equity Compensation
- Employee Benefit Program
- Termination Benefits

***Base Salary***

Our Compensation Committee aims to set executives' base salaries at market competitive levels with salaries of executives with similar roles at other publicly traded biotech companies. The Compensation Committee believes it is important to provide reasonable, market-based fixed compensation to our executive officers working in a highly volatile and competitive industry, while balancing the needs to retain and recruit talented executives, achieve corporate goals, and conserve cash and equity. In determining appropriate base salary levels for a given executive officer, the Compensation Committee considers the following factors (with no specific weighting applied to any individual factor):

- individual performance of the executive, as well as our overall Company performance, during the prior year;
- level of responsibility, including breadth, scope and complexity of the position;
- level of experience and expertise of the executive;
- internal review of the executive's compensation relative to other executives to ensure internal equity; and
- executive officer compensation levels at other similar companies.

Salaries for executive officers are determined on an individual basis at the time of hire and are set to be competitive with market rates in our industry (meaning within the range of salaries observed among the peer group companies and survey data, although current circumstances are considered in each individual case. Adjustments to base salary are considered annually in light of each executive officer's individual performance, the Company's

performance and market rate compensation levels, as well as changes in job responsibilities or promotion. The Chief Executive Officer assists the Compensation Committee in its annual review of the base salaries of other executive officers and key employees based on the foregoing criteria.

#### *Changes in Base Salaries for 2014*

The compensation study prepared by StreeerWyatt and presented in December 2013 provided an assessment of the Company's compensation practices as compared to industry peers. Base salary levels for the Company's executives, in the aggregate, were determined to be within the range of salaries provided to similarly placed executives and consistent with the Company's compensation philosophy. Merit increases and any market-based adjustments awarded to executives for calendar 2014 are consistent with the findings and recommendations of StreeerWyatt regarding market based increases observable from peer and survey data.

The base salaries for calendar 2014 and 2013 were as follows:

| <u>Name</u>          | 2014               | 2013               | Percent         |
|----------------------|--------------------|--------------------|-----------------|
|                      | <u>Base Salary</u> | <u>Base Salary</u> | <u>Increase</u> |
| Christopher Anzalone | \$553,000          | \$512,500          | 7.9%            |
| Bruce Given          | \$388,000          | \$369,000          | 5.1%            |
| Kenneth Myszkowski   | \$296,000          | \$281,875          | 5.0%            |
| David L. Lewis       | \$240,000          | \$195,000          | 23.1%           |
| Peter Leone          | \$235,000          | \$210,000          | 11.9%           |

Dr. Lewis' base salary increase was based on his increased level of responsibility and a promotion to Chief Scientific Officer. Mr. Leone's increase was based on an increase in his scope of responsibility.

#### *Bonus Incentive*

The Company provides executive officers with performance-based cash bonuses, which are designed to reward executives for overall corporate performance as well as individual performance. Executive officers are evaluated for bonus eligibility generally on an annual basis. Through a collaborative planning process involving the Board of Directors and executive management, corporate goals are established early in the calendar year and are regularly evaluated for appropriateness by the Board of Directors.

Bonuses were paid in February 2014 for performance in calendar 2013. The target bonus amount for the Chief Executive Officer was established by the Compensation Committee early in the calendar year. For 2013, the maximum bonus for the Chief Executive Officer was 200% of his respective target and the minimum bonus, or threshold, was zero. The bonus amounts for the other named executive officers were set by the Compensation Committee in collaboration with the Chief Executive Officer in February 2014 based on each executive's accountability, scope of responsibilities and potential impact on the Company's performance. Accordingly, due to higher levels of control and accountability for the Company's overall performance, a higher percentage of each named executive officer's total cash compensation is dependent on a performance-based cash bonus.

In determining the amount of the bonus for each named executive officer, the Compensation Committee evaluated the corporate goals that had been established during the beginning of the calendar year (set forth below) as well as other corporate and individual achievements and performance throughout the year. For calendar year 2013, the Compensation Committee determined that the Company had achieved or exceeded all the corporate goals, except entering into a new partnership.

In 2013, corporate goals included:

- Commencing clinical studies for ARC-520;
- Ending 2013 with sufficient cash for 2014 operations (as determined by the Compensation Committee);
- Progressing a new clinical candidate to GLP toxicology testing readiness;
- Enter into a partnership with meaningful upfront payment;
- Stock price exceeds an appropriate index return, and
- Obtain new analyst coverage.

Corporate achievements in calendar 2013 included:

- Completion of planned enrollment of a Phase 1 clinical trial of ARC-520 in healthy volunteers and submission of an application for a Certificate of Clinical Trial to the Hong Kong Department of Health to begin a Phase 2a clinical trial of ARC-520 in chronic HBV patients;
- Closed a \$60 million financing from a syndicate of high-quality biotech investors.
- Presented data at the AASLD Liver Meeting on the ARC-520 chimpanzee study indicating possible immune de-repression as hepatitis B s-antigen levels were reduced;
- Presented Phase 1 data at HepDART 2013 showing that ARC-520 was generally safe and well-tolerated at all six dose levels studied;
- Advanced ARC-AAT as the Company's next clinical candidate;
- Stock price of the Company's common stock increased from \$2.10 on January 2, 2013 to \$10.85 on December 31, 2013; and
- Several analysts initiated coverage of the Company in 2013.

The target bonuses, if applicable, and actual bonuses, as a percentage of base salary, for the named executive officers for calendar year 2013 are set forth in the following table:

| Name                 | Title   | Target Bonus for 2014 (% of Base Salary) (1) | Actual Award (% of Base Salary) | Amount of Bonus |
|----------------------|---|--|---------------------------------|-----------------|
| Christopher Anzalone | President & Chief Executive Officer           | 50%  | 95%                             | \$486,000       |
| Bruce Given          | Chief Operating Officer                       | N/A  | 60%                             | \$221,000       |
| Kenneth Myszkowski   | Chief Financial Officer                       | N/A  | 40%                             | \$113,000       |
| David L. Lewis       | Chief Scientific Officer                      | N/A  | 40%                             | \$ 86,000       |
| Peter Leone          | Vice President, Program Management & Strategy | N/A  | 15%                             | \$ 32,000       |

- (1) A target bonus was determined for the Chief Executive Officer only at the beginning of the calendar year. Bonuses for all other named executive officers were determined by the Compensation Committee and the Chief Executive Officer in February 2014.

Bonuses based on corporate and individual performance during calendar year 2014 are expected to be evaluated by the Compensation Committee in the second fiscal quarter of 2015.

### **Equity Compensation**

#### *Overview*

*Stock Options and Restricted Stock.* As an additional component of our compensation program, executive officers are eligible to receive equity compensation in the form of stock options, restricted stock, and restricted stock units. We believe that periodic equity awards serve as useful performance recognition mechanisms with respect to all employees, as most awards are subject to time-based vesting provisions. Our typical equity awards to executive officers (including the named executive officers) have a term of 10 years and vest and become exercisable over a period of four years, with monthly vesting.

The Compensation Committee grants stock options to executive officers for retention purposes and to align their interests with those of our stockholders by creating a return tied to the performance of our stock price.

Under the terms of our 2013 Incentive Plan, pursuant to which new equity grants are made, the exercise price of any stock options awarded under these plans must be equal to at least 100% of the fair market value of our common stock (the closing sales price on the NASDAQ Global Market) on the date of grant. We do not have any program, plan or obligation that requires us to grant equity awards on specified dates, although historically we have made grants to existing officers and employees at least annually and to new hires on the commencement of their employment. We also do not have any program, plan or practice to grant stock option to our executive officers in coordination with the release of material nonpublic information. Equity awards may occasionally be granted following a significant change in job responsibilities or to meet other special retention or performance objectives.

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Authority to make equity grants to employees rests with the Compensation Committee, although the Compensation Committee has delegated authority to the Chief Executive Officer to make grants to new, non-executive employees within limits set by the Compensation Committee. With respect to executive officers, except for the Chief Executive Officer, recommendations for equity grants are made by the Chief Executive Officer and reviewed and approved by the Compensation Committee for review and consideration. In determining the form, date of issuance and value of a grant, the Compensation Committee considers the contributions and responsibilities of each executive officer, appropriate incentives for the achievement of our long-term growth, the size and value of grants made to other executives at peer companies holding comparable positions, individual achievement of designated performance goals, and the Company's overall performance relative to corporate objectives. Equity grants to the Chief Executive Officer are determined and approved by the Compensation Committee in consultation with our compensation consultant.

At this time, no equity grants are vesting based on performance goals. The Compensation Committee considers the value of performance grants from time to time and may implement such grants in the future.

#### *Equity Award Grants in Fiscal 2014*

In consideration of the Company's overall performance against the achievement of the pre-established corporate goals for 2013 described above, the Compensation Committee approved annual equity awards for the Company's executive officers and employees in February 2014. In light of the Company's significant achievements and in order to raise the level of equity-based compensation and ownership for our Chief Executive Officer, Chief Operating Officer and Chief Financial Officer closer to market based levels, the Compensation Committee awarded time-based restricted stock units in addition to stock option grants. The stock option awards granted to executive officers, including the Chief Executive Officer, vest and become exercisable monthly over a period of four years and have a term of 10 years. The shares issuable under the restricted stock unit grants vest in two equal tranches on the first and second anniversary of the date of grant. We believe that the combination of full value awards and options with a combination of near and longer term vesting schedules provides a mix of equity awards that will reward value creation over both near term and longer term for our named executive officers. For additional details regarding the grants of equity awards in fiscal 2014, refer to the "Grants of Plan-Based Awards" table.

#### **Employee Benefit Program**

Executive officers are eligible to participate in all of our employee benefit plans, including medical, dental, vision, life, and disability insurance, in each case on the same basis as other employees, subject to applicable law. In addition, the Company provides additional life insurance for the Chief Executive Officer for the benefit of his heirs. We also provide vacation and other paid holidays to all employees, including executive officers, all of which we believe to be comparable to those provided at peer companies. These benefit programs are designed to enable us to attract and retain our workforce in a competitive marketplace. Health, welfare and vacation benefits ensure that we have a productive and focused workforce through reliable and competitive health and other benefits.

Our retirement savings plan (401(k) plan) is a tax-qualified retirement savings plan, pursuant to which qualified employees, including the named executive officers, are able to contribute certain amounts of their annual compensation, subject to limits prescribed by the Internal Revenue Service. We have historically made matching contributions of 100% of the first 3% of salary and of 50% of the next 2% of salary contributed to the plan. The value of these benefits for each of our named executive officers is reflected in the "All Other Compensation" column of the Summary Compensation Table.

#### **Tax and Accounting Considerations**

*Deductibility of Executive Compensation.* In making compensation decisions affecting our executive officers, the Compensation Committee considers our ability to deduct under applicable federal corporate income tax law compensation payments made to executives. Specifically, the Compensation Committee considers the requirements and impact of Section 162(m) of the Internal Revenue Code, which limits the tax deductibility to us of compensation in excess of \$1.0 million in any year for certain executive officers, except for qualified "performance-based compensation" under the Section 162(m) rules. The Compensation Committee considers the Section 162(m) rules as a factor in determining compensation, but will not necessarily limit compensation to amounts deductible under Section 162(m).

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### ***Timing of Compensation Actions***

Compensation, including base salary adjustments, for our named executive officers is reviewed annually, usually in the quarter of the calendar year and upon promotion or other change in job responsibilities.

### ***Minimum Stock Ownership Requirements***

There are no minimum stock ownership guidelines for our executives or employees, although senior members of our management team are encouraged and expected to have a significant direct interest in the value of our common stock through open market purchases and/or receipt of equity awards. The Company's Insider Trading Policy prohibits short-term trading, options trading, trading on margin and hedging with respect to the Company's securities.

### ***Advisory Vote on Executive Compensation***

The Company conducts an advisory vote on executive compensation each year at our Annual Meeting. While this vote was not binding on the Company, our Board of Directors or our Compensation Committee, we believe that it is important for our shareholders to have an opportunity to vote on this proposal as a means to express their views regarding our executive compensation philosophy, our compensation policies and programs, and our decisions regarding executive compensation, all as disclosed in our proxy statement. Our Board of Directors and our Compensation Committee value the opinions of our shareholders and, to the extent there is any significant vote against the compensation of our named executive officers as disclosed in the proxy statement, we will consider our shareholders' concerns and the Compensation Committee will evaluate whether any actions are necessary to address those concerns. In addition to our advisory vote on executive compensation, we are committed to ongoing engagement with our shareholders on executive compensation and corporate governance issues.

At the 2014 Annual Meeting, approximately 88% of the votes cast on the advisory vote on executive compensation proposal (Proposal No. 2) were in favor of our named executive officer compensation as disclosed in the proxy statement, and as a result our named executive officer compensation was approved. The Board of Directors and Compensation Committee reviewed these final vote results in the context of our overall compensation philosophy and programs, and based on the level of support, determined that no significant changes to our compensation policies and programs were necessary at this time. Nevertheless, as discussed in this Compensation Discussion and Analysis, the Compensation Committee does make modifications periodically to our executive compensation programs to more closely align our executive compensation with the interests of our shareholders. The award of RSUs to our executive officers in February 2014, in addition to annual stock option grants, is one such modification. Among other things, the award of restricted stock units can allow for less dilution than the effect of stock option grants on our outstanding shares. This, and other periodic modifications, are intended to build upon our strong compensation governance framework and pay-for-performance philosophy.

We have determined that our shareholders should vote on a say-on-pay proposal annually, consistent with the preference expressed by our shareholders at the 2013 Annual Meeting.

### ***Compensation Committee Report***

The Compensation Committee of the Company has reviewed and discussed with management the Compensation Discussion and Analysis required by Item 402(b) of Regulation S-K. Based on this review and discussion, the Compensation Committee recommended to the Board that the foregoing Compensation Discussion and Analysis be included in this proxy statement.

Submitted by the Compensation  
Committee of the Board of Directors

Michael S. Perry, Chairman  
Mauro Ferrari  
Edward Frykman  
Charles McKenney

## EXECUTIVE COMPENSATION

### Summary Compensation Table

The following table summarizes compensation earned for services rendered during fiscal 2014, 2013, and 2012 by our Chief Executive Officer, our Chief Financial Officer, our Chief Operating Officer, our Chief Scientific Officer, and our Vice President, Program Management and Strategy, collectively our “Named Executive Officers”:

| Name and Principal Position  | Year | Salary<br>(S) | Bonus<br>(1) (S) | Stock<br>Awards<br>(2) (S) | Option<br>Awards<br>(2) (S) | Non-Equity<br>Incentive Plan<br>Compensation<br>(3) (S) | All Other<br>Compensation<br>(4) (S) | Total     |
|--|------|---------------|------------------|----------------------------|-----------------------------|---|--------------------------------------|-----------|
| Christopher Anzalone<br>President and Chief Executive Officer      | 2014 | 543,615       | —                | 3,053,400                  | 553,680                     | 486,000   | 1,444                                | 4,638,139 |
|  | 2013 | 504,808       | —                | —                          | 463,393                     | 75,000  | 1,444                                | 1,044,645 |
|  | 2012 | 473,000       | —                | —                          | 811,685                     | 200,000   | 1,444                                | 1,486,129 |
| Kenneth Myszkowski<br>Chief Financial Officer                      | 2014 | 293,412       | —                | 1,017,800                  | 461,400                     | 113,000   | 11,596                               | 1,897,208 |
|  | 2013 | 277,644       | —                | —                          | 173,740                     | 27,500  | 9,587                                | 488,471   |
|  | 2012 | 262,000       | —                | —                          | 425,672                     | 60,000  | 10,427                               | 758,099   |
| Bruce D. Given (5)<br>Chief Operating Officer                      | 2014 | 384,159       | —                | 1,817,500                  | 461,400                     | 221,000   | 14,894                               | 2,898,953 |
|  | 2013 | 363,462       | —                | —                          | 334,900                     | 54,000  | 10,356                               | 762,718   |
|  | 2012 | 317,000       | —                | —                          | 605,445                     | —   | 10,155                               | 932,600   |
| David L. Lewis<br>Chief Scientific Officer                         | 2014 | 226,358       | —                | —                          | 1,107,360                   | 86,000  | 9,199                                | 1,428,917 |
|  | 2013 | 199,628       | 43,211           | —                          | 216,818                     | 29,250  | 8,475                                | 497,382   |
|  | 2012 | 195,313       | 86,422           | —                          | 254,691                     | —   | 5,932                                | 542,358   |
| Peter Leone (6)<br>Vice President, Program Management and Strategy | 2014 | 222,843       | —                | —                          | 415,260                     | 32,000  | 9,566                                | 679,669   |
|  | 2013 | 143,128       | —                | —                          | 83,360                      | —   | 5,827                                | 232,315   |
|  | 2012 | 55,769        | —                | —                          | —                           | —   | 2,619                                | 58,388    |

- (1) These bonus amounts represent retention bonuses paid to David Lewis in connection with the Company’s October 2011 acquisition of Roche Madison Inc. where David Lewis was formerly employed. The bonus payment was a condition of the acquisition of Roche Madison, Inc. and was reimbursed by Roche to the Company.
- (2) These columns represent the total grant date fair value, computed in accordance with ASC 718, of stock options and restricted stock units granted during fiscal year 2014, 2013 and 2012. The assumptions used to calculate the value of the stock underlying the option and restricted stock unit awards are set forth in Note 9 of the Notes to the Consolidated Financial Statements included with the Company’s Annual Report on 10-K, provided there was no assumed rate of forfeiture applied in valuing these awards.
- (3) These bonus amounts represent the amounts earned for performance under the Company’s Annual Bonus Incentive Plan during calendar year 2013, 2012 and 2011 and paid in fiscal year 2014, 2013 and 2012, respectively. The Annual Bonuses are described in more detail in the “Bonus Incentive” section.
- (4) Amounts consist of 401(k) matching contribution, as well as life insurance premiums for the benefit each executive officer.
- (5) Bruce Given was hired on October 26, 2012, thus compensation reflected in 2012 is for a partial year of approximately eleven months.
- (6) Peter Leone was hired on April 6, 2012, thus compensation reflected in 2012 is for a partial year of approximately seven months. Additionally, Mr. Leone worked on a part-time basis in 2012 and 2013 before becoming a full-time employee in July 2013.

### Grant of Plan-Based Awards

The following table sets forth cash bonus and equity grants made to the named executive officers in fiscal 2014:

| Name                        | Grant Date | Estimated Future Payouts Under Non-Equity Incentive Plan Awards (1) |            |            | All Other Stock Awards: Number of Shares of Stock or Units (#) (2) | All Other Option Awards: Number of Securities Underlying Options (#) (2) | Option Exercise Price (\$) | Grant Date Fair Value |
|-----------------------------|------------|---|------------|------------|--|--|----------------------------|-----------------------|
|                             |            | Threshold   | Target     | Maximum    |  |  |                            |                       |
| <b>Christopher Anzalone</b> |            |   |            |            |  |  |                            |                       |
| Cash Bonus                  |            | —   | \$ 256,500 | \$ 573,000 | —  | —  | —                          | —                     |
| Stock Options               | 2/6/2014   | —   | —          | —          | —  | 60,000   | \$ 14.54                   | \$ 553,680            |
| RSUs                        | 2/6/2014   | —   | —          | —          | 210,000  | —  | —                          | \$3,053,400           |
| <b>Kenneth Myszkowski</b>   |            |   |            |            |  |  |                            |                       |
| Cash Bonus                  |            | —   | \$ 113,000 | —          | —  | —  | —                          | —                     |
| Stock Options               | 2/6/2014   | —   | —          | —          | —  | 50,000   | \$ 14.54                   | \$ 461,400            |
| RSUs                        | 2/6/2014   | —   | —          | —          | 70,000   | —  | —                          | \$1,017,800           |
| <b>Bruce D. Given</b>       |            |   |            |            |  |  |                            |                       |
| Cash Bonus                  |            | —   | \$ 221,000 | —          | —  | —  | —                          | —                     |
| Stock Options               | 2/6/2014   | —   | —          | —          | —  | 50,000   | \$ 14.54                   | \$ 461,400            |
| RSUs                        | 2/6/2014   | —   | —          | —          | 125,000  | —  | —                          | \$1,817,500           |
| <b>David L. Lewis</b>       |            |   |            |            |  |  |                            |                       |
| Cash Bonus                  |            | —   | \$ 86,000  | —          | —  | —  | —                          | —                     |
| Stock Options               | 2/6/2014   | —   | —          | —          | —  | 120,000  | \$ 14.54                   | \$1,107,360           |
| <b>Peter Leone</b>          |            |   |            |            |  |  |                            |                       |
| Cash Bonus                  |            | —   | \$ 32,000  | —          | —  | —  | —                          | —                     |
| Stock Options               | 2/6/2014   | —   | —          | —          | 45,000   | —  | \$ 14.54                   | \$ 415,260            |

- (1) Amounts listed represent actual cash bonuses paid to our named executive officers in fiscal 2014, except for Dr. Anzalone who was paid 95% of his maximum target bonus.
- (2) Options are priced at the market closing price on the day of the award. Options have various vesting parameters, but generally vest within 48 months or less after the award is granted. Restricted stock units were granted on February 6, 2014 and vest in two equal annual installments beginning on the first anniversary of the grant date.



## Outstanding Equity Awards

The following table provides information, with respect to the Named Executive Officers, concerning the Outstanding Equity Awards of the Company's stock as of September 30, 2014.

| Name                 | Option Awards (1)   |   |                            |                        | Stock Awards (2)  |  |
|----------------------|---|---|----------------------------|------------------------|---|--|
|                      | Number of Securities Underlying Unexercised Options (# Exercisable) | Number of Securities Underlying Unexercised Options (# Unexercisable) | Option Exercise Price (\$) | Option Expiration Date | Number of Shares or Units of Stock That Have Not Vested (#) | Market Value of Shares or Units of Stock That Have Not Vested (\$) (3) |
| Christopher Anzalone | 2,500   | —   | 21.30                      | 6/11/2018              |   |  |
|                      | 112,650   | —   | 5.10                       | 10/8/2019              |   |  |
|                      | 56,325  | —   | 5.20                       | 3/4/2020               |   |  |
|                      | 50,000  | —   | 9.90                       | 8/16/2020              |   |  |
|                      | 10,938  | 4,063   | 4.60                       | 10/21/2021             |   |  |
|                      | 109,792   | 60,208  | 5.19                       | 2/16/2022              |   |  |
|                      | 25,000  | 25,000  | 2.62                       | 9/28/2022              |   |  |
|                      | 66,667  | 133,333   | 2.01                       | 5/6/2023               |   |  |
|                      | 17,498  | 52,493  | 4.75                       | 9/21/2023              |   |  |
|                      | 8,750   | 51,250  | 14.54                      | 2/6/2024               |   |  |
|                      |   |   |                            | 210,000                | 3,101,700   |  |
| Kenneth Myszkowski   | 8,000   | —   | 5.20                       | 3/4/2020               |   |  |
|                      | 12,000  | —   | 9.90                       | 8/16/2020              |   |  |
|                      | 10,938  | 4,063   | 4.60                       | 10/21/2021             |   |  |
|                      | 38,604  | 29,396  | 5.19                       | 2/16/2022              |   |  |
|                      | 12,500  | 12,500  | 2.62                       | 9/28/2022              |   |  |
|                      | 14,000  | 60,000  | 2.01                       | 5/6/2023               |   |  |
|                      | 5,000   | 15,000  | 4.75                       | 9/21/2023              |   |  |
|                      | 7,292   | 42,708  | 14.54                      | 2/6/2024               |   |  |
|                      |   |   |                            | 70,000                 | 1,033,900   |  |
| Bruce D. Given       | 1,000   | —   | 6.20                       | 10/22/2018             |   |  |
|                      | 21,875  | 8,125   | 5.20                       | 10/26/2021             |   |  |
|                      | 71,042  | 38,958  | 5.19                       | 2/16/2022              |   |  |
|                      | 17,500  | 17,500  | 2.62                       | 9/28/2022              |   |  |
|                      | 56,667  | 113,333   | 2.01                       | 5/6/2023               |   |  |
|                      | 10,000  | 30,000  | 4.75                       | 9/21/2023              |   |  |
|                      | 7,292   | 42,708  | 14.54                      | 2/6/2024               |   |  |
|                      |   |   |                            | 125,000                | 1,846,250   |  |
| David L. Lewis       | 10,052  | 7,448   | 4.60                       | 10/21/2021             |   |  |
|                      | 14,938  | 9,563   | 5.19                       | 2/16/2022              |   |  |
|                      | 10,000  | 12,500  | 2.62                       | 9/28/2022              |   |  |
|                      | 20,000  | 70,000  | 2.01                       | 5/6/2023               |   |  |
|                      | 7,000   | 21,000  | 4.75                       | 9/21/2023              |   |  |
|                      | 17,500  | 14.54   | 2/6/2024                   |                        |   |  |
|                      |   |   |                            | —                      | —   |  |
| Peter Leone          | 8,750   | 21,250  | 2.79                       | 7/20/2023              |   |  |
|                      | 2,500   | 7,500   | 4.75                       | 9/21/2023              |   |  |
|                      | 6,562   | 38,438  | 14.54                      | 2/6/2024               |   |  |
|                      |   |   |                            | —                      | —   |  |

(1) Options are priced at the market closing price on the day of the award. Options have various vesting parameters, but generally vest within 48 months or less after the award is granted. Restricted stock units were granted on February 6, 2014 and vest in two equal annual installments beginning on the first anniversary of the grant date.

(2) Value is based on the Company's common stock closing price of \$14.77 on September 30, 2014.

## Options Exercised and Stock Vested

The following table provides information, with respect to the Named Executive Officers, concerning options exercised or restricted stock units vested during fiscal 2014.

| Name                 | Option Awards                               |                                   | Stock Awards                               |                              |
|----------------------|---|-----------------------------------|--|------------------------------|
|                      | Number of Shares<br>Acquired on<br>Exercise | Value Realized on<br>Exercise (1) | Number of Shares<br>Acquired on<br>Vesting | Value Realized on<br>Vesting |
| Christopher Anzalone | —   | —                                 | —  | —                            |
| Kenneth Myszkowski   | 56,000                                      | 590,190                           | —  | —                            |
| Bruce D. Given       | —   | —                                 | —  | —                            |
| David L. Lewis       | 30,000                                      | 279,775                           | —  | —                            |
| Peter Leone          | —   | —                                 | —  | —                            |

(1) Value is calculated as the price of the Company's common stock upon exercise, less the exercise price, multiplied by the number of shares exercised.

### *Termination Benefits - Potential Payments Upon Termination or Change in Control*

The Company generally does not have severance or change of control arrangements with its Named Executive Officers, except as follows:

Dr. Anzalone's employment agreement with the Company provides that if the Company terminates Dr. Anzalone's employment without Cause or if Dr. Anzalone terminates his employment for Good Reason, on his date of termination, Dr. Anzalone, will receive a one-time lump sum payment equal to the sum of: (i) one month of base salary and (ii) premiums for thirty (30) days' of medical and dental benefits. To receive such payments Dr. Anzalone is required to execute a general release in favor of the Company.

For purposes of Dr. Anzalone's employment agreement:

**"Cause"** means (i) the conviction (by trial or upon a plea of nolo contendere) of a felony or other crime involving moral turpitude or the commission of any other material act or omission involving dishonesty, disloyalty or fraud with respect to the Company or any of its subsidiaries or any of their customers or suppliers, (ii) reporting to work under the influence of alcohol or illegal drugs, the use of illegal drugs (whether or not at the workplace) or other repeated conduct causing the Company or any of its subsidiaries substantial public disgrace or disrepute or economic harm, (iii) the engaging of gross misconduct and the failure to cease such conduct and rectify any harm to the Company resulting therefrom within 30 days after written demand therefor by the Company identifying with reasonable particularity such conduct and harm, or (iv) any other material breach of the employment agreement by Executive and the failure to cease such breach and rectify any harm to the Company within 30 days after written demand by the Company identifying with reasonable particularity such breach and harm; and

**"Good Reason"** means (i) Executive's duties, responsibilities, titles or offices are diminished from described in the employment agreement without Executive's written consent, and the Company fails to reinstate such duties, responsibilities, titles or offices within 30 days after written demand by Executive identifying with reasonable particularity the diminishment, (ii) the relocation of Executive's base office to an office that is more than thirty (30) highway miles from Pasadena, CA, (iii) the failure of the Company to obtain a satisfactory agreement from any successor to assume and agree to perform the obligations under this the employment agreement and (iv) any other material breach of this employment agreement by the Company and the failure to cease such breach and rectify any harm to Executive resulting within 30 days after written demand by Executive identifying with reasonable particularity the breach and harm.

Pursuant to his offer of employment by the Company, Mr. Myszkowski is entitled to severance pay equal to three months' base salary plus an amount equal to the premiums on his medical and dental benefits for the same period upon termination of his employment without cause.

Pursuant to his offer of employment by the Company, Dr. Lewis is entitled to severance pay equal to six months' base salary upon termination of his employment without cause.

The Company has not entered into a severance arrangement with either Mr. Leone or Dr. Given.

Additionally, pursuant to the 2004 Equity Incentive Plan and the 2013 Incentive Plan, any unvested awards held by plan participants, including the Named Executive Officers, become fully vested upon a change of control, except as otherwise determined by the Board.

The following tables set forth information regarding potential termination and change of control arrangements with our executive officers had their employment been terminated on September 30, 2014:

### Termination Payments

| Triggering Event   | Salary<br>(\$) | Benefits<br>(\$) | Stock<br>Awards<br>(1) (\$) | Option<br>Awards<br>(1) (\$) | Total     |
|--|----------------|------------------|-----------------------------|------------------------------|-----------|
| <b>Termination by Employer without Cause</b>                               |                |                  |                             |                              |           |
| Christopher Anzalone (2)   | 46,083         | 1,551            | —                           | —                            | 47,634    |
| Kenneth Myszkowski   | 74,000         | 5,776            | —                           | —                            | 79,776    |
| Bruce D. Given   | —              | —                | —                           | —                            | —         |
| David L. Lewis   | 120,000        | —                | —                           | —                            | 120,000   |
| Peter Leone  | —              | —                | —                           | —                            | —         |
| <b>Termination by Employer without Cause following a Change in Control</b> |                |                  |                             |                              |           |
| Christopher Anzalone (2)   | 46,083         | 1,551            | 3,101,700                   | 3,160,965                    | 6,310,299 |
| Kenneth Myszkowski   | 74,000         | 5,776            | 1,033,900                   | 1,400,526                    | 2,514,201 |
| Bruce D. Given   | —              | —                | 1,846,250                   | 2,420,158                    | 4,266,408 |
| David L. Lewis   | 120,000        | —                | —                           | 1,446,424                    | 1,566,424 |
| Peter Leone  | —              | —                | —                           | 338,566                      | 338,566   |

- (1) For stock awards the value is calculated as the number of unvested shares multiplied by the Company's closing stock price at September 30, 2014 of \$14.77. For option awards the value is calculated as the number of shares issuable upon unvested options multiplied by difference between the Company's closing stock price at September 30, 2014 of \$14.77 less the applicable exercise price.
- (2) Dr. Anzalone's employment contract also provides for payment of the values set forth above upon his resignation for "good reason" as defined in his employment agreement.

**PROPOSAL FOUR  
RATIFICATION OF APPOINTMENT OF INDEPENDENT AUDITORS**

Our Audit Committee, with the ratification of our Board, selected the accounting firm of Rose, Snyder & Jacobs, LLP (“**RS&J**”) as the Company’s independent auditors for the fiscal year ending September 30, 2015, and that selection is now being submitted to the stockholders.

A representative of RS&J will be available at the Annual Meeting to respond to appropriate questions or make any other statements such representative deems appropriate.

Stockholders are not required to ratify the appointment of RS&J as our independent auditor. However, we are submitting the appointment for ratification as a matter of good corporate practice. If stockholders fail to ratify the appointment, the Audit Committee will consider whether or not to retain RS&J. Even if the appointment is ratified, the Audit Committee may direct the appointment of a different independent auditor at any time during the year if it determines that such a change would be in the best interests of the Company and our stockholders.

**Vote Required; Recommendation of the Board**

In order to be ratified, Proposal No. 4 must be approved by a majority of Required Vote, assuming a quorum is present. For this purpose, abstentions will be counted as a vote against the proposal, while broker non-votes will have no effect on the outcome of the vote.

**THE BOARD UNANIMOUSLY RECOMMENDS A VOTE “FOR” PROPOSAL FOUR.**

**AUDIT FEES**

The Audit Committee regularly reviews and determines whether specific projects or expenditures with our independent auditors, Rose, Snyder & Jacobs, LLP may potentially affect their independence. The Audit Committee’s policy is to pre-approve all audit and permissible non-audit services provided by RS&J. Pre-approval is generally provided by the Audit Committee for up to one year, detailed to the particular service or category of services to be rendered and is generally subject to a specific budget. The Audit Committee may also pre-approve additional services of specific engagements on a case-by-case basis. All engagements of our independent registered public accounting firm in 2014 and 2013 were pre-approved by the audit committee.

The following table sets forth the aggregate fees invoiced by RS&J for the fiscal years ended September 30, 2014, and September 30, 2013:

|                        | <u>Year Ended September 30,</u> |                         |
|------------------------|---------------------------------|-------------------------|
|                        | <u>2014</u>                     | <u>2013</u>             |
| Audit fees (1)         | \$184,500                       | \$106,000               |
| Audit-related fees (2) | 74,950                          | 3,500                   |
| <b>Total</b>           | <b><u>\$259,450</u></b>         | <b><u>\$109,500</u></b> |

(1) Fees invoiced by RS&J include year-end audit and periodic reviews of Forms 10-Q and 10-K.

(2) Fees invoiced by RS&J related to Comfort Letters and Consents for financings and registration statements, and other agreed-upon procedures.

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## REPORT OF THE AUDIT COMMITTEE

The following is the report of the Audit Committee with respect to the Company's audited financial statements for fiscal 2014, which include the consolidated balance sheets of the Company as of September 30, 2014 and September 30, 2013, and the related consolidated statements of operations, stockholders' equity and cash flows for the fiscal years ended September 30, 2014 and September 30, 2013, and the notes thereto.

**Composition.** The Audit Committee of the Board is comprised of three directors and operates under a written charter adopted by the Board. The members of the Audit Committee are Edward W. Frykman, Charles P. McKenney and Michael S. Perry. All members of the Audit Committee are "independent," as defined in Rule 10A-3 under the Exchange Act and Rule 5605(c) of the NASDAQ Marketplace Rules, and are financially literate.

**Responsibilities.** The responsibilities of the Audit Committee include engaging an accounting firm as the Company's independent registered public accounting firm. Management has primary responsibility for the Company's internal controls and financial reporting process. The independent registered public accounting firm is responsible for performing an independent audit of the Company's consolidated financial statements in accordance with generally accepted auditing standards and for issuing a report thereon. The Audit Committee's responsibility is to oversee these processes.

**Review with Management and independent registered public accounting firm.** On November 21, 2014, the Audit Committee consisted of Edward W. Frykman, Charles McKenney and Michael S. Perry. On that date, the Audit Committee met separately to review the Company's consolidated audited financial statements and held discussions with management and RS&J. Management represented to the Audit Committee that the Company's consolidated financial statements were prepared in accordance with generally accepted accounting principles. The members of the Audit Committee discussed with RS&J matters required to be discussed by Statement on Auditing Standards No. 61, as amended, "Communication with Audit Committees." The Company's independent registered public accounting firm also provided to the Audit Committee the written disclosures and the letter required by the Public Company Accounting Oversight Board regarding the independent registered public accounting firm's communications with the Audit Committee concerning independence and the Audit Committee discussed the firm's independence with RS&J.

**Conclusion.** Based upon the Audit Committee's review of the financial statements and discussions with management and RS&J, the Audit Committee's review of the representations of management and the report of RS&J to the Audit Committee, the Audit Committee recommended that the Board include the audited consolidated financial statements in the Company's Annual Report on Form 10-K for the fiscal year ended September 30, 2014, as filed with the SEC.

This report is submitted by the Audit Committee of the Board.

Edward W. Frykman, Chairman  
Charles P. McKenney  
Michael S. Perry

## VOTING SECURITIES OF PRINCIPAL STOCKHOLDERS AND MANAGEMENT

The following table sets forth the beneficial ownership of the Company's Common Stock as of January 5, 2015, by (i) each of the named executive officers named in the table under "Executive Compensation and Related Information," (ii) each director, (iii) all current directors and executive officers as a group, and (iv) the holders of greater than 5% of our total shares outstanding known to us. Unless otherwise specified in the footnotes to the table below, the persons and entities named in the table have sole voting and investment power with respect to all shares beneficially owned, subject to community property laws, where applicable, and the address of each stockholder is c/o Arrowhead Research Corporation, 225 South Lake Avenue, Suite 1050, Pasadena, California 91101 unless otherwise indicated.

|   | Number and Percentage of Shares Beneficially Owned (1) |            |
|---|--|------------|
|   | Shares   | Percentage |
| <b><u>5% Beneficial Owners</u></b>  |  |            |
| OrbiMed Advisors, LLC (2)<br>601 Lexington Avenue<br>New York, NY 10022   | 5,178,200  | 9.5%       |
| QVT Financial LP (3)<br>1177 Avenue of the Americas<br>New York, NY 10036 | 4,030,882  | 7.4%       |
| Baker Bros. Advisors LLC (4)<br>667 Madison Ave<br>New York, NY 10065     | 3,961,178  | 6.9%       |
| <b><u>Executive Officers and Directors</u></b>                            |  |            |
| Christopher Anzalone (5)  | 810,542  | 1.5%       |
| Kenneth Myszkowski (6)  | 217,250  | *          |
| Bruce D. Given (7)  | 367,667  | *          |
| David L. Lewis (8)  | 107,188  | *          |
| Peter Leone (9)   | 28,438   | *          |
| Douglass Given (10)   | 85,000   | *          |
| Edward Frykman (11)   | 101,352  | *          |
| Charles McKenney (12)   | 70,220   | *          |
| Michael S. Perry (13)   | 87,833   | *          |
| Mauro Ferrari (14)  | 29,095   | *          |
| All Executive Officers and Directors as a group (10 persons) (15)         | 1,904,585  | 3.4%       |

\* Less than 1%

(1) Based on 54,733,264 shares of Common Stock issued and outstanding as of January 5, 2015. Shares not outstanding but deemed beneficially owned by virtue of the right of a person to acquire them as of January 5, 2015, or within sixty days of such date (including upon conversion of the Preferred Stock), are treated as outstanding only when determining the percentage owned by such individual and when determining the percentage owned by a group.

- (2) Based on a Schedule 13F-HR filed November 14, 2014 on behalf of OrbiMed Advisors, LLC. According to the Schedule 13F-HR, OrbiMed Advisors, LLC had shared-defined investment discretion with respect to all the indicated shares, sole voting authority with respect to 1,480,900 of the indicated shares and no voting authority with respect to 3,697,300 of the indicated shares.
- (3) Based on a Schedule 13G/A filed October 14, 2014 on behalf of QVT Financial LP. According to the Schedule 13G/A, QVT Financial LP (“QVT Financial”) is the investment manager for QVT Fund V LP and other private investment funds (collectively, the “Funds”). The Funds aggregately own the indicated shares. Accordingly, QVT Financial may be deemed to be the beneficial owner of the shares owned by the Funds. QVT Financial GP LLC, as General Partner of QVT Financial, may be deemed to beneficially own the same number of shares of Common Stock reported by QVT Financial. QVT Associates GP LLC, as General Partner of the Funds, may be deemed to beneficially own the aggregate number of shares of Common Stock owned by the Funds, and accordingly, QVT Associates GP LLC may be deemed to be the beneficial owner of the indicated shares. QVT Financial holds shared voting and dispositive power with respect to all the indicated shares.
- (4) Based on a Schedule 13F-HR filed November 14, 2014 on behalf of Baker Bros. Advisors LLC. In addition to the 1,230,802 common shares shown on the Schedule 13F-HR, this total also includes 2,730,376 of common shares that would be issuable upon the conversion of Preferred Stock.
- (5) Includes 15,772 shares issuable upon the exercise of common stock purchase warrants and 534,597 shares issuable upon the exercise of stock options that are exercisable within 60 days of January 5, 2015 and 210,000 restricted stock units.
- (6) Includes 145,750 shares issuable upon the exercise of stock options that are exercisable within 60 days of January 5, 2015 and 70,000 restricted stock units.
- (7) Includes 242,667 shares issuable upon the exercise of stock options that are exercisable within 60 days of January 5, 2015 and 125,000 restricted stock units.
- (8) Includes 107,188 shares issuable upon the exercise of stock options that are exercisable within 60 days of January 5, 2015.
- (9) Includes 28,438 shares issuable upon the exercise of stock options that are exercisable within 60 days of January 5, 2015.
- (10) Includes 65,000 shares issuable upon the exercise of stock options that are exercisable within 60 days of January 5, 2015 and 20,000 restricted stock units.
- (11) Includes 77,500 shares issuable upon the exercise of stock options that are exercisable within 60 days of January 5, 2015 and 15,000 restricted stock units.
- (12) Includes 53,000 shares issuable upon the exercise of stock options that are exercisable within 60 days of January 5, 2015 and 15,000 restricted stock units.
- (13) Includes 72,833 shares issuable upon the exercise of stock options that are exercisable within 60 days of January 5, 2015 and 15,000 restricted stock units.
- (14) Includes 24,845 shares issuable upon the exercise of stock options that are exercisable within 60 days of January 5, 2015.
- (15) Includes 15,772 shares issuable upon the exercise of common stock purchase warrants and 1,366,818 shares issuable upon the exercise of stock options that are exercisable within 60 days of January 5, 2015 and 470,000 restricted stock units.

#### EQUITY COMPENSATION PLAN INFORMATION

The following table provides information as of September 30, 2014 with respect to shares of our Common Stock that may be issued under our equity compensation plans.

|  | Equity Compensation Plan Information  |   |   |
|--|---|---|---|
|  | Number of<br>Shares to be Issued<br>upon exercise of<br>outstanding options,<br>warrants and rights | Weighted<br>average<br>exercise price<br>of outstanding<br>options,<br>warrants and<br>rights | Number of<br>securities<br>remaining<br>available for<br>future issuance<br>under equity<br>compensation<br>plans (excluding<br>securities<br>reflected in<br>column (a)) (3) |
| Equity compensation plans approved by security holders (1)     | 3,893,518   | \$ 6.91   | 2,804,334   |
| Equity compensation plans not approved by security holders (2) | 467,322   | \$ 7.61   | —   |
| <b>Total</b>   | <b>4,360,840</b>  | <b>\$ 6.99</b>  | <b>2,804,334</b>  |

- (1) Includes options outstanding representing 822,000 shares subject to the 2013 Incentive Plan, 2,563,518 shares subject to the 2004 Equity Incentive Plan and 38,000 shares subject to the 2000 Stock Option Plan. Also includes 470,000 restricted stock units subject to the 2013 Incentive Plan.
- (2) Includes 427,322 inducement option grants and 40,000 inducement restricted stock unit grants issued to newly hired employees.
- (3) Includes 2,708,000 shares available under the 2013 Incentive Plan and 96,334 shares available under the 2004 Equity Incentive Plan (The 2004 Plan shares available expired effective December 1, 2014).

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## Current Executive Officers of the Registrant

The names, ages and positions of our current executive officers serving as of January 5, 2014 are provided below. Biographical information regarding these officers is set forth under the following table, except for Dr. Anzalone, whose biography is set forth above with our other directors.

| <u>Name</u>           | <u>Age</u> | <u>Position with Arrowhead</u>                   |
|-----------------------|------------|--|
| Christopher Anzalone  | 45         | Chief Executive Officer & President and Director |
| Kenneth A. Myszkowski | 48         | Chief Financial Officer                          |
| Bruce Given           | 60         | Chief Operating Officer                          |
| David L. Lewis        | 51         | Chief Scientific Officer                         |
| Peter Leone           | 58         | Vice President, Strategy & Program Management    |
| Patrick O'Brien       | 51         | General Counsel                                  |

**Kenneth A. Myszkowski**, Chief Financial Officer, joined Arrowhead in 2009. Prior to joining Arrowhead, Mr. Myszkowski served as the corporate controller for Broadwind Energy, a public energy company which provides products and services to the wind energy industry. Previous to his position at Broadwind, Mr. Myszkowski was controller for Epcor USA, the U.S. headquarters for Epcor Utilities, Inc., a public energy company. Prior to Epcor, Mr. Myszkowski was controller for two start-up ventures: NanoInk, specializing in Dip Pen Nanolithography, a nanofabrication technology, and Delphion, which provided on-line tools for intellectual property research. Mr. Myszkowski also held several corporate roles at FMC Corporation, and Premark International, both Fortune 500 conglomerates. He began his career in the audit practice of Arthur Andersen & Co. in Chicago, Illinois. Mr. Myszkowski received his undergraduate degree from the University of Illinois, and his MBA from the University of Chicago Booth School of Business. He is a certified public accountant.

**Dr. Bruce Given**, Chief Operating Officer, joined Arrowhead in 2011. Since October 1, 2009, Dr. Given has been a director of the Company's subsidiary, Calando Pharmaceuticals, Inc., and since February 1, 2010, Dr. Given has been Chief Executive Officer of Leonardo Biosystems, Inc., in which Arrowhead holds a minority equity interest. Dr. Given was a member of the Board of Directors for ICON, plc. from 2004 until his retirement in 2013 and Chairman of its Board of Directors from 2010 to 2013. Dr. Given served as the President and Chief Executive Officer, and as a member of the Board of Directors of Encysive Pharmaceuticals, an R&D-based commercial pharmaceutical company, roles he held from 2002 through 2007. Subsequent to his tenure at Encysive until 2011, Dr. Given was President of Bruce Given Consulting, a firm that provides consulting services to biotech companies. Prior to his tenure at Encysive, Dr. Given held several senior executive roles at Johnson and Johnson, Sandoz Pharmaceuticals, and Schering-Plough. Dr. Given obtained his bachelor of sciences degree from Colorado State University, graduating Phi Beta Kappa. He received his M.D. degree with honors from the University of Chicago, Pritzker School of Medicine and completed his medical training at the University of Chicago and at Brigham and Women's Hospital in Boston, where he was a Clinical Fellow at Harvard Medical School. He is board certified in internal medicine and endocrinology and metabolism and has authored 33 scientific publications. Dr. Bruce Given is a brother of Dr. Douglass Given, a director of the company.

**Dr. David Lewis**, Chief Scientific Officer, has served in this role since in September 2013. From October 2011 until September 2013, he served as the Company's Vice President, Biology. Dr. Lewis has served as Site Head for the Company's Research and Development facility in Madison, Wisconsin since 2011 and prior to that as Site Head for the facility under Roche ownership from 2008 until 2011. Dr. Lewis is a pioneer in the use of RNAi and was the first to show that siRNAs could be used to inhibit gene expression in multiple tissues of adult mammals. He is a co-inventor of the Company's DPC technology for targeted delivery of siRNA. Dr. Lewis was the Program Director for RNAi at Mirus Bio Corporation, prior to its acquisition by Roche in October 2008.



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Dr. Lewis received his B.S. degree in Biochemistry and Molecular Biology from the University of Wisconsin-Madison, and his Ph.D. degree in Biochemistry from Michigan State University. He went on to the Howard Hughes Medical Institute at the University of Wisconsin-Madison to perform post-doctoral studies where he developed viral and non-viral methods to modulate gene expression in animals, and discovered novel gene regulatory mechanisms involved in body patterning. Dr. Lewis has authored 25 scientific papers and book chapters, has 19 patents, and has been awarded government-sponsored research grants totaling more than \$5 million. He has given numerous invited speaking presentations at both scientific conferences and research institutions. He has served on several NIH review panels and is a lecturer in the Masters in Biotechnology Program at the University of Wisconsin-Madison.

**Peter B. Leone**, Vice President, Program Management and Strategy, joined the Company in 2012 after its acquisition of Alvos Therapeutics, Inc., where he was Chief Operating Officer from 2010 to 2012. Mr. Leone is an experienced executive with over 25 years of experience in life sciences. Before Alvos, Mr. Leone was COO of Mersana Therapeutics from 2004 to 2010, where he oversaw IND preparations and launched clinical trials for two polymer-based cancer compounds. With the first-time CEO, he raised \$38 million for Mersana and co-led negotiations for a \$334 million collaboration with Teva Pharmaceuticals. Mr. Leone co-founded Mersana at PureTech Ventures, a venture creation group. Before PureTech, he was CEO at Phenome Sciences, an early personalized medicine company that provided phenotyping tools for two strategic collaborations with Janssen and Kyowa Hakko and two clinical programs. Mr. Leone also was a founder and President at DigiTrace Care Services (now SleepMed), today a \$100 million revenue provider of device-based services company providing neurology and sleep tests and treatments. Before DigiTrace, Mr. Leone had been a strategy consultant and partner at Corporate Decisions, Inc. (a Bain spin off now part of Mercer), where he led a multi-year project with Sandoz (pre-merger to Novartis) to launch a first-in-class anti-psychotic Clozaril®. His first professional work experiences were in marketing with Procter & Gamble and engineering with General Electric. Mr. Leone has an MBA from Stanford University and a bachelor's degree in Engineering Sciences from Dartmouth College.

**Patrick C. O'Brien**, General Counsel, joined the Company in December 2014. Mr. O'Brien has practiced in the healthcare legal field for over 20 years. Before joining the Company, from 2012 to 2014, Mr. O'Brien was with Shire, where he was Group Vice President, Law. Immediately prior to working with Shire he was a partner with the international law firm of Holland & Knight LLP in its Washington, DC office. In 2010, Mr. O'Brien co-founded the law firm O'Brien Gould PLLC which joined Holland & Knight in 2011. From 2009 – 2010, Mr. O'Brien was a partner in Burke O'Neil LLC. From 2001 - 2009 Mr. O'Brien served in several legal roles with Johnson & Johnson, including serving as Vice President of Law for J&J's Centocor Ortho-Biotech unit. Mr. O'Brien previously served as Regulatory Counsel with the United States Food & Drug Administration. Mr. O'Brien was awarded a BS in Pharmacy and a PharmD from the University of Arizona before completing a residency in Clinical Pharmacy with the University of Illinois at Chicago Hospital. He was also awarded his JD from the University of Arizona.

#### **Section 16(a) Beneficial Ownership Reporting Compliance**

Under Section 16(a) of the Securities Exchange Act of 1934, the Company's directors and officers and its significant stockholders (defined by statute as stockholders beneficially owning more than ten percent (10%) of the Common Stock) are required to file with the SEC and the Company reports of ownership, and changes in ownership, of common stock. Based solely on a review of the reports received by it, the Company believes that, except for a Form 4 that was filed late for Dr. Ferrari reporting a purchase made in October 2013, during the fiscal year ended September 30, 2014, all of its officers, directors and significant stockholders complied with all applicable filing requirements under Section 16(a).

#### **REVIEW AND APPROVAL OF RELATED-PARTY TRANSACTIONS**

Our Board has adopted policies and procedures for the review and approval of related-party transactions and has delegated to the Audit Committee the authority to review and approve the material terms of any proposed related-party transactions. To the extent that a proposed related-party transaction may involve a non-employee director or nominee for election as a director and may be material to a consideration of that person's independence, the matter may also be considered by the other disinterested directors.

Pursuant to our Code of Business Conduct and Ethics and our Corporate Governance Committee Charter, each of our officers, directors and employees must disclose related-party transactions to our Board of Directors. In order to avoid conflicts of interest, our executive officers and directors may not acquire any ownership interest in any supplier, customer or competitor (other than nominal amounts of stock in publicly traded companies), enter into any consulting or employment relationship with any customer, supplier or competitor, or engage in any outside business activity that is competitive with any of our businesses, without first disclosing the proposed transaction. After the proposed transaction has been disclosed, a determination will be made by our Board or Audit Committee as to what course to follow, depending on the nature or extent of the conflict. Furthermore, our executive officers and directors may not serve on any board of directors of any customer, supplier or competitor unless such board service has been disclosed to us and approved by our Board.

In determining whether to approve or ratify a related-party transaction, the Board and/or Committee may consider, among other factors it deems appropriate, the potential benefits to us, the impact on a director's or nominee's independence or an executive officer's relationship with or service to us, whether the related-party transaction is on terms no less favorable than terms generally available to an unaffiliated third party under the same or similar circumstances and the extent of the related party's interest in the transaction. In deciding to approve a transaction, the Board or Audit Committee may, in its sole discretion, impose such conditions as it deems appropriate on us or the related party in connection with its approval of any transaction. Any transactions involving the compensation of executive officers, however, are reviewed and approved by the Compensation Committee. If a related-party transaction will be ongoing, the Audit Committee may establish guidelines to be followed in our ongoing dealings with the related party. Thereafter, the Audit Committee reviews and assesses the ongoing relationship with each related party to see that it is in compliance with the committee's guidelines and that the related-party transaction remains appropriate.

#### **CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE**

As of September 30, 2014, a majority of the members of the Board are independent directors, as defined by the NASDAQ Marketplace Rules. The Board has determined that all of the Company's directors are independent, except Dr. Anzalone, the Company's Chief Executive Officer, and Dr. Douglass Given, the brother of the Company's Chief Operating Officer. Non-employee directors do not receive consulting, legal or other fees from the Company, other than Board compensation.

Vincent Anzalone is the Company's Vice President, Investor Relations and the brother of Christopher Anzalone, the Company's Chief Executive Officer. Vincent Anzalone earned base salary and bonus of \$178,486 during fiscal 2014 and \$73,901 thus far in fiscal 2015. His current base salary is \$166,420. Since the beginning of fiscal 2014, Vincent Anzalone was awarded options to purchase 42,000 shares and 40,000 shares of the Company's Common Stock, each vesting over four years from the date of grant, at exercise prices of \$14.54 and \$5.45, respectively. Each exercise price is equal to the fair market value of the shares on the date of grant. The grant date fair value of the options is \$387,576 and \$146,440, respectively.

#### **Annual report on Form 10-K**

The Company will mail, without charge to any stockholder upon written request, a copy of the Company's Annual Report on Form 10-K for the year ended September 30, 2014 including the financial statements, schedules and a list of exhibits. Requests should be sent to Arrowhead Research Corporation, 225 S. Lake Avenue, Suite 1050 Pasadena, CA 91101, Attn: Corporate Secretary, Phone (626) 304-3400.

#### **Stockholders Sharing the Same Address**

We may satisfy SEC rules regarding delivery of proxy statements including the proxy statement, annual report and Notice, by delivering a single Notice and, if applicable, a single set of proxy materials to an address shared by two or more of our stockholders. This delivery method can result in meaningful cost savings for us. To take advantage of this opportunity, we may deliver only one Notice, and if applicable, a single set of proxy materials to multiple stockholders who share an address, unless contrary instructions are received prior to the mailing date. Similarly, if you share an address with another stockholder and have received multiple copies of our Notice and/or other proxy materials, you may write or call us at the address and phone number below to request delivery of a single copy of these materials in the future. We undertake to deliver promptly upon written or oral request a separate copy of the Notice and/or other proxy materials to a stockholder at a shared address to which a single copy of these documents was delivered. If you hold stock as a record stockholder and prefer to receive separate copies of a Notice, and if applicable, other proxy materials either now or in the future, please contact us at the address provided below. If your stock is held through a brokerage firm or bank and you prefer to receive separate copies of a Notice and, if applicable, other proxy materials either now or in the future, please contact your brokerage firm or bank.

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Arrowhead Research Corporation  
225 S. Lake Avenue, Suite 1050  
Pasadena CA 91101  
Attn: Corporate Secretary  
Phone (626) 304-3400

**Other Matters**

The Company knows of no other matters to be submitted at the Annual Meeting. If any other matters properly come before the meeting, it is the intention of the persons named in the proxy card to vote the shares they represent as the Board may recommend.

BY ORDER OF THE BOARD OF DIRECTORS

/s/ Jane Davidson

Jane Davidson,  
Secretary

Pasadena, California  
January 27, 2015

**AMENDED AND RESTATED  
CERTIFICATE OF INCORPORATION**

**OF**

**ARROWHEAD RESEARCH CORPORATION  
(a Delaware corporation)**

Arrowhead Research Corporation, a corporation organized and existing under the laws of the State of Delaware (the "Corporation"), does hereby certify as follows:

(a) The name of the Corporation is Arrowhead Research Corporation. The Corporation's original Certificate of Incorporation was filed with the Secretary of State of the State of Delaware on February 13, 2001 under the Corporation's former name, InterActive Group, Inc.

(b) This Amended and Restated Certificate of Incorporation has been duly authorized and adopted by the Board of Directors and stockholders of the Corporation in accordance with the provisions of Sections 242 and 245 of the General Corporation Law of the State of Delaware.

(c) The Corporation's Certificate of Incorporation is hereby amended and restated in its entirety to read as follows:

**FIRST:** The name of the corporation is Arrowhead Research Corporation (the "Corporation").

**SECOND:** The address of the Corporation's registered office in the State of Delaware is 2140 South Dupont Hwy, Camden, Kent County, Delaware 19934. The name of its registered agent at such address is Paracorp Incorporated.

**THIRD:** The purpose of the Corporation is to engage in any lawful act or activity for which corporations may be organized under the General Corporation Law of the State of Delaware (the "DGCL").

**FOURTH:** The total number of shares which the Corporation shall have authority to issue is 150,000,000, of which 145,000,000 shares shall be common stock, \$.001 par value ("Common Stock"), and 5,000,000 shares shall be preferred stock, \$.001 par value ("Preferred Stock"). The Board of Directors (the "Board") is authorized, subject to the limitations prescribed by law and the provisions of this Article FOURTH, to provide for the issuance of the Preferred Stock in series, and by filing a certificate pursuant to the applicable laws of the State of Delaware, to establish from time to time the number of shares to be included in each such series, and to fix the designation, powers, preferences and rights of the shares of each such series and the qualifications, limitations or restrictions thereof. The authority of the Board with respect to each such series shall include, but not be limited to, the determination of the following: (a) The

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number of shares constituting that series and the distinctive designation of that series; (b) The dividend rate, if any, on the shares of that series, whether dividends shall be cumulative, and, if so, from which date or dates, and the relative priority, if any, of payment of dividends on shares of that series; (c) Whether that series shall have voting rights, in addition to the voting rights expressly required by law, and, if so, the terms of such voting rights; (d) Whether that series shall have conversion privileges, and, if so, the terms and conditions of such conversion, including provisions for adjustment of the conversion rate in such events as the Board shall determine; (e) Whether or not the shares of that series shall be redeemable, and, if so, the terms and conditions of such redemption, including the date or dates upon or after which they shall be redeemable, and the amount per share payable in the case of redemption, which amount may vary under different conditions and at different redemption dates; (f) Whether that series shall have a sinking fund for the redemption or purchase of shares of that series, and, if so, the terms and amount of such sinking fund; (g) The rights of the shares of that series in the event of a voluntary or involuntary liquidation, dissolution or winding up of the Corporation, and the relative rights of priority, if any, of payment of shares of that series; and (h) Any other relative rights, preferences and limitations of that series.

Series B Convertible Preferred Stock. Pursuant to the authority conferred by this Article FOURTH upon the Board, the Board created a series of 9,900 shares of Preferred Stock designated as Series B Convertible Preferred Stock by filing a certificate of designations with the Secretary of State of the State of Delaware on May 1, 2013. The voting powers, designations, preferences and relative, participating, optional or other special rights, and the qualifications, limitations and restrictions thereof, of the Series B Convertible Preferred Stock of the Corporation are as set forth in Annex A hereto and are incorporated herein by reference.

Series C Convertible Preferred Stock. Pursuant to the authority conferred by this Article FOURTH upon the Board, the Board created a series of 46,000 shares of Preferred Stock designated as Series C Convertible Preferred Stock by filing a certificate of designations with the Secretary of State of the State of Delaware on October 10, 2013. The voting powers, designations, preferences and relative, participating, optional or other special rights, and the qualifications, limitations and restrictions thereof, of the Series C Convertible Preferred Stock of the Corporation are as set forth in Annex B hereto and are incorporated herein by reference.

**FIFTH:** The Board is expressly authorized to make, alter or repeal the Bylaws of the Corporation, but the stockholders may make additional Bylaws and may alter or repeal any bylaw whether adopted by them or otherwise.

**SIXTH:** Elections of directors need not be by written ballot except to the extent provided in the Bylaws of the Corporation.

**SEVENTH:** A director of the Corporation shall not be liable to the Corporation or any of its stockholders for monetary damages for breach of fiduciary duty as a director, except to the extent such exemption from liability or limitation thereof is not permitted under the DGCL as the same exists or may hereafter be amended. Any repeal or modification of the foregoing paragraph by the stockholders of the Corporation shall not adversely affect any right or protection of a director of the Corporation in respect of any act or omission occurring prior to the time of such repeal or modification.

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**EIGHTH:** The Corporation reserves the right at any time and from time to time to amend, alter, change or repeal any provision contained in this Certificate of Incorporation in the manner now or hereafter prescribed by law, and all rights, preferences and privileges of whatsoever nature conferred upon stockholders, directors or any other persons whomsoever by and pursuant to this Certificate of Incorporation in its present form or as hereafter amended are granted subject to the right reserved in this Article EIGHTH.

**NINTH:** The Board shall be classified, with respect to the time for which the directors severally hold office, into three classes, as nearly equal in number as possible, the first class, designated "Class I," to hold office initially for a term expiring at the annual meeting of stockholders to be held in 2016, the second class, designated "Class II," to hold office initially for a term expiring at the annual meeting of stockholders to be held in 2017, and the third class, designated "Class III," to hold office initially for a term expiring at the annual meeting of stockholders to be held in 2018, with members of each class to hold office until their successors are elected and qualified or until their earlier death, resignation, retirement or removal. At each annual meeting of the stockholders of the Corporation, the successors to the class of directors whose term expires at that meeting shall be elected to hold office for a term expiring at the annual meeting of stockholders held in the third year following the year of their election. If the number of directors which constitutes the whole Board is changed, any increase or decrease shall be apportioned among the classes so as to maintain the number of directors in each class as nearly equally as possible, and any additional director of any class elected to fill a vacancy resulting from an increase in such class shall hold office for a term that coincides with the remaining term of that class, but in no event shall a decrease in such number of directors shorten the term of any incumbent director. Any director chosen to fill a vacancy not resulting from an increase in the number of directors shall hold office until the next election of the class for which such director has been chosen, and until that director's successor has been elected and has qualified or until such director's earlier death, resignation, retirement or removal.

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IN WITNESS WHEREOF, Arrowhead Research Corporation has caused this Amended and Restated Certificate of Incorporation to be signed by the undersigned duly authorized officer on this [ ] day of [ ], 2015.

**ARROWHEAD RESEARCH CORPROATION**

By: \_\_\_\_\_  
Name: [ ]  
Title: [ ]

[Signature Page to Amended and Restated Certificate of Incorporation]

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**ANNEX A**

**ARROWHEAD RESEARCH CORPORATION**  
**CERTIFICATE OF DESIGNATION OF PREFERENCES,**  
**RIGHTS AND LIMITATIONS**  
**OF**  
**SERIES B CONVERTIBLE PREFERRED STOCK**

PURSUANT TO SECTION 151 OF THE  
DELAWARE GENERAL CORPORATION LAW

Section 1. Definitions. For purposes of this Annex A, the following terms shall have the following meanings:

“Affiliate” means any Person that, directly or indirectly through one or more intermediaries, controls or is controlled by or is under common control with a Person, as such terms are used in and construed under Rule 405 of the Securities Act.

“Alternate Consideration” shall have the meaning set forth in Section 7(d).

“Beneficial Ownership Limitation” shall have the meaning set forth in Section 6(d).

“Business Day” means any day except any Saturday, any Sunday, any day which is a federal legal holiday in the United States or any day on which banking institutions in the State of New York are authorized or required by law or other governmental action to close.

“Buy-In” shall have the meaning set forth in Section 6(c)(iv).

“Commission” means the United States Securities and Exchange Commission.

“Common Stock” means the Corporation’s common stock, par value \$0.001 per share, and stock of any other class of securities into which such securities may be reclassified or changed after May 1, 2013.

“Common Stock Equivalents” means any securities of the Corporation or the Subsidiaries which would entitle the holder thereof to acquire at any time Common Stock, including, without limitation, any debt, preferred stock, rights, options, warrants or other instrument that is at any time convertible into or exercisable or exchangeable for, or otherwise entitles the holder thereof to receive, Common Stock.

“Conversion Amount” means the sum of the Stated Value at issue.



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“Conversion Date” shall have the meaning set forth in Section 6(a).

“Conversion Price” shall have the meaning set forth in Section 6(b).

“Conversion Shares” means, collectively, the shares of Common Stock issuable upon conversion of the shares of Series B Preferred Stock in accordance with the terms hereof.

“Conversion Shares Registration Statement” means a registration statement that registers the resale of the Conversion Shares of the Holders, who shall be named as “selling stockholders” therein and meets the requirements of the Purchase Agreement.

“Effective Date” means the date that the Conversion Shares Registration Statement filed by the Corporation pursuant to the Purchase Agreement is first declared effective by the Commission.

“Exchange Act” means the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder.

“Fundamental Transaction” shall have the meaning set forth in Section 7(d).

“Holder” shall have the meaning given such term in Section 2.

“Junior Securities” means the Common Stock and all other Common Stock Equivalents of the Corporation other than those securities which are explicitly senior or pari passu to the Series B Preferred Stock in dividend rights or liquidation preference.

“Liquidation” shall have the meaning set forth in Section 5.

“New York Courts” shall have the meaning set forth in Section 8(d).

“Notice of Conversion” shall have the meaning set forth in Section 6(a).

“Original Issue Date” means the date of the first issuance of any shares of the Series B Preferred Stock regardless of the number of transfers of any particular shares of Series B Preferred Stock and regardless of the number of certificates which may be issued to evidence such Series B Preferred Stock.

“Person” means an individual or corporation, partnership, trust, incorporated or unincorporated association, joint venture, limited liability company, joint stock company, government (or an agency or subdivision thereof) or other entity of any kind.

“Series B Preferred Stock” shall have the meaning set forth in Section 2.

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“Purchase Agreement” means the Securities Purchase Agreement, dated April 29, 2013, among the Corporation and the original Holders, as amended, modified or supplemented from time to time in accordance with its terms.

“Registration Statement” means a registration statement meeting the requirements set forth in the Purchase Agreement and covering the resale of the Underlying Shares by each Holder as provided for in the Purchase Agreement.

“Securities Act” means the Securities Act of 1933, as amended, and the rules and regulations promulgated thereunder.

“Share Delivery Date” shall have the meaning set forth in Section 6(c).

“Stated Value” shall have the meaning set forth in Section 2.

“Subsidiary” means any Subsidiary of the Corporation as defined in the Purchase Agreement and shall, where applicable, also include any direct or indirect subsidiary of the Corporation formed or acquired after the date of the Purchase Agreement.

“Successor Entity” shall have the meaning set forth in Section 7(d).

“Trading Day” means a day on which the principal Trading Market is open for business.

“Trading Market” means any of the following markets or exchanges on which the Common Stock is listed or quoted for trading on the date in question: the NYSE MKT, the Nasdaq Capital Market, the Nasdaq Global Market, the Nasdaq Global Select Market, the New York Stock Exchange or the OTC Bulletin Board (or any successors to any of the foregoing).

“Transaction Documents” means the Purchase Agreement, this Certificate of Designation and all exhibits and schedules thereto and hereto and any other documents or agreements executed in connection with the transactions contemplated hereunder.

“Transfer Agent” means Computershare Limited, the current transfer agent for the Common Stock, and any successor transfer agent of the Corporation.

“Underlying Shares” means the shares of Common Stock issued and issuable upon conversion of the Series B Preferred Stock.

Section 2. Designation, Amount and Par Value. The series of preferred stock shall be designated as its Series B Convertible Preferred Stock (the “Series B Preferred Stock”) and the number of shares so designated shall be 9,900 (which shall not be subject to increase without the written consent of a majority of the holders of the Series B Preferred Stock (each, a “Holder” and collectively, the “Holders”). Each share of Series B Preferred Stock shall have a par value of \$0.001 per share and a stated value equal to \$1,000 (the “Stated Value”).

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Section 3. Dividends.

a) Holders shall be entitled to receive, and the Corporation shall pay, dividends on shares of Series B Preferred Stock equal (on an as-if-converted-to-Common-Stock basis) to and in the same form as dividends (other than dividends in the form of Common Stock) actually paid on shares of the Common Stock when, as and if such dividends (other than dividends in the form of Common Stock) are paid on shares of the Common Stock. Other than as set forth in the previous sentence, no other dividends shall be paid on shares of Series B Preferred Stock; and the Corporation shall pay no dividends (other than dividends in the form of Common Stock) on shares of the Common Stock unless it simultaneously complies with the previous sentence.

b) Other Securities. So long as any Series B Preferred Stock shall remain outstanding, the Corporation shall not redeem, purchase or otherwise acquire directly or indirectly more than a de minimis amount of any Junior Securities other than as to repurchases of Common Stock or Common Stock Equivalents from departing, officers, directors or employees of the Company or any Subsidiary, and provided that, while any of the Series B Preferred Stock remains outstanding, such repurchases shall not exceed an aggregate of \$100,000 in any fiscal year.

Section 4. Voting Rights. In addition to the voting rights provided by applicable law, the Series B Preferred Stock shall have the right to vote on any matter on which the Common Stock is eligible to vote on an as-if-converted-to-Common-Stock basis; provided that each Holder shall only have the right to vote such shares of Series B Preferred Stock as are eligible for conversion without exceeding the Beneficial Ownership Limitation.

Section 5. Liquidation. Upon any liquidation, dissolution or winding-up of the Corporation, whether voluntary or involuntary (a "Liquidation"), after the satisfaction in full of the debts of the Corporation and the payment of any liquidation preference owed to the holders of shares of capital stock of the Corporation ranking prior to the Series B Preferred Stock upon liquidation, the Holders of the Series B Preferred Stock shall participate pari passu with the holders of the Common Stock (on an as-if-converted-to-Common-Stock basis without regard to any limitation in Section 6(d) on the conversion of this Series B Preferred Stock) in the net assets of the Corporation. The Corporation shall mail written notice of any such Liquidation, not less than 45 days prior to the payment date stated therein, to each Holder.

Section 6. Conversion.

a) Conversions at Option of Holder. Each share of Series B Preferred Stock shall be convertible, at any time and from time to time from and after the

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Original Issue Date at the option of the Holder thereof, into that number of shares of Common Stock (subject to the limitations set forth in Section 6(d)) determined by dividing the Stated Value of such share of Series B Preferred Stock by the Conversion Price. Holders shall effect conversions by providing the Corporation with the form of conversion notice attached hereto as Exhibit A (a "Notice of Conversion"). Each Notice of Conversion shall specify the number of shares of Series B Preferred Stock to be converted, the number of shares of Series B Preferred Stock owned prior to the conversion at issue, the number of shares of Series B Preferred Stock owned subsequent to the conversion at issue and the date on which such conversion is to be effected, which date may not be prior to the date the applicable Holder delivers by facsimile such Notice of Conversion to the Corporation (such date, the "Conversion Date"). If no Conversion Date is specified in a Notice of Conversion, the Conversion Date shall be the date that such Notice of Conversion to the Corporation is deemed delivered hereunder. The calculations and entries set forth in the Notice of Conversion shall control in the absence of manifest or mathematical error. No ink-original Notice of Conversion shall be required, nor shall any medallion guarantee (or other type of guarantee or notarization) of any Notice of Conversion form be required. To effect conversions of shares of Series B Preferred Stock, a Holder shall not be required to surrender the certificate(s) representing the shares of Series B Preferred Stock to the Corporation unless all of the shares of Series B Preferred Stock represented thereby are so converted, in which case such Holder shall deliver the certificate representing such shares of Series B Preferred Stock promptly following the Conversion Date at issue. Shares of Series B Preferred Stock converted into Common Stock or redeemed in accordance with the terms hereof shall be canceled and shall not be reissued.

b) Conversion Price. The conversion price for the Series B Preferred Stock shall equal \$1.83, subject to adjustment herein (the "Conversion Price").

c) Mechanics of Conversion

i. Delivery of Certificate Upon Conversion. Not later than three (3) Trading Days after each Conversion Date (the "Share Delivery Date"), the Corporation shall deliver, or cause to be delivered, to the converting Holder (A) a certificate or certificates representing the Conversion Shares which, on or after the earlier of (i) the six month anniversary of the Original Issue Date or (ii) the Effective Date, shall be free of restrictive legends and trading restrictions (other than those which may then be required by the Purchase Agreement) representing the number of Conversion Shares being acquired upon the conversion of the Series B Preferred Stock (including, if the Corporation has given continuous notice pursuant to Section 3(b) for payment of dividends in shares of Common Stock at least 20 Trading Days prior to the date on which the Notice of Conversion is delivered to the Corporation, shares of Common Stock representing the payment of accrued dividends otherwise determined pursuant to Section 3(a) but assuming that the Dividend Notice Period is the

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20 Trading Days period immediately prior to the date on which the Notice of Conversion is delivered to the Corporation and excluding for such issuance the condition that the Corporation deliver the Dividend Share Amount as to such dividend payment prior to the commencement of the Dividend Notice Period), and (B) a bank check in the amount of accrued and unpaid dividends (if the Corporation has elected or is required to pay accrued dividends in cash). On or after the earlier of (i) the six month anniversary of the Original Issue Date or (ii) the Effective Date, the Corporation shall use its best efforts to deliver any certificate or certificates required to be delivered by the Corporation under this Section 6 electronically through the Depository Trust Company or another established clearing corporation performing similar functions.

ii. Failure to Deliver Certificates. If in the case of any Notice of Conversion, such certificate or certificates are not delivered to or as directed by the applicable Holder by the Share Delivery Date, the Holder shall be entitled to elect by written notice to the Corporation at any time on or before its receipt of such certificate or certificates, to rescind such Conversion, in which event the Corporation shall promptly return to the Holder any original Series B Preferred Stock certificate delivered to the Corporation and the Holder shall promptly return to the Corporation the Common Stock certificates issued to such Holder pursuant to the rescinded Conversion Notice.

iii. Obligation Absolute. The Corporation's obligation to issue and deliver the Conversion Shares upon conversion of Series B Preferred Stock in accordance with the terms hereof are absolute and unconditional, irrespective of any action or inaction by a Holder to enforce the same, any waiver or consent with respect to any provision hereof, the recovery of any judgment against any Person or any action to enforce the same, or any setoff, counterclaim, recoupment, limitation or termination, or any breach or alleged breach by such Holder or any other Person of any obligation to the Corporation or any violation or alleged violation of law by such Holder or any other person, and irrespective of any other circumstance which might otherwise limit such obligation of the Corporation to such Holder in connection with the issuance of such Conversion Shares; provided, however, that such delivery shall not operate as a waiver by the Corporation of any such action that the Corporation may have against such Holder. In the event a Holder shall elect to convert any or all of the Stated Value of its Series B Preferred Stock, the Corporation may not refuse conversion based on any claim that such Holder or anyone associated or affiliated with such Holder has been engaged in any violation of law, agreement or for any other reason, unless an injunction from a court, on notice to Holder, restraining and/or enjoining conversion of all or part of the Series B Preferred Stock of such Holder shall have been sought and obtained, and the Corporation posts a surety bond for the benefit of such Holder in the amount of 150% of the Stated Value of Series B Preferred Stock which is subject to the injunction,

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which bond shall remain in effect until the completion of arbitration/litigation of the underlying dispute and the proceeds of which shall be payable to such Holder to the extent it obtains judgment. In the absence of such injunction, the Corporation shall issue Conversion Shares and, if applicable, cash, upon a properly noticed conversion. Nothing herein shall limit a Holder's right to pursue all remedies available to it hereunder, at law or in equity including, without limitation, a decree of specific performance and/or injunctive relief. The exercise of any such rights shall not prohibit a Holder from seeking to enforce damages pursuant to any other Section hereof or under applicable law.

iv. Compensation for Buy-In on Failure to Timely Deliver Certificates Upon Conversion. In addition to any other rights available to the Holder, if the Corporation fails for any reason to deliver to a Holder the applicable certificate or certificates by the Share Delivery Date pursuant to Section 6(c)(i), and if after such Share Delivery Date such Holder is required by its brokerage firm to purchase (in an open market transaction or otherwise), or the Holder's brokerage firm otherwise purchases, shares of Common Stock to deliver in satisfaction of a sale by such Holder of the Conversion Shares which such Holder was entitled to receive upon the conversion relating to such Share Delivery Date (a "Buy-In"), then the Corporation shall (A) pay in cash to such Holder (in addition to any other remedies available to or elected by such Holder) the amount, if any, by which (x) such Holder's total purchase price (including any brokerage commissions) for the Common Stock so purchased exceeds (y) the product of (1) the aggregate number of shares of Common Stock that such Holder was entitled to receive from the conversion at issue multiplied by (2) the actual sale price at which the sell order giving rise to such purchase obligation was executed (including any brokerage commissions) and (B) at the option of such Holder, either reissue (if surrendered) the shares of Series B Preferred Stock equal to the number of shares of Series B Preferred Stock submitted for conversion (in which case, such conversion shall be deemed rescinded) or deliver to such Holder the number of shares of Common Stock that would have been issued if the Corporation had timely complied with its delivery requirements under Section 6(c)(i). For example, if a Holder purchases shares of Common Stock having a total purchase price of \$11,000 to cover a Buy-In with respect to an attempted conversion of shares of Series B Preferred Stock with respect to which the actual sale price of the Conversion Shares (including any brokerage commissions) giving rise to such purchase obligation was a total of \$10,000 under clause (A) of the immediately preceding sentence, the Corporation shall be required to pay such Holder \$1,000. The Holder shall provide the Corporation written notice indicating the amounts payable to such Holder in respect of the Buy-In and, upon request of the Corporation, evidence of the amount of such loss. Nothing herein shall limit a Holder's right to pursue any other remedies available to it hereunder, at law or in equity including, without limitation, a decree of specific performance and/or injunctive relief with

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respect to the Corporation's failure to timely deliver certificates representing shares of Common Stock upon conversion of the shares of Series B Preferred Stock as required pursuant to the terms hereof.

v. Reservation of Shares Issuable Upon Conversion. The Corporation covenants that it will at all times reserve and keep available out of its authorized and unissued shares of Common Stock for the sole purpose of issuance upon conversion of the Series B Preferred Stock and payment of dividends on the Series B Preferred Stock, each as herein provided, free from preemptive rights or any other actual contingent purchase rights of Persons other than the Holder (and the other holders of the Series B Preferred Stock), not less than such aggregate number of shares of the Common Stock as shall (subject to the terms and conditions set forth in the Purchase Agreement) be issuable (taking into account the adjustments and restrictions of Section 7) upon the conversion of the then outstanding shares of Series B Preferred Stock and payment of dividends hereunder. The Corporation covenants that all shares of Common Stock that shall be so issuable shall, upon issue, be duly authorized, validly issued, fully paid and nonassessable and, if the Conversion Shares Registration Statement is then effective under the Securities Act, shall be registered for public resale in accordance with such Conversion Shares Registration Statement (subject to such Holder's compliance with its obligations under the Registration Rights Agreement).

vi. Fractional Shares. No fractional shares or scrip representing fractional shares shall be issued upon the conversion of the Series B Preferred Stock. As to any fraction of a share which the Holder would otherwise be entitled to purchase upon such conversion, the Corporation shall at its election, either pay a cash adjustment in respect of such final fraction in an amount equal to such fraction multiplied by the Conversion Price or round up to the next whole share.

vii. Transfer Taxes and Expenses. The issuance of certificates for shares of the Common Stock on conversion of this Series B Preferred Stock shall be made without charge to any Holder for any documentary stamp or similar taxes that may be payable in respect of the issue or delivery of such certificates, provided that the Corporation shall not be required to pay any tax that may be payable in respect of any transfer involved in the issuance and delivery of any such certificate upon conversion in a name other than that of the Holders of such shares of Series B Preferred Stock and the Corporation shall not be required to issue or deliver such certificates unless or until the Person or Persons requesting the issuance thereof shall have paid to the Corporation the amount of such tax or shall have established to the satisfaction of the Corporation that such tax has been paid. The Company shall pay all Transfer Agent fees required for same-day processing of any Notice of Conversion.

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d) **Beneficial Ownership Limitation.** The Corporation shall not effect any conversion of the Series B Preferred Stock, and a Holder shall not have the right to convert any portion of the Series B Preferred Stock, to the extent that, after giving effect to the conversion set forth on the applicable Notice of Conversion, such Holder (together with such Holder's Affiliates, and any Persons acting as a group together with such Holder or any of such Holder's Affiliates) would beneficially own in excess of the Beneficial Ownership Limitation (as defined below). For purposes of the foregoing sentence, the number of shares of Common Stock beneficially owned by such Holder and its Affiliates shall include the number of shares of Common Stock issuable upon conversion of the Series B Preferred Stock with respect to which such determination is being made, but shall exclude the number of shares of Common Stock which are issuable upon (i) conversion of the remaining, unconverted Stated Value of Series B Preferred Stock beneficially owned by such Holder or any of its Affiliates and (ii) exercise or conversion of the unexercised or unconverted portion of any other securities of the Corporation subject to a limitation on conversion or exercise analogous to the limitation contained herein (including, without limitation, the Series B Preferred Stock) beneficially owned by such Holder or any of its Affiliates. Except as set forth in the preceding sentence, for purposes of this Section 6(d), beneficial ownership shall be calculated in accordance with Section 13(d) of the Exchange Act and the rules and regulations promulgated thereunder. To the extent that the limitation contained in this Section 6(d) applies, the determination of whether the Series B Preferred Stock is convertible (in relation to other securities owned by such Holder together with any Affiliates) and of how many shares of Series B Preferred Stock are convertible shall be in the sole discretion of such Holder, and the submission of a Notice of Conversion shall be deemed to be such Holder's determination of whether the shares of Series B Preferred Stock may be converted (in relation to other securities owned by such Holder together with any Affiliates) and how many shares of the Series B Preferred Stock are convertible, in each case subject to the Beneficial Ownership Limitation. To ensure compliance with this restriction, each Holder will be deemed to represent to the Corporation each time it delivers a Notice of Conversion that such Notice of Conversion has not violated the restrictions set forth in this paragraph and the Corporation shall have no obligation to verify or confirm the accuracy of such determination. In addition, a determination as to any group status as contemplated above shall be determined in accordance with Section 13(d) of the Exchange Act and the rules and regulations promulgated thereunder. For purposes of this Section 6(d), in determining the number of outstanding shares of Common Stock, a Holder may rely on the number of outstanding shares of Common Stock as stated in the most recent of the following: (i) the Corporation's most recent periodic or annual report filed with the Commission, as the case may be, (ii) a more recent public announcement by the Corporation or (iii) a more recent written notice by the Corporation or the Transfer Agent setting forth the number of shares of Common Stock outstanding. Upon the written or oral request of a Holder, the Corporation shall within two Trading Days confirm orally and in writing to such Holder the number of shares of Common Stock then outstanding. In any case, the number of outstanding shares of Common Stock shall be



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determined after giving effect to the conversion or exercise of securities of the Corporation, including the Series B Preferred Stock, by such Holder or its Affiliates since the date as of which such number of outstanding shares of Common Stock was reported. The “Beneficial Ownership Limitation” shall be 9.99% of the number of shares of the Common Stock outstanding immediately after giving effect to the issuance of shares of Common Stock issuable upon conversion of Series B Preferred Stock held by the applicable Holder. The provisions of this paragraph shall be construed and implemented in a manner otherwise than in strict conformity with the terms of this Section 6(d) to correct this paragraph (or any portion hereof) which may be defective or inconsistent with the intended Beneficial Ownership Limitation contained herein or to make changes or supplements necessary or desirable to properly give effect to such limitation. The limitations contained in this paragraph shall apply to a successor holder of Series B Preferred Stock.

Section 7. Certain Adjustments.

a) Stock Dividends and Stock Splits. If the Corporation, at any time while this Series B Preferred Stock is outstanding: (i) pays a stock dividend or otherwise makes a distribution or distributions payable in shares of Common Stock on shares of Common Stock or any other Common Stock Equivalents (which, for avoidance of doubt, shall not include any shares of Common Stock issued by the Corporation upon conversion of, or payment of a dividend on, this Series B Preferred Stock), (ii) subdivides outstanding shares of Common Stock into a larger number of shares, (iii) combines (including by way of a reverse stock split) outstanding shares of Common Stock into a smaller number of shares, or (iv) issues, in the event of a reclassification of shares of the Common Stock, any shares of capital stock of the Corporation, then the Conversion Price shall be multiplied by a fraction of which the numerator shall be the number of shares of Common Stock (excluding any treasury shares of the Corporation) outstanding immediately before such event, and of which the denominator shall be the number of shares of Common Stock outstanding immediately after such event. Any adjustment made pursuant to this Section 7(a) shall become effective immediately after the record date for the determination of stockholders entitled to receive such dividend or distribution and shall become effective immediately after the effective date in the case of a subdivision, combination or re-classification.

b) Subsequent Rights Offerings. In addition to any adjustments pursuant to Section 7(a) above, if at any time the Corporation grants, issues or sells any Common Stock Equivalents or rights to purchase stock, warrants, securities or other property pro rata to the record holders of any class of shares of Common Stock (the “Purchase Rights”), then the Holder will be entitled to acquire, upon the terms applicable to such Purchase Rights, the aggregate Purchase Rights which the Holder could have acquired if the Holder had held the number of shares of Common Stock acquirable upon complete conversion of such Holder’s Series B Preferred Stock (without regard to any limitations on exercise hereof, including without limitation, the Beneficial Ownership Limitation) immediately before the date on which a record is taken for the grant, issuance or sale of such Purchase

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Rights, or, if no such record is taken, the date as of which the record holders of shares of Common Stock are to be determined for the grant, issue or sale of such Purchase Rights (provided, however, to the extent that the Holder's right to participate in any such Purchase Right would result in the Holder exceeding the Beneficial Ownership Limitation, then the Holder shall not be entitled to participate in such Purchase Right to such extent (or beneficial ownership of such shares of Common Stock as a result of such Purchase Right to such extent) and such Purchase Right to such extent shall be held in abeyance for the Holder until such time, if ever, as its right thereto would not result in the Holder exceeding the Beneficial Ownership Limitation).

c) Pro Rata Distributions. During such time as this Series B Preferred Stock is outstanding, if the Corporation declares or makes any dividend or other distribution of its assets (or rights to acquire its assets) to holders of shares of Common Stock, by way of return of capital or otherwise (including, without limitation, any distribution of cash, stock or other securities, property or options by way of a dividend, spin off, reclassification, corporate rearrangement, scheme of arrangement or other similar transaction) (a "Distribution"), at any time after the issuance of this Series B Preferred Stock, then, in each such case, the Holder shall be entitled to participate in such Distribution to the same extent that the Holder would have participated therein if the Holder had held the number of shares of Common Stock acquirable upon complete Conversion of this Series B Preferred Stock (without regard to any limitations on Conversion hereof, including without limitation, the Beneficial Ownership Limitation) immediately before the date of which a record is taken for such Distribution, or, if no such record is taken, the date as of which the record holders of shares of Common Stock are to be determined for the participation in such Distribution (provided, however, to the extent that the Holder's right to participate in any such Distribution would result in the Holder exceeding the Beneficial Ownership Limitation, then the Holder shall not be entitled to participate in such Distribution to such extent (or in the beneficial ownership of any shares of Common Stock as a result of such Distribution to such extent) and the portion of such Distribution shall be held in abeyance for the benefit of the Holder until such time, if ever, as its right thereto would not result in the Holder exceeding the Beneficial Ownership Limitation).

d) Fundamental Transaction. It at any time while this Series B Preferred Stock is outstanding, (i) the Corporation, directly or indirectly, in one or more related transactions effects any merger or consolidation of the Corporation with or into another Person, (ii) the Corporation, directly or indirectly, effects any sale, lease, license, assignment, transfer, conveyance or other disposition of all or substantially all of its assets in one or a series of related transactions, (iii) any, direct or indirect, purchase offer, tender offer or exchange offer (whether by the Corporation or another Person) is completed pursuant to which holders of Common Stock are permitted to sell, tender or exchange their shares for other securities, cash or property and has been accepted by the holders of 50% or more of the outstanding Common Stock, (iv) the Corporation, directly or indirectly, in one or more related transactions effects any reclassification, reorganization or recapitalization of the

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Common Stock or any compulsory share exchange pursuant to which the Common Stock is effectively converted into or exchanged for other securities, cash or property, or (v) the Corporation, directly or indirectly, in one or more related transactions consummates a stock or share purchase agreement or other business combination (including, without limitation, a reorganization, recapitalization, spin-off or scheme of arrangement) with another Person whereby such other Person acquires more than 50% of the outstanding shares of Common Stock (not including any shares of Common Stock held by the other Person or other Persons making or party to, or associated or affiliated with the other Persons making or party to, such stock or share purchase agreement or other business combination) (each a "Fundamental Transaction"), then, upon any subsequent conversion of this Series B Preferred Stock, the Holder shall have the right to receive, for each Conversion Share that would have been issuable upon such conversion immediately prior to the occurrence of such Fundamental Transaction (without regard to any limitation in Section 6(d) on the conversion of this Series B Preferred Stock), the number of shares of Common Stock of the successor or acquiring corporation or of the Corporation, if it is the surviving corporation, and any additional consideration (the "Alternate Consideration") receivable as a result of such Fundamental Transaction by a holder of the number of shares of Common Stock for which this Series B Preferred Stock is convertible immediately prior to such Fundamental Transaction (without regard to any limitation in Section 6(d) on the conversion of this Series B Preferred Stock). For purposes of any such conversion, the determination of the Conversion Price shall be appropriately adjusted to apply to such Alternate Consideration based on the amount of Alternate Consideration issuable in respect of one share of Common Stock in such Fundamental Transaction, and the Corporation shall apportion the Conversion Price among the Alternate Consideration in a reasonable manner reflecting the relative value of any different components of the Alternate Consideration. If holders of Common Stock are given any choice as to the securities, cash or property to be received in a Fundamental Transaction, then the Holder shall be given the same choice as to the Alternate Consideration it receives upon any conversion of this Series B Preferred Stock following such Fundamental Transaction. To the extent necessary to effectuate the foregoing provisions, any successor to the Corporation or surviving entity in such Fundamental Transaction shall file a new Certificate of Designation with the same terms and conditions and issue to the Holders new preferred stock consistent with the foregoing provisions and evidencing the Holders' right to convert such preferred stock into Alternate Consideration. The Corporation shall cause any successor entity in a Fundamental Transaction in which the Corporation is not the survivor (the "Successor Entity") to assume in writing all of the obligations of the Corporation under this Certificate of Designation and the other Transaction Documents (as defined in the Purchase Agreement) in accordance with the provisions of this Section 7(d) pursuant to written agreements in form and substance reasonably satisfactory to the Holder and approved by the Holder (without unreasonable delay) prior to such Fundamental Transaction and shall, at the option of the holder of this Series B Preferred Stock, deliver to the Holder in exchange for this Series B Preferred Stock a security of the Successor Entity

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evidenced by a written instrument substantially similar in form and substance to this Series B Preferred Stock which is convertible for a corresponding number of shares of capital stock of such Successor Entity (or its parent entity) equivalent to the shares of Common Stock acquirable and receivable upon conversion of this Series B Preferred Stock (without regard to any limitations on the conversion of this Series B Preferred Stock) prior to such Fundamental Transaction, and with a conversion price which applies the conversion price hereunder to such shares of capital stock (but taking into account the relative value of the shares of Common Stock pursuant to such Fundamental Transaction and the value of such shares of capital stock, such number of shares of capital stock and such conversion price being for the purpose of protecting the economic value of this Series B Preferred Stock immediately prior to the consummation of such Fundamental Transaction), and which is reasonably satisfactory in form and substance to the Holder. Upon the occurrence of any such Fundamental Transaction, the Successor Entity shall succeed to, and be substituted for (so that from and after the date of such Fundamental Transaction, the provisions of this Certificate of Designation and the other Transaction Documents referring to the "Corporation" shall refer instead to the Successor Entity), and may exercise every right and power of the Corporation and shall assume all of the obligations of the Corporation under this Certificate of Designation and the other Transaction Documents with the same effect as if such Successor Entity had been named as the Corporation herein.

e) Calculations. All calculations under this Section 7 shall be made to the nearest cent or the nearest 1/100th of a share, as the case may be. For purposes of this Section 7, the number of shares of Common Stock deemed to be issued and outstanding as of a given date shall be the sum of the number of shares of Common Stock (excluding any treasury shares of the Corporation) issued and outstanding.

f) Notice to the Holders.

i. Adjustment to Conversion Price. Whenever the Conversion Price is adjusted pursuant to any provision of this Section 7, the Corporation shall promptly deliver to each Holder a notice setting forth the Conversion Price after such adjustment and setting forth a brief statement of the facts requiring such adjustment.

ii. Notice to Allow Conversion by Holder. If (A) the Corporation shall declare a dividend (or any other distribution in whatever form) on the Common Stock, (B) the Corporation shall declare a special nonrecurring cash dividend on or a redemption of the Common Stock, (C) the Corporation shall authorize the granting to all holders of the Common Stock of rights or warrants to subscribe for or purchase any shares of capital stock of any class or of any rights, (D) the approval of any stockholders of the Corporation shall be required in connection with any reclassification of the Common Stock, any consolidation or merger to which the Corporation is a party, any sale or transfer of all or substantially all of the assets of the Corporation, or any compulsory share exchange whereby the Common

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Stock is converted into other securities, cash or property or (E) the Corporation shall authorize the voluntary or involuntary dissolution, liquidation or winding up of the affairs of the Corporation, then, in each case, the Corporation shall cause to be filed at each office or agency maintained for the purpose of conversion of this Series B Preferred Stock, and shall cause to be delivered to each Holder at its last address as it shall appear upon the stock books of the Corporation, at least twenty (20) calendar days prior to the applicable record or effective date hereinafter specified, a notice stating (x) the date on which a record is to be taken for the purpose of such dividend, distribution, redemption, rights or warrants, or if a record is not to be taken, the date as of which the holders of the Common Stock of record to be entitled to such dividend, distributions, redemption, rights or warrants are to be determined or (y) the date on which such reclassification, consolidation, merger, sale, transfer or share exchange is expected to become effective or close, and the date as of which it is expected that holders of the Common Stock of record shall be entitled to exchange their shares of the Common Stock for securities, cash or other property deliverable upon such reclassification, consolidation, merger, sale, transfer or share exchange, provided that the failure to deliver such notice or any defect therein or in the delivery thereof shall not affect the validity of the corporate action required to be specified in such notice. To the extent that any notice provided hereunder constitutes, or contains, material, non-public information regarding the Corporation or any of the Subsidiaries, the Corporation shall simultaneously file such notice with the Commission pursuant to a Current Report on Form 8-K. The Holder shall remain entitled to convert the Conversion Amount of this Series B Preferred Stock (or any part hereof) during the 20-day period commencing on the date of such notice through the effective date of the event triggering such notice except as may otherwise be expressly set forth herein.

Section 8. Miscellaneous.

a) Notices. Any and all notices or other communications or deliveries to be provided by the Holders hereunder including, without limitation, any Notice of Conversion, shall be in writing and delivered personally, by facsimile, or sent by a nationally recognized overnight courier service, addressed to the Corporation, at the address set forth above Attention: Corporate Secretary, facsimile number (626) 304-3401, or such other facsimile number or address as the Corporation may specify for such purposes by notice to the Holders delivered in accordance with this Section 8. Any and all notices or other communications or deliveries to be provided by the Corporation hereunder shall be in writing and delivered personally, by facsimile, or sent by a nationally recognized overnight courier service addressed to each Holder at the facsimile number or address of such Holder appearing on the books of the Corporation, or if no such facsimile number or address appears on the books of the Corporation, at the principal place of business of such Holder, as set forth in the Purchase Agreement. Any notice or other communication or deliveries hereunder shall be deemed given and effective on the earliest of (i) the date of

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transmission, if such notice or communication is delivered via facsimile at the facsimile number set forth in this Section prior to 5:30 p.m. (New York City time) on any date, (ii) the next Trading Day after the date of transmission, if such notice or communication is delivered via facsimile at the facsimile number set forth in this Section on a day that is not a Trading Day or later than 5:30 p.m. (New York City time) on any Trading Day, (iii) the second Trading Day following the date of mailing, if sent by U.S. nationally recognized overnight courier service, or (iv) upon actual receipt by the party to whom such notice is required to be given.

b) Absolute Obligation. Except as expressly provided herein, no provision of this Certificate of Designation shall alter or impair the obligation of the Corporation, which is absolute and unconditional, to pay liquidated damages, accrued dividends and accrued interest, as applicable, on the shares of Series B Preferred Stock at the time, place, and rate, and in the coin or currency, herein prescribed.

c) Lost or Mutilated Series B Preferred Stock Certificate. If a Holder's Series B Preferred Stock certificate shall be mutilated, lost, stolen or destroyed, the Corporation shall execute and deliver, in exchange and substitution for and upon cancellation of a mutilated certificate, or in lieu of or in substitution for a lost, stolen or destroyed certificate, a new certificate for the shares of Series B Preferred Stock so mutilated, lost, stolen or destroyed, but only upon receipt of evidence of such loss, theft or destruction of such certificate, and of the ownership hereof reasonably satisfactory to the Corporation.

d) Governing Law. All questions concerning the construction, validity, enforcement and interpretation of this Certificate of Designation shall be governed by and construed and enforced in accordance with the internal laws of the State of Delaware, without regard to the principles of conflict of laws thereof. Each party agrees that all legal proceedings concerning the interpretation, enforcement and defense of the transactions contemplated by any of the Transaction Documents (whether brought against a party hereto or its respective Affiliates, directors, officers, shareholders, employees or agents) shall be commenced in the state and federal courts sitting in the City of New York, Borough of Manhattan (the "New York Courts"). Each party hereto hereby irrevocably submits to the exclusive jurisdiction of the New York Courts for the adjudication of any dispute hereunder or in connection herewith or with any transaction contemplated hereby or discussed herein (including with respect to the enforcement of any of the Transaction Documents), and hereby irrevocably waives, and agrees not to assert in any suit, action or proceeding, any claim that it is not personally subject to the jurisdiction of such New York Courts, or such New York Courts are improper or inconvenient venue for such proceeding. Each party hereby irrevocably waives personal service of process and consents to process being served in any such suit, action or proceeding by mailing a copy thereof via registered or certified mail or overnight delivery (with evidence of delivery) to such party at the address in effect for notices to it under this Certificate of Designation and agrees that such service shall constitute good and sufficient service of process and notice thereof. Nothing

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contained herein shall be deemed to limit in any way any right to serve process in any other manner permitted by applicable law. Each party hereto hereby irrevocably waives, to the fullest extent permitted by applicable law, any and all right to trial by jury in any legal proceeding arising out of or relating to this Certificate of Designation or the transactions contemplated hereby. If any party shall commence an action or proceeding to enforce any provisions of this Certificate of Designation, then the prevailing party in such action or proceeding shall be reimbursed by the other party for its attorneys' fees and other costs and expenses incurred in the investigation, preparation and prosecution of such action or proceeding.

e) Waiver. Any waiver by the Corporation or a Holder of a breach of any provision of this Certificate of Designation shall not operate as or be construed to be a waiver of any other breach of such provision or of any breach of any other provision of this Certificate of Designation or a waiver by any other Holders. The failure of the Corporation or a Holder to insist upon strict adherence to any term of this Certificate of Designation on one or more occasions shall not be considered a waiver or deprive that party (or any other Holder) of the right thereafter to insist upon strict adherence to that term or any other term of this Certificate of Designation on any other occasion. Any waiver by the Corporation or a Holder must be in writing.

f) Severability. If any provision of this Certificate of Designation is invalid, illegal or unenforceable, the balance of this Certificate of Designation shall remain in effect, and if any provision is inapplicable to any Person or circumstance, it shall nevertheless remain applicable to all other Persons and circumstances. If it shall be found that any interest or other amount deemed interest due hereunder violates the applicable law governing usury, the applicable rate of interest due hereunder shall automatically be lowered to equal the maximum rate of interest permitted under applicable law.

g) Next Business Day. Whenever any payment or other obligation hereunder shall be due on a day other than a Business Day, such payment shall be made on the next succeeding Business Day.

h) Headings. The headings contained herein are for convenience only, do not constitute a part of this Certificate of Designation and shall not be deemed to limit or affect any of the provisions hereof

i) Status of Converted or Redeemed Series B Preferred Stock. Shares of Series B Preferred Stock may only be issued pursuant to the Purchase Agreement. If any shares of Series B Preferred Stock shall be converted, redeemed or reacquired by the Corporation, such shares shall resume the status of authorized but unissued shares of preferred stock and shall no longer be designated as Series B Preferred Stock.

**EXHIBIT A**

**NOTICE OF CONVERSION**

(TO BE EXECUTED BY THE REGISTERED HOLDER IN ORDER TO CONVERT  
SHARES OF SERIES B PREFERRED STOCK)

The undersigned hereby elects to convert the number of shares of Series B Convertible Preferred Stock indicated below into shares of common stock, par value \$0.001 per share (the "Common Stock"), of Arrowhead Research Corporation, a Delaware corporation (the "Corporation"), according to the conditions hereof, as of the date written below. If shares of Common Stock are to be issued in the name of a Person other than the undersigned, the undersigned will pay all transfer taxes payable with respect thereto and is delivering herewith such certificates and opinions as may be required by the Corporation in accordance with the Purchase Agreement. No fee will be charged to the Holders for any conversion, except for any such transfer taxes.

Conversion calculations:

Date to Effect Conversion: \_\_\_\_\_

Number of shares of Series B Preferred Stock owned prior to Conversion: \_\_\_\_\_

Number of shares of Series B Preferred Stock to be Converted: \_\_\_\_\_

Stated Value of shares of Series B Preferred Stock to be Converted: \_\_\_\_\_

Number of shares of Common Stock to be Issued: \_\_\_\_\_

Applicable Conversion Price: \_\_\_\_\_

Number of shares of Series B Preferred Stock subsequent to Conversion: \_\_\_\_\_

Address for Delivery: \_\_\_\_\_

or

DWAC Instructions:

Broker no: \_\_\_\_\_

Account no: \_\_\_\_\_

[HOLDER]

By: \_\_\_\_\_  
Name:  
Title:



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**ANNEX B**

**ARROWHEAD RESEARCH CORPORATION**  
**CERTIFICATE OF DESIGNATION OF PREFERENCES,**  
**RIGHTS AND LIMITATIONS**  
**OF**  
**SERIES C CONVERTIBLE PREFERRED STOCK**

PURSUANT TO SECTION 151 OF THE  
DELAWARE GENERAL CORPORATION LAW

Section 1. Definitions. For the purposes of this Annex B, the following terms shall have the following meanings:

“Affiliate” means any Person that, directly or indirectly through one or more intermediaries, controls or is controlled by or is under common control with a Person, as such terms are used in and construed under Rule 405 of the Securities Act.

“Beneficial Ownership Limitation” shall have the meaning set forth in Section 6(d).

“Business Day” means any day except any Saturday, any Sunday, any day which is a federal legal holiday in the United States or any day on which banking institutions in the State of New York are authorized or required by law or other governmental action to close.

“Buy-In” shall have the meaning set forth in Section 6(c)(iv).

“Commission” means the United States Securities and Exchange Commission.

“Common Stock” means the Corporation’s common stock, par value \$0.001 per share, and stock of any other class of securities into which such securities may be reclassified or changed after October 10, 2013.

“Common Stock Equivalents” means any securities of the Corporation or the Subsidiaries which would entitle the holder thereof to acquire at any time Common Stock, including, without limitation, any debt, preferred stock, rights, options, warrants or other instrument that is at any time convertible into or exercisable or exchangeable for, or otherwise entitles the holder thereof to receive, Common Stock.

“Conversion Amount” means the sum of the Stated Value at issue.

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“Conversion Date” shall have the meaning set forth in Section 6(a).

“Conversion Price” shall have the meaning set forth in Section 6(b).

“Conversion Shares” means, collectively, the shares of Common Stock issuable upon conversion of the shares of Series C Preferred Stock in accordance with the terms hereof.

“Distribution” shall have the meaning set forth in Section 7(c).

“Effective Date” means the date that the Resale Registration Statement filed by the Corporation pursuant to the Purchase Agreement first becomes effective under the Securities Act.

“Exchange Act” means the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder.

“Fundamental Transaction” shall have the meaning set forth in Section 7(d).

“Holder” shall have the meaning given such term in Section 2.

“Junior Securities” means the Common Stock and all other Common Stock Equivalents of the Corporation other than those securities which are explicitly senior or pari passu to the Series C Preferred Stock in dividend rights or liquidation preference.

“Liquidation” shall have the meaning set forth in Section 5.

“New York Courts” shall have the meaning set forth in Section 8(d).

“Notice of Conversion” shall have the meaning set forth in Section 6(a).

“Original Issue Date” means the date of the first issuance of any shares of the Series C Preferred Stock regardless of the number of transfers of any particular shares of Series C Preferred Stock and regardless of the number of certificates which may be issued to evidence such Series C Preferred Stock.

“Person” means an individual or corporation, partnership, trust, incorporated or unincorporated association, joint venture, limited liability company, joint stock company, government (or an agency or subdivision thereof) or other entity of any kind.

“Series C Preferred Stock” shall have the meaning set forth in Section 2.

“Purchase Agreement” means the Securities Purchase Agreement, dated October 8, 2013, among the Corporation and the original Holders, as amended, modified or supplemented from time to time in accordance with its terms.

“Reference Property” shall have the meaning set forth in Section 7(d).

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“Reference Property Units” shall have the meaning set forth in Section 7(d).

“Resale Registration Statement” means a registration statement that registers the resale of the Conversion Shares of the Holders, who shall be named as “selling stockholders” therein and meets the requirements of the Purchase Agreement.

“Securities Act” means the Securities Act of 1933, as amended, and the rules and regulations promulgated thereunder.

“Share Delivery Date” shall have the meaning set forth in Section 6(c)(i).

“Stated Value” shall have the meaning set forth in Section 2.

“Subsidiary” means any Subsidiary of the Corporation as defined in the Purchase Agreement and shall, where applicable, also include any direct or indirect subsidiary of the Corporation formed or acquired after the date of the Purchase Agreement.

“Successor Entity” shall have the meaning set forth in Section 7(d).

“Trading Day” means a day on which the principal Trading Market is open for business.

“Trading Market” means any of the following markets or exchanges on which the Common Stock is listed or quoted for trading on the date in question: the NYSE MKT, the Nasdaq Capital Market, the Nasdaq Global Market, the Nasdaq Global Select Market, the New York Stock Exchange or the OTC Bulletin Board (or any successors to any of the foregoing).

“Transaction Documents” means the Purchase Agreement, this Certificate of Designation and all exhibits and schedules thereto and hereto and any other documents or agreements executed in connection with the transactions contemplated hereunder.

“Transfer Agent” means Computershare Trust Company, N.A., the current transfer agent for the Common Stock, and any successor transfer agent of the Corporation.

Section 2. Designation, Amount and Par Value. The series of preferred stock shall be designated as the Corporation’s Series C Convertible Preferred Stock (the “Series C Preferred Stock”) and the number of shares so designated shall be 46,000 (which shall not be subject to increase without the written consent of a majority of the holders of the Series C Preferred Stock (each, a “Holder” and collectively, the “Holders”). Each share of Series C Preferred Stock shall have a par value of \$0.001 per share and a stated value equal to \$1,000 (the “Stated Value”).

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Section 3. Dividends; Restrictions on Repurchases and Redemptions of Junior Securities: No Redemption.

a) Dividends. Holders shall be entitled to receive, and the Corporation shall pay, dividends on shares of Series C Preferred Stock equal (on an as-if-converted-to-Common-Stock basis, without regard to any limitation in Section 6(d) on the conversion of the Series C Preferred Stock) to and in the same form, and in the same manner, as dividends (other than dividends in the form of Common Stock) actually paid on shares of the Common Stock when, as and if such dividends (other than dividends in the form of Common Stock) are paid on shares of the Common Stock. Other than as set forth in the previous sentence, no other dividends shall be paid on shares of Series C Preferred Stock; and the Corporation shall pay no dividends (other than dividends in the form of Common Stock) on shares of the Common Stock unless it simultaneously complies with the previous sentence.

b) Repurchases and Redemptions of Junior Securities. So long as any Series C Preferred Stock shall remain outstanding, the Corporation shall not redeem, purchase or otherwise acquire directly or indirectly more than a de minimis amount of any Junior Securities other than as to repurchases of Common Stock or Common Stock Equivalents from departing, officers, directors or employees of the Company or any Subsidiary, and provided that, while any of the Series C Preferred Stock remains outstanding, such repurchases shall not exceed an aggregate of \$100,000 in any fiscal year.

c) No Redemption. The Series C Preferred Stock shall not be redeemable at the election of the Corporation.

Section 4. Voting Rights. In addition to the voting rights provided by applicable law, the Series C Preferred Stock shall have the right to vote on any matter on which the Common Stock is eligible to vote on an as-if-converted-to-Common-Stock basis; provided that each Holder shall only have the right to vote such shares of Series C Preferred Stock as are eligible for conversion without exceeding the Beneficial Ownership Limitation.

Section 5. Liquidation. Upon any liquidation, dissolution or winding-up of the Corporation, whether voluntary or involuntary (a "Liquidation"), after the satisfaction in full of the debts of the Corporation and the payment of any liquidation preference owed to the holders of shares of capital stock of the Corporation ranking prior to the Series C Preferred Stock upon liquidation, the Holders of the Series C Preferred Stock shall participate pari passu with the holders of the Common Stock (on an as-if-converted-to-Common-Stock basis without regard to any limitation in Section 6(d) on the conversion of the Series C Preferred Stock) in the net assets of the Corporation. The Corporation shall mail written notice of any such Liquidation, not less than 45 days prior to the payment date stated therein, to each Holder.

Section 6. Conversion.

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a) Conversions at Option of Holder. Each share of Series C Preferred Stock shall be convertible, at any time and from time to time from and after the Original Issue Date at the option of the Holder thereof, into that number of shares of Common Stock (subject to the limitations set forth in Section 6(d)) determined by dividing the Stated Value of such share of Series C Preferred Stock by the Conversion Price in effect on the Conversion Date for such conversion, subject to Section 6(c)(vi). Holders shall effect conversions by providing the Corporation with the form of conversion notice attached hereto as Exhibit A (a "Notice of Conversion"). Each Notice of Conversion shall specify the number of shares of Series C Preferred Stock to be converted, the number of shares of Series C Preferred Stock owned prior to the conversion at issue, the number of shares of Series C Preferred Stock owned subsequent to the conversion at issue and the date on which such conversion is to be effected, which date may not be prior to the date the applicable Holder delivers (as provided in Section 8(a)) such Notice of Conversion to the Corporation (such date, the "Conversion Date"). If no Conversion Date is specified in a Notice of Conversion, the Conversion Date shall be the date that such Notice of Conversion to the Corporation is deemed delivered hereunder. The calculations and entries set forth in the Notice of Conversion shall control in the absence of manifest or mathematical error. No ink-original Notice of Conversion shall be required, nor shall any medallion guarantee (or other type of guarantee or notarization) of any Notice of Conversion form be required. To effect conversions of shares of Series C Preferred Stock, a Holder shall not be required to surrender the certificate(s) representing the shares of Series C Preferred Stock to the Corporation unless all of the shares of Series C Preferred Stock represented thereby are so converted, in which case such Holder shall deliver the certificate representing such shares of Series C Preferred Stock promptly following the Conversion Date at issue. Shares of Series C Preferred Stock converted into Common Stock in accordance with the terms hereof or repurchased by the Corporation shall be canceled and shall not be reissued.

b) Conversion Price. The conversion price for the Series C Preferred Stock shall initially equal \$5.86, subject to adjustment as provided herein (the "Conversion Price").

c) Mechanics of Conversion

i. Delivery of Certificate Upon Conversion. Not later than three (3) Trading Days after each Conversion Date (the "Share Delivery Date"), the Corporation shall deliver, or cause to be delivered, to the converting Holder a certificate or certificates representing the applicable Conversion Shares which, on or after the earlier of (i) the one-year anniversary of the Original Issue Date or (ii) the Effective Date, shall be free of restrictive legends and trading restrictions (other than those which may then be required by the Purchase Agreement) representing the number of Conversion Shares being acquired upon the conversion of the Series C Preferred Stock. Subject to clauses (ii) and (iv)(B) below, on the Conversion Date with respect to any Conversion Shares, the Person to

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which such Conversion Shares are to be issued shall be deemed to be the holder of record of such Conversion Shares; provided, however, that, subject to clauses (ii) and (iv)(B) below, if such Conversion Date occurs after a record date for the payment of dividends on the Series C Preferred Stock pursuant to Section 3(a) and prior to the related dividend payment date, then such Person shall be deemed to have been the holder of record of such Conversion Shares on such record date (and, for the avoidance of doubt, will be entitled to receive such dividends in respect of such Conversion Shares on such dividend payment date). On or after the earlier of (i) the one-year anniversary of the Original Issue Date or (ii) the Effective Date, the Corporation shall use its best efforts to deliver any certificate or certificates required to be delivered by the Corporation under this Section 6 electronically through the Depository Trust Company or another established clearing corporation performing similar functions.

ii. Failure to Deliver Certificates. If, in the case of any Notice of Conversion, such certificate or certificates are not delivered to or as directed by the applicable Holder by the Share Delivery Date, the Holder shall be entitled to elect by written notice to the Corporation at any time on or before its receipt of such certificate or certificates, to rescind such Conversion, in which event the Corporation shall promptly return to the Holder any original Series C Preferred Stock certificate delivered to the Corporation.

iii. Obligation Absolute. The Corporation's obligation to issue and deliver the Conversion Shares upon conversion of Series C Preferred Stock in accordance with the terms hereof are absolute and unconditional, irrespective of any action or inaction by a Holder to enforce the same, any waiver or consent with respect to any provision hereof, the recovery of any judgment against any Person or any action to enforce the same, or any setoff, counterclaim, recoupment, limitation or termination, or any breach or alleged breach by such Holder or any other Person of any obligation to the Corporation or any violation or alleged violation of law by such Holder or any other person, and irrespective of any other circumstance which might otherwise limit such obligation of the Corporation to such Holder in connection with the issuance of such Conversion Shares; provided, however, that such delivery shall not operate as a waiver by the Corporation of any such action that the Corporation may have against such Holder. In the event a Holder shall elect to convert any or all of the Stated Value of its Series C Preferred Stock, the Corporation may not refuse conversion based on any claim that such Holder or anyone associated or affiliated with such Holder has been engaged in any violation of law or agreement or for any other reason, unless an injunction from a court, on notice to Holder, restraining and/or enjoining conversion of all or part of the Series C Preferred Stock of such Holder shall have been sought and obtained, and the Corporation posts a surety bond for the benefit of such Holder in the amount of 150% of the Stated Value of Series C Preferred Stock which is

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subject to the injunction, which bond shall remain in effect until the completion of arbitration/litigation of the underlying dispute and the proceeds of which shall be payable to such Holder to the extent it obtains judgment. In the absence of such injunction, the Corporation shall issue Conversion Shares and, if applicable, cash, upon a properly noticed conversion. Nothing herein shall limit a Holder's right to pursue all remedies available to it hereunder, at law or in equity, including, without limitation, a decree of specific performance and/or injunctive relief. The exercise of any such rights shall not prohibit a Holder from seeking to enforce damages pursuant to any other Section hereof or under applicable law.

iv. Compensation for Buy-In on Failure to Timely Deliver Certificates Upon Conversion. In addition to any other rights available to the Holder, if the Corporation fails for any reason to deliver to a Holder the applicable certificate or certificates by the Share Delivery Date pursuant to Section 6(c)(i), and if on or after such Share Delivery Date such Holder is required by its brokerage firm to purchase (in an open market transaction or otherwise), or the Holder's brokerage firm otherwise purchases, shares of Common Stock to deliver in satisfaction of a sale by such Holder of the Conversion Shares which such Holder was entitled to receive upon the conversion relating to such Share Delivery Date (a "Buy-In"), then the Corporation shall (A) pay in cash to such Holder (in addition to any other remedies available to or elected by such Holder) the amount, if any, by which (x) such Holder's total purchase price (or, in the case of a purchase by such brokerage firm, the cost charged by such brokerage firm to such Holder with respect thereto) (including any brokerage commissions) for the Common Stock so purchased exceeds (y) the product of (1) the aggregate number of shares of Common Stock that such Holder was entitled to receive from the conversion at issue and which was the subject of such sale multiplied by (2) the actual sale price at which the sell order giving rise to such purchase obligation was executed (including any brokerage commissions) and (B) at the option of such Holder, either reissue (if surrendered) the shares of Series C Preferred Stock equal to the number of shares of Series C Preferred Stock submitted for conversion (in which case, such conversion shall be deemed rescinded) or deliver to such Holder the number of shares of Common Stock that would have been issued if the Corporation had timely complied with its delivery requirements under Section 6(c)(i). For example, if a Holder purchases shares of Common Stock having a total purchase price of \$11,000 to cover a Buy-In with respect to an attempted conversion of shares of Series C Preferred Stock with respect to which the actual sale price of the Conversion Shares (including any brokerage commissions) giving rise to such purchase obligation was a total of \$10,000 under clause (A) of the immediately preceding sentence, the Corporation shall be required to pay such Holder \$1,000. The Holder shall provide the Corporation written notice indicating the amounts payable to such Holder in respect of the Buy-In and, upon

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request of the Corporation, evidence of the amount of such loss. Nothing herein shall limit a Holder's right to pursue any other remedies available to it hereunder, at law or in equity including, without limitation, a decree of specific performance and/or injunctive relief with respect to the Corporation's failure to timely deliver certificates representing shares of Common Stock upon conversion of the shares of Series C Preferred Stock as required pursuant to the terms hereof.

v. Reservation of Shares Issuable Upon Conversion. The Corporation covenants that it will at all times reserve and keep available out of its authorized and unissued shares of Common Stock for the sole purpose of issuance upon conversion of the Series C Preferred Stock, as herein provided, free from preemptive rights or any other actual contingent purchase rights of Persons other than the Holder (and the other Holders of the Series C Preferred Stock), not less than such aggregate number of shares of the Common Stock as shall (subject to the terms and conditions set forth herein) be issuable (taking into account the adjustments and restrictions of Section 7) upon the conversion of the then-outstanding shares of Series C Preferred Stock. The Corporation covenants that all shares of Common Stock that shall be so issuable shall, upon issue, be duly authorized, validly issued, fully paid and nonassessable and, if the Resale Registration Statement is then effective under the Securities Act, shall be registered for public resale in accordance with such Resale Registration Statement (subject to such Holder's compliance with its related obligations under the Purchase Agreement).

vi. Fractional Shares. No fractional shares or scrip representing fractional shares of Common Stock shall be issued upon the conversion of the Series C Preferred Stock. As to any fraction of a share which the Holder would otherwise be entitled to purchase upon such conversion, the Corporation shall at its election, either pay a cash adjustment in respect of such final fraction in an amount equal to such fraction multiplied by the Conversion Price in effect on the relevant Conversion Date or round up to the next whole share.

vii. Transfer Taxes and Expenses. The issuance of certificates for shares of the Common Stock upon conversion of the Series C Preferred Stock shall be made without charge to any Holder for any documentary stamp or similar taxes that may be payable in respect of the issue or delivery of such certificates, provided that the Corporation shall not be required to pay any tax that may be payable in respect of any transfer involved in the issuance and delivery of any such certificate upon conversion in a name other than that of the Holders of such Series C Preferred Stock and the Corporation shall not be required to issue or deliver such certificates unless or until the Person or Persons requesting the issuance thereof shall have paid to the Corporation the amount of such tax or shall have established to the satisfaction of the Corporation that such tax has been paid. The Company shall pay all Transfer Agent fees required for same-day processing of any Notice of Conversion.



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d) Beneficial Ownership Limitation. Notwithstanding anything herein to the contrary, the Corporation shall not effect any conversion of the Series C Preferred Stock, and a Holder shall not have the right to convert any portion of the Series C Preferred Stock, in each case to the extent that, after giving effect to such conversion, such Holder would beneficially own in excess of the Beneficial Ownership Limitation (as defined below). For purposes of this Section 6(d), beneficial ownership of a Holder shall be calculated in accordance with Section 16(a) and (b) of the Exchange Act and the rules and regulations promulgated thereunder for purposes of determining whether such Holder is subject to the reporting and liability provisions of Section 16(a) and 16(b) of the Exchange Act. For purposes of complying with this Section 6(d), the Corporation shall be entitled to conclusively rely on the information set forth in any Holder's Notice of Conversion, and each Holder delivering a Notice of Conversion shall be deemed to represent to the Corporation that such Notice of Conversion does not violate the restrictions set forth in this paragraph, and the Corporation shall have no obligation to verify or confirm the accuracy of such representation. Upon the written or oral request of a Holder, the Corporation shall, within two Trading Days, confirm orally and in writing to such Holder the number of shares of Common Stock then outstanding. The "Beneficial Ownership Limitation" shall be 9.99% of the number of shares of the Common Stock outstanding immediately after giving effect to the issuance of shares of Common Stock issuable upon conversion of Series C Preferred Stock held by the applicable Holder. By written notice to the Company, a Purchaser may from time to time increase or decrease the Beneficial Ownership Limitation applicable solely to such Purchaser to any other percentage not in excess of 19.99% specified in such notice; provided that any such increase will not be effective until the sixty-fifth (65th) day after such notice is delivered to the Company. The express purpose of this Section 6(d) is to preclude any Holder's ownership of any shares of Series C Preferred Stock from causing such Holder to become subject to the reporting and liability provisions of Section 16(a) and 16(b) of the Exchange Act, including pursuant to Rule 16a-2 promulgated by the Commission, and this Section 6(d) shall be interpreted according to such express purpose. Solely for purposes of this Section 6(d) and for purposes of the provisos to Section 7(b) and (c) hereof, the term "Holder" shall include all persons whose beneficial ownership of the Common Stock is aggregated pursuant to Section 13(d)(3) of the Exchange Act or Rule 13d-5 thereunder.

Section 7. Certain Adjustments: Rights of Holders Upon Certain Dividends, Distributions or Fundamental Transactions.

a) Stock Dividends and Stock Splits. If the Corporation, at any time while any Series C Preferred Stock is outstanding: (i) pays a stock dividend or otherwise makes a distribution or distributions payable in shares of Common Stock on shares of Common Stock, (ii) subdivides outstanding shares of Common Stock into a larger number of shares or (iii) combines (including by way of a reverse

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stock split) outstanding shares of Common Stock into a smaller number of shares, then the Conversion Price shall be adjusted to equal an amount equal to such Conversion Price immediately before such adjustment multiplied by a fraction of which the numerator shall be the number of shares of Common Stock outstanding immediately before giving effect to such event, and of which the denominator shall be the number of shares of Common Stock outstanding immediately after giving effect to such event. Any adjustment made pursuant to this Section 7(a) shall become effective immediately after the record date for the determination of stockholders entitled to receive such dividend or distribution and shall become effective immediately after the effective date in the case of a subdivision or combination, as applicable.

b) Subsequent Rights Offerings. In addition to any adjustments pursuant to Section 7(a) above, if at any time the Corporation grants, issues or sells any Common Stock Equivalents or rights to purchase stock, warrants, securities or other property pro rata to the record holders of any class of shares of Common Stock (the "Purchase Rights"), then, without duplication of any dividends to be due on Series C Preferred Stock pursuant to Section 3(a), each Holder will be entitled to acquire, upon the terms applicable to such Purchase Rights, the aggregate Purchase Rights which the Holder could have acquired if such Holder had held the number of shares of Common Stock acquirable upon conversion of such Holder's Series C Preferred Stock (without regard to any limitations on exercise hereof, including without limitation, the Beneficial Ownership Limitation) on the date on which a record is taken for the grant, issuance or sale of such Purchase Rights, or, if no such record is taken, the date as of which the record holders of shares of Common Stock are to be determined for the grant, issue or sale of such Purchase Rights; provided, however, that, to the extent that any Holder's right to participate in any such Purchase Right would result in the Holder exceeding the Beneficial Ownership Limitation, then the Purchase Rights to which such Holder is entitled pursuant hereto shall be limited to the same extent provided in Section 6(d) hereof.

c) Pro Rata Distributions. During such time as the Series C Preferred Stock is outstanding, if the Corporation declares or makes any dividend or other distribution of its assets (or rights to acquire its assets) to holders of shares of Common Stock, by way of return of capital or otherwise (including, without limitation, any distribution of cash, stock or other securities, property or options by way of a dividend, spin off, reclassification, corporate rearrangement, scheme of arrangement or other similar transaction) (a "Distribution"), at any time after the issuance of the Series C Preferred Stock, then, in each such case, without duplication of any dividends to be due on Series C Preferred Stock pursuant to Section 3(a), each Holder shall be entitled to participate in such Distribution to the same extent that such Holder would have participated therein if such Holder had held the number of shares of Common Stock acquirable upon complete Conversion of the Series C Preferred Stock (without regard to any limitations on Conversion hereof, including without limitation, the Beneficial Ownership Limitation) on the date of which a record is taken for such Distribution, or, if no such record is taken,

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the date as of which the record holders of shares of Common Stock are to be determined for the participation in such Distribution; provided, however, that, to the extent that any Holder's right to participate in any such Distribution would result in the Holder exceeding the Beneficial Ownership Limitation, then the rights appurtenant to such securities, property or options to which such Holder is entitled pursuant hereto shall be limited to the same extent provided in Section 6(d) hereof.

d) Fundamental Transaction. If, at any time while the Series C Preferred Stock is outstanding, (i) the Corporation, directly or indirectly, in one or more related transactions is a party to any merger or consolidation of the Corporation, (ii) the Corporation, directly or indirectly, effects any sale, lease, license, assignment, transfer, conveyance or other disposition of all or substantially all of its assets in one or a series of related transactions, (iii) any, direct or indirect, purchase offer, tender offer or exchange offer (whether by the Corporation or another Person) is completed, (iv) the Corporation, directly or indirectly, in one or more related transactions effects any reclassification, reorganization or recapitalization of the Common Stock or any compulsory share exchange, in each case pursuant to which the Common Stock is converted into, exchanged for or represents solely the right to receive, other securities, cash or property, or any combination thereof (such other securities, cash or property, or combination thereof, the "Reference Property," and the amount and kind of Reference Property that a holder of one share of Common Stock would be entitled to receive on account of such transaction, a "Reference Property Unit") (each such transaction, a "Fundamental Transaction"), then, notwithstanding anything to the contrary herein, (I) at the effective time of such Fundamental Transaction, the Conversion Shares due upon conversion of any Series C Preferred Stock shall be determined in the same manner as if each reference to any number of shares of Common Stock in this Certificate of Designation were instead a reference to the same number of Reference Property Units and (II) if such Reference Property Unit consists of any security of a Person other than the Corporation, then such Person (and, as a condition to the Corporation effecting such Fundamental Transaction, the Corporation shall ensure that such Person) shall execute such instruments as shall be necessary to give effect to this Section 7(d). If holders of Common Stock are given any choice as to the securities, cash or property to be received in such Fundamental Transaction, then each Holder shall be given the same choice as to the Reference Property Unit it receives upon any conversion of the Series C Preferred Stock following such Fundamental Transaction. To the extent necessary to effectuate the foregoing provisions, any successor to the Corporation or surviving entity in such Fundamental Transaction shall file a new Certificate of Designation with the same terms and conditions and issue to the Holders new preferred stock consistent with the foregoing provisions and evidencing the Holders' right to convert such preferred stock into Reference Property Units. The Corporation shall cause any successor entity in a Fundamental Transaction in which the Corporation is not the survivor (the "Successor Entity") to assume in writing all of the obligations of the Corporation under this Certificate of Designation and the other Transaction Documents in accordance with the provisions of this Section 7(d) pursuant to written agreements in form and substance reasonably satisfactory to the

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Holders and approved by the Holders (without unreasonable delay) prior to such Fundamental Transaction and shall, at the option of the Holders, deliver to the Holder in exchange for the Series C Preferred Stock a security of the Successor Entity evidenced by a written instrument substantially similar in form and substance to the Series C Preferred Stock which is convertible in accordance with this Section 7(d), and which is reasonably satisfactory in form and substance to the Holders. Upon the occurrence of any such Fundamental Transaction, the Successor Entity shall succeed to, and, except in the case of a lease, be substituted for (so that from and after the date of such Fundamental Transaction, the provisions of this Certificate of Designation and the other Transaction Documents referring to the "Corporation" shall refer instead to the Successor Entity), and may exercise every right and power of the Corporation and shall assume all of the obligations of the Corporation under this Certificate of Designation and the other Transaction Documents with the same effect as if such Successor Entity had been named as the Corporation herein.

e) Calculations. All calculations under this Section 7 shall be made to the nearest cent or the nearest 1/100th of a share, as the case may be. For purposes of this Section 7, the number of shares of Common Stock deemed to be issued and outstanding as of a given date shall be the sum of the number of shares of Common Stock (excluding any treasury shares of the Corporation) issued and outstanding.

f) Notice to the Holders.

i. Adjustment to Conversion Price. Whenever the Conversion Price is adjusted pursuant to any provision of this Section 7, the Corporation shall promptly deliver to each Holder a notice setting forth the Conversion Price after such adjustment and setting forth a brief statement of the facts requiring such adjustment.

ii. Notice to Allow Conversion by Holder. If (A) the Corporation shall declare a dividend (or any other distribution in whatever form) on the Common Stock, (B) the Corporation shall declare a special nonrecurring cash dividend on or a redemption of the Common Stock, (C) the Corporation shall authorize the granting to all holders of the Common Stock of rights or warrants to subscribe for or purchase any shares of capital stock of any class or of any rights, (D) the approval of any stockholders of the Corporation shall be required in connection with any reclassification of the Common Stock, any consolidation or merger to which the Corporation is a party, any sale or transfer of all or substantially all of the assets of the Corporation, or any compulsory share exchange whereby the Common Stock is converted into other securities, cash or property or (E) the Corporation shall authorize the voluntary or involuntary dissolution, liquidation or winding up of the affairs of the Corporation, then, in each case, the Corporation shall cause to be filed at each office or agency maintained for the purpose of conversion of the Series C Preferred Stock, and shall cause to be delivered to each Holder at its last address as it shall

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appear upon the stock books of the Corporation, at least twenty (20) calendar days prior to the applicable record or effective date hereinafter specified, a notice stating (x) the date on which a record is to be taken for the purpose of such dividend, distribution, redemption, rights or warrants, or if a record is not to be taken, the date as of which the holders of the Common Stock of record to be entitled to such dividend, distributions, redemption, rights or warrants are to be determined or (y) the date on which such reclassification, consolidation, merger, sale, transfer, share exchange, dissolution, liquidation or winding up is expected to become effective or close, and the date as of which it is expected that holders of the Common Stock of record shall be entitled to exchange their shares of the Common Stock for securities, cash or other property deliverable upon such reclassification, consolidation, merger, sale, transfer, share exchange, dissolution, liquidation or winding up, provided that the failure to deliver such notice or any defect therein or in the delivery thereof shall not affect the validity of the corporate action required to be specified in such notice. To the extent that any notice provided hereunder constitutes, or contains, material non-public information regarding the Corporation or any of the Subsidiaries, the Corporation shall simultaneously file such notice with the Commission pursuant to a Current Report on Form 8-K. For the avoidance of doubt, notwithstanding such notice or corporate event, each Holder shall remain entitled to convert the Conversion Amount of its Series C Preferred Stock (or any part hereof) as provided herein.

Section 8. Miscellaneous.

a) Notices. Any and all notices or other communications or deliveries to be provided by the Holders hereunder, including, without limitation, any Notice of Conversion, shall be in writing and delivered personally, by facsimile or other electronic delivery, or sent by a nationally recognized overnight courier service, addressed to the Corporation, at the address set forth above Attention: Corporate Secretary, facsimile number (626) 304-3401, or such other facsimile number or address as the Corporation may specify for such purposes by notice to the Holders delivered in accordance with this Section 8(a). Any and all notices or other communications or deliveries to be provided by the Corporation hereunder shall be in writing and delivered personally, by facsimile or other electronic delivery, or sent by a nationally recognized overnight courier service addressed to each Holder at the facsimile number or address of such Holder appearing on the books of the Corporation, or if no such facsimile number or address appears on the books of the Corporation, at the principal place of business of such Holder, as set forth in the Purchase Agreement. Any notice or other communication or deliveries hereunder shall be deemed given and effective on the earliest of (i) the date of transmission, if such notice or communication is delivered via facsimile at the facsimile number set forth in this Section prior to 5:30 p.m. (New York City time) on any date, (ii) the next Trading Day after the date of transmission, if such notice or communication is delivered via facsimile at the facsimile number set forth in this Section on a day that is not a Trading Day or later than 5:30 p.m. (New York City time) on any

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Trading Day, (iii) the second Trading Day following the date of mailing, if sent by U.S. nationally recognized overnight courier service, or (iv) upon actual receipt by the party to whom such notice is required to be given.

b) Absolute Obligation. Except as expressly provided herein, no provision of this Certificate of Designation shall alter or impair the obligation of the Corporation, which is absolute and unconditional, to pay liquidated damages, accrued dividends and accrued interest, as applicable, on the shares of Series C Preferred Stock at the time, place, and rate, and in the coin or currency, herein or in the Purchase Agreement prescribed.

c) Lost or Mutilated Series C Preferred Stock Certificate. If a Holder's Series C Preferred Stock certificate shall be mutilated, lost, stolen or destroyed, the Corporation shall execute and deliver, in exchange and substitution for and upon cancellation of a mutilated certificate, or in lieu of or in substitution for a lost, stolen or destroyed certificate, a new certificate for the shares of Series C Preferred Stock so mutilated, lost, stolen or destroyed, but only upon receipt of evidence of such loss, theft or destruction of such certificate, and of the ownership thereof, reasonably satisfactory to the Corporation.

d) Governing Law. All questions concerning the construction, validity, enforcement and interpretation of this Certificate of Designation shall be governed by and construed and enforced in accordance with the internal laws of the State of Delaware, without regard to the principles of conflict of laws thereof. Each party agrees that all legal proceedings concerning the interpretation, enforcement and defense of the transactions contemplated by any of the Transaction Documents (whether brought against a party hereto or its respective Affiliates, directors, officers, shareholders, employees or agents) shall be commenced in the state and federal courts sitting in the City of New York, Borough of Manhattan (the "New York Courts"). Each party hereto hereby irrevocably submits to the exclusive jurisdiction of the New York Courts for the adjudication of any dispute hereunder or in connection herewith or with any transaction contemplated hereby or discussed herein (including with respect to the enforcement of any of the Transaction Documents), and hereby irrevocably waives, and agrees not to assert in any suit, action or proceeding, any claim that it is not personally subject to the jurisdiction of such New York Courts, or such New York Courts are improper or inconvenient venue for such proceeding. Each party hereby irrevocably waives personal service of process and consents to process being served in any such suit, action or proceeding by mailing a copy thereof via registered or certified mail or overnight delivery (with evidence of delivery) to such party at the address in effect for notices to it under this Certificate of Designation and agrees that such service shall constitute good and sufficient service of process and notice thereof. Nothing contained herein shall be deemed to limit in any way any right to serve process in any other manner permitted by applicable law. Each party hereto hereby irrevocably waives, to the fullest extent permitted by applicable law, any and all right to trial by jury in any legal proceeding arising out of or relating to this Certificate of Designation or the transactions contemplated hereby. If any party

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shall commence an action or proceeding to enforce any provisions of this Certificate of Designation, then the prevailing party in such action or proceeding shall be reimbursed by the other party for its attorneys' fees and other costs and expenses incurred in the investigation, preparation and prosecution of such action or proceeding.

e) Waiver. Any waiver by the Corporation or a Holder of a breach of any provision of this Certificate of Designation shall not operate as or be construed to be a waiver of any other breach of such provision or of any breach of any other provision of this Certificate of Designation or a waiver by any other Holders. The failure of the Corporation or a Holder to insist upon strict adherence to any term of this Certificate of Designation on one or more occasions shall not be considered a waiver or deprive that party (or any other Holder) of the right thereafter to insist upon strict adherence to that term or any other term of this Certificate of Designation on any other occasion. Any waiver by the Corporation or a Holder must be in writing.

f) Severability. If any provision of this Certificate of Designation is invalid, illegal or unenforceable, the balance of this Certificate of Designation shall remain in effect, and if any provision is inapplicable to any Person or circumstance, it shall nevertheless remain applicable to all other Persons and circumstances. If it shall be found that any interest or other amount deemed interest due hereunder violates the applicable law governing usury, the applicable rate of interest due hereunder shall automatically be lowered to equal the maximum rate of interest permitted under applicable law.

g) Next Business Day. Whenever any payment or other obligation hereunder shall be due on a day other than a Business Day, such payment shall be made on the next succeeding Business Day.

h) Headings. The headings contained herein are for convenience only, do not constitute a part of this Certificate of Designation and shall not be deemed to limit or affect any of the provisions hereof.

i) Status of Converted or Reacquired Series C Preferred Stock. Shares of Series C Preferred Stock may only be issued pursuant to the Purchase Agreement. If any shares of Series C Preferred Stock shall be converted or reacquired by the Corporation, such shares shall resume the status of authorized but unissued shares of preferred stock and shall no longer be designated as Series C Convertible Preferred Stock.

**EXHIBIT A**

NOTICE OF CONVERSION

(TO BE EXECUTED BY THE REGISTERED HOLDER IN ORDER TO CONVERT  
SHARES OF SERIES C PREFERRED STOCK)

The undersigned hereby elects to convert the number of shares of Series C Convertible Preferred Stock indicated below into shares of common stock, par value \$0.001 per share (the "Common Stock"), of Arrowhead Research Corporation, a Delaware corporation (the "Corporation"), according to the conditions hereof, as of the date written below. If shares of Common Stock are to be issued in the name of a Person other than the undersigned, the undersigned will pay all transfer taxes payable with respect thereto and is delivering herewith such certificates and opinions as may be required by the Corporation in accordance with the Purchase Agreement. No fee will be charged to the Holders for any conversion, except for any such transfer taxes.

Conversion calculations:

Date to Effect Conversion: \_\_\_\_\_

Number of shares of Series C Preferred Stock owned prior to Conversion: \_\_\_\_\_

Number of shares of Series C Preferred Stock to be Converted: \_\_\_\_\_

Stated Value of shares of Series C Preferred Stock to be Converted: \_\_\_\_\_

Number of shares of Common Stock to be Issued: \_\_\_\_\_

Applicable Conversion Price: \_\_\_\_\_

Number of shares of Series C Preferred Stock subsequent to Conversion: \_\_\_\_\_

Address for Delivery: \_\_\_\_\_

or

DWAC Instructions:

Broker no: \_\_\_\_\_

Account no: \_\_\_\_\_

[HOLDER]

By: \_\_\_\_\_

Name:

Title:





**Important notice regarding the Internet availability of  
proxy materials for the Annual Meeting of shareholders.  
The Notice of the 2015 Annual Meeting of Stockholders; Company's 2015  
Proxy Statement; Company's Annual Report on Form 10-K for the year ended  
September 30, 2014; and Form of Proxy Card are available at:  
[www.edocumentview.com/ARWR](http://www.edocumentview.com/ARWR)**

▼ IF YOU HAVE NOT VOTED VIA THE INTERNET OR TELEPHONE, FOLD ALONG THE PERFORATION, DETACH AND RETURN THE BOTTOM PORTION IN THE ENCLOSED ENVELOPE. ▼



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**Proxy — ARROWHEAD RESEARCH CORPORATION**

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**THIS PROXY IS SOLICITED ON BEHALF OF THE BOARD OF DIRECTORS  
ANNUAL MEETING OF STOCKHOLDERS  
TUESDAY, MARCH 3, 2015**

The undersigned stockholder of ARROWHEAD RESEARCH CORPORATION, a Delaware corporation, hereby acknowledges receipt of the Notice of Annual Meeting of Stockholders and Proxy Statement, each dated January 27, 2015, and hereby appoints Christopher Anzalone and Jane Davidson, or any of them, proxies and attorneys-in-fact with full power to each of substitution, on behalf and in the name of the undersigned, to represent the undersigned at the Annual Meeting of Stockholders of Arrowhead Research Corporation to be held on Tuesday, March 3, 2015 at 10:00 a.m., local time, at the Sheraton Pasadena, 303 E. Cordova Street, Pasadena, California 91101 and at any adjournment or adjournments thereof, and to vote all shares of capital stock that the undersigned would be entitled to vote if then and there personally present, on the matters set forth on the reverse side.

This Proxy, when properly executed, will be voted in the manner directed herein by the undersigned stockholder. If no direction is made, this proxy will be voted FOR the election of each director, IN FAVOR of Proposals 2, 3 and 4 and as the proxy holders deem advisable on such other matters as may properly come before the meeting. This Proxy is revocable with respect to any Proposal in the manner set forth in the Proxy Statement under the heading "Revocability of Proxies."