

ARRHYTHMIA RESEARCH TECHNOLOGY INC /DE/  
Form 424B3  
May 29, 2014

Filed Pursuant to Rule 424(b)(3)  
Registration No. 333-166600

Prospectus Supplement No. 1 to Reoffer Prospectus  
of  
ARRHYTHMIA RESEARCH TECHNOLOGY, INC.  
500,000 Shares of Common Stock, par value \$0.01 per share  
Issuable Pursuant to the 2010 Equity Incentive Plan

This Prospectus Supplement dated May 29, 2014 (this "Supplement"), supplements the reoffer prospectus filed as part of the Registration Statement on Form S-8 filed by Arrhythmia Research Technology, Inc. (the "Company") with the Securities and Exchange Commission (the "SEC") on May 6, 2010 (the "Prospectus"), relating to the resale by certain of our stockholders of shares of our common stock, \$0.01 par value (the "Shares") they received from us pursuant to the Company's 2010 Equity Incentive Plan (the "2010 Plan"). Some of these stockholders may be considered our "affiliates" as defined in Rule 405 under the Securities Act of 1933, as amended (the "Securities Act").

You should read this Supplement in conjunction with the Prospectus. This Supplement is qualified by reference to the Prospectus, except to the extent the information in this Supplement supersedes the information contained in the Prospectus.

Our common stock is listed on the NYSE MKT under the symbol "HRT." The closing price of the Company's common stock as reported on the NYSE MKT on May 28, 2014 was \$6.30 per share.

You should carefully read and consider the risk factors under Item 1A beginning on page 5 of our Annual Report on Form 10-K for the year ended December 31, 2013 for risks relating to investment in the Company's securities.

Neither the SEC nor any state securities commission has approved or disapproved of these securities or passed upon the adequacy or accuracy of this prospectus supplement. Any representation to the contrary is a criminal offense.

The information set forth under the caption "Selling Securityholders" in the Prospectus is amended and restated in its entirety as set forth below and is provided for the primary purpose of including the table of selling stockholders which was not included in the Prospectus inasmuch as no awards had been made under the 2010 Plan at the time the Prospectus was filed.

#### SELLING SECURITYHOLDERS

Shares may be acquired by certain employees, officers, directors and consultants to the Company who may be deemed affiliates of the Company or who hold "control stock" issued to such persons pursuant to the terms of the 2010 Plan. Executive officers, directors or others who are considered to be affiliates of the Company who acquire common stock under the 2010 Plan may be added to the list of selling securityholders and their number of shares to be sold may be increased or decreased by the use of future prospectus supplements filed with the SEC. Each selling securityholder will receive all of the net proceeds from any sale from time to time of his Shares subject of this Supplement in conjunction with the

Prospectus. The inclusion of the Shares in the table below does not constitute a commitment to sell any such Shares. The information in the following table is as of the date of this Supplement.

Name and Position with the Company (1)	Number of Shares Owned (2)	Number of Shares Eligible to be Offered by the Stockholder (3)	Number of Shares Owned After the Offering (4)
Jason R. Chambers Director	132,543 <sup>(5)</sup>	26,000	106,543
Paul F. Walter, M.D. Director	95,555 <sup>(5)</sup>	26,000	69,555
E. P. Marinos Director	85,448 <sup>(5)</sup>	26,000	59,448
Salvatore Emma, Jr. President, Chief Executive Officer and Director	60,010 <sup>(6)</sup>	35,000	25,010
Derek T. Welch Corporate Controller and Principal Financial and Accounting Officer	10,000 <sup>(7)</sup>	10,000	0

(1) The address of all persons listed above is c/o Arrhythmia Research Technology, Inc., 25 Sawyer Passway, Fitchburg, MA 01420.

(2) For each securityholder, includes (i) Shares owned as of the date of this Supplement; (ii) Shares underlying options granted under the 2010 Plan or the 2001 Stock Option Plan (the "2001 Plan") whether or not exercisable within sixty (60) days of the date hereof; and (iii) Shares awarded under the 2010 Plan.

(3) Represents the number of Shares underlying options granted to such person (both vested and unvested) and outstanding under the 2010 Plan and Shares awarded under the 2010 Plan as of the date of this Supplement.

(4) Assumes the sale of all Shares eligible to be sold under the 2010 Plan but does not give effect to the sale of shares of common stock eligible to be sold under the 2001 Plan.

(5) Includes 18,000 shares of common stock issuable upon exercise of vested options issued pursuant to the 2001 Plan (6,000 shares) and the 2010 Plan (12,000 shares); 9,500 shares of common stock issuable upon exercise of unvested options issued pursuant to the 2001 Plan (1,500 shares) and the 2010 Plan (8,000 shares); and 6,000 shares of common stock awarded under the 2010 Plan. The unvested options vest 1,500 shares on January 4, 2015; 2,000 shares on May 19, 2015 and each year thereafter until fully vested; and 2,000 shares on June 3, 2015 and each year thereafter until fully vested.

(6) Includes 19,000 shares of common stock issuable upon exercise of vested options issued pursuant to the 2001 Plan (4,000 shares) and 2010 Plan (15,000 shares); and 21,000 shares of common stock issuable upon exercise of unvested options issued pursuant to the 2001 Plan (1,000 shares) and the 2010 Plan (20,000 shares). The unvested options vest 1,000 shares each on January 4, 2015 and January 4, 2016; 2,000 shares on May 19, 2015 and each year thereafter until fully vested; 2,000 shares on June 3, 2015 and each year thereafter until fully vested; and 3,000 shares on April 1, 2015 and each year thereafter until fully vested.

(7) Includes 10,000 shares issuable upon exercise of unvested options issued pursuant to the 2010 Plan. The unvested options vest 2,000 shares on December 14, 2014 and each year thereafter until fully vested.

Shares covered by the Prospectus as supplemented may be reoffered and resold from time to time by each selling securityholder through brokers or dealers on the NYSE MKT or otherwise at prices acceptable to the selling securityholder. To the Company's knowledge, no specific brokers or dealers have

been designated by any selling securityholder nor has any agreement been entered into in respect of brokerage commissions or for the exclusive sale of any securities, which may be offered pursuant to this prospectus. Alternatively, the selling securityholder may from time to time offer the Shares through underwriters, dealers or agents, which may receive compensation in the form of underwriting discounts, concessions or commissions from the selling securityholder and/or the purchasers of the Shares for whom they may act as agents. The selling securityholder and any underwriters, dealers or agents that participate in the distribution of the Shares may be deemed to be “underwriters” under the Securities Act and any profit on the sale of the Shares by them and any discounts, commissions or concessions received by any such underwriters, dealers or agents might be deemed to be underwriting discounts and commissions under the Securities Act.

Under applicable rules and regulations under the Securities Exchange Act of 1934, as amended (the “Exchange Act”) any person engaged in a distribution of any of the Shares may not simultaneously engage in market activities with respect to the common stock for the applicable period under Regulation M prior to the commencement of such distribution. In addition and without limiting the foregoing, the selling securityholders will be governed by the applicable provisions of the Securities Act and Exchange Act, and the rules and regulations thereunder, including without limitation Rules 10b-5 and Regulation M, which provisions may limit the timing of purchases and sales of any of the Shares by the selling securityholders. Furthermore, under Regulation M, persons engaged in a distribution of securities are prohibited from simultaneously engaging in market making and certain other activities with respect to such securities for a specified period of time prior to the commencement of such distributions subject to specified exceptions or exemptions. All of the foregoing may affect the marketability of the Shares.

The Company will pay all of the fees and expenses incident to the registration of the Shares (other than any fees or expenses of any counsel retained by the selling securityholder and any out-of-pocket expenses incurred by the selling securityholder or any person retained by the selling securityholder in connection with the registration of the Shares) and fees and expenses of compliance with state securities or blue sky laws and commissions.

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This Supplement is dated May 29, 2014