ARRHYTHMIA RESEARCH TECHNOLOGY INC /DE/
Form S-8
April 02, 2008

As filed with the Securities and Exchange Commission on April 2, 2008
Registration No. 333-

UNITED STATES SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM S-8
REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933

ARRHYTHMIA RESEARCH TECHNOLOGY, INC.
(Exact name of registrant as specified in its charter)

Delaware	72-0925679
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification Number)

25 Sawyer Passway, Fitchburg, MA 01420; (978) 345-5000
(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

ARRHYTHMIA RESEARCH TECHNOLOGY, INC. 2001 STOCK OPTION PLAN
(Full title of the plan)

David A. Garrison
Chief Financial Officer
Arrhythmia Research Technology, Inc.
25 Sawyer Passway
Fitchburg, MA 01420
(Name and address of agent for service)

(978) 345-5000
(Telephone number, including area code, of agent for service)

Copies to:

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Large accelerated filer	Accelerated filer
Non-accelerated filer	Smaller reporting company [X]
(Do not check if a smaller reporting company)	

CALCULATION OF REGISTRATION FEE

Title of Securities To Be Registered	Amount To Be Registered	Proposed Maximum Offering Price Per Share	Proposed Maximum Aggregate Offering Price	Amount of Registration Fee
Common Stock, $.01 par value	200,000 shares (1)	$ 5.95(2)	$ 1,190,000(2)	$ 46.77
Common Stock, $.01 par value	200,000 shares (3)	(3)	(3)	(4)

(1) Pursuant to Rule 416 under the Securitites Act of 1933, as amended, an indeterminate amount of additional shares of common stock, which may become issuable pursuant to the anti-dilution provisions of the 2001 Stock Option Plan, as amended (the "Plan") are also being registered hereunder. The shares being registered consist of the following shares, which may be reoffered and resold from time to time: (a) an aggregate of 200,000 shares pursuant to amendment of the 2001 Stock Option Plan on May 11, 2007, (b) an aggregate of 197,000 shares registered on Form S-8 (File No. 333-111326) which registration statement is incorporated herein by reference, and (c) an aggregate of 3,000 shares registered on Form S-8 (File No. 333-120329) which registration statement is incorporated herein by reference.

(2) Estimated solely for the purpose of calculating the registration fee, pursuant to Rule 457(c) and (h)(1) under the Securities Act of 1933, as amended. The price per share and aggregate offering price are based on the average of the high and low prices of Registrant's common stock as reported on the American Stock Exchange on March 31, 2008.

(3) Represents the same shares described in the line above, which may be resold by the holder.

(4) Pursuant to Rule 457(h)(3), no additional fee is payable since the shares, which may be offered for resale, are the same shares being registered hereby upon their initial issuance pursuant to the Plan.

EXPLANATORY NOTE

This registration statement is being filed pursuant to General Instruction E to Form S-8 to reflect that the Board of Directors and majority of the stockholders of Arrhythmia Research Technology, Inc. (the "Company") have amended the Company's 2001 Stock Option Plan (as amended, the "Plan"). This amendment increased the number of shares included in the Plan by 200,000 shares of common stock issuable upon exercise of options, which may be granted pursuant to the Plan. The Company hereby incorporates by reference the contents of its registration statement (a) on Form S-8, File No. 333-111326, as to 197,000 shares issuable pursuant to options granted or to be granted under the Plan, and (b) on Form S-8, File No. 333-120329, as to 3,000 shares previously issued on exercise of options granted under the 2001 Stock Option Plan.

This Registration Statement contains several parts. Immediately following Part I is a "Reoffer Prospectus," which has been prepared in accordance with the requirements of Part I of Form S-3 (as required by Section C.1 of the General Instructions to Form S-8). The Reoffer Prospectus will be used for reoffers and resales by control persons or affiliates of the Company of shares of common stock of the Company to be issued upon exercise of options granted or to be granted pursuant to the Plan. The next part contains information required in the registration statement pursuant to Part II of Form S-8.

Pursuant to the introductory note to Part I of Form S-8, the plan information, which constitutes part of the "Plan Prospectus," is not being filed with the Securities and Exchange Commission.

PART I

ITEM 1. PLAN INFORMATION

The Company will send or give document(s) containing the information specified in Part I to participants as specified by Rule 428(b)(1). These documents are not required to be filed as part of this Registration Statement.

ITEM 2. REGISTRANT INFORMATION AND EMPLOYEE PLAN ANNUAL INFORMATION

Upon written or oral request by a participant in the 2001 Stock Option Plan, as amended, the Company will provide any of the documents incorporated by reference into the Section 10(a) prospectus, without charge. Any document required to be delivered to the participants pursuant to Rule 428(b) will also be delivered without charge.

PROSPECTUS

ARRYTHMIA RESEARCH TECHNOLOGY, INC.

397,000 Shares of Common Stock

This prospectus is being used in connection with the offering from time to time by certain selling stockholders of Arrhythmia Research Technology, Inc. (the "Company") or their successors in interest of shares of the common stock which may be acquired upon the exercise of stock options issued or to be issued pursuant to the Company's 2001 Stock Option Plan, as amended (the "Plan").

The common stock may be sold from time to time by the selling stockholders or by their pledgees, donees, transferees or other successors in interest. Such sales may be made on a stock exchange, in the over-the-counter market or otherwise at prices and at terms then prevailing or at prices related to the then current market price, or in negotiated transactions. The common stock may be sold by one or more of the following: (a) block trades in which the broker or dealer so engaged will attempt to sell the shares as agent but may position and resell portions of the block as principal to facilitate the transaction; (b) purchases by a broker or dealer as principal and resale by such broker or dealer for its account pursuant to this prospectus; (c) an exchange distribution in accordance with the rules of such exchange; and (d) ordinary brokerage transactions and transactions in which the broker solicits purchases. In effecting sales, brokers or dealers engaged by the selling stockholders may arrange for other brokers or dealers to participate. Brokers or dealers will receive commissions or discounts from selling stockholders in amounts to be negotiated immediately prior to the sale. Such brokers or dealers and any other participating brokers or dealers may be deemed to be "underwriters" within the meaning of the Securities Act of 1933, as amended (the "Act") in connection with such sales. In addition, any securities covered by this prospectus which qualify for sale pursuant to Rule 144 may be sold under Rule 144 rather than pursuant to this prospectus. We will not receive any of the proceeds from the sale of these shares, but we will receive proceeds to the extent that currently outstanding options are exercised. We have paid the expenses of preparing this prospectus and the related registration statement.

The closing sales price of our common stock, trading under the symbol "HRT", on March 31, 2008 as reported by the American Stock Exchange ("AMEX") was $ 6.10.

Investing in any of our securities involves risks. Please read carefully the section entitled "Risk Factors" beginning on page 9 of this prospectus.

These securities have not been approved or disapproved by the Securities and Exchange Commission or any state securities commission now has the Commission or any state securities commission passed upon the accuracy or adequacy of this prospectus. Any representation to the contrary is a criminal offense.

The date of this Prospectus is April 2, 2008.

TABLE OF CONTENTS

No person has been authorized to give any information or to make any representations, other than those contained in this prospectus, in connection with the offering made hereby, and, if given or made, such information or representation must not be relied upon as having been authorized by the Company or any other person. Neither the delivery of this prospectus nor any sale made hereunder shall under any circumstances create any implication that there has been no change in the affairs of the Company since the date hereof.

Forward-Looking Statements

Some of the statements set forth in this prospectus are forward-looking statements. These statements involve known and unknown risks, uncertainties and other factors that may cause our or our industry's actual results, levels of activity, performance or achievements to be materially different from any future results, levels of activity, performance, or achievements expressed or implied by forward-looking statements. Such factors include, among other things, those listed under "Risk Factors" and elsewhere in this prospectus.

In some cases, you can identify forward-looking statements by terminology such as "may," "will," "should," "expects," "plan "anticipates," "believes," "estimates," "predicts," "potential," "proposed," "intended," or "continue" or the negative of these other comparable terminology. You should read statements that contain these words carefully, because they discuss our expectations about our future operating results or our future financial condition or state other "forward-looking" information. There may be events in the future that we are not able to accurately predict or control. Before you invest in our securities, you should be aware that the occurrence of any of the events described in these risk factors and elsewhere in this prospectus could substantially harm our business, results of operations and financial condition, and that upon the occurrence of any of these events, the trading price of our securities could decline and you could lose all or part of your investment. Although we believe that the expectations reflected in the forward-looking statements are reasonable, we cannot guarantee future results, growth rates, levels of activity, performance or achievements. We are under no duty to update any of the forward-looking statements after the date of this prospectus to conform these statements to actual results.

PROSPECTUS SUMMARY

The following summary contains basic information about Arrhythmia Research Technology, Inc. and this prospectus. It may not contain all of the information that is important to you. For a more complete understanding, we encourage you to read the entire prospectus and the documents incorporated by reference into this prospectus. In this prospectus, the words "ART," "Company," "we," "our" and "us" refer to Arrhythmia Research Technology, Inc. and our consolidated subsidiary.

Common stock outstanding before the offering	2,711,680 shares (1)
Common stock issuable upon exercise of options granted or to be granted which may be offered pursuant to this prospectus	397,000
AMEX symbol for common stock	HRT
Use of proceeds	We will not receive any proceeds from the sales of these shares. We will receive proceeds to the extent that currently outstanding options are exercised. We will use the exercise proceeds, if any, for working capital and general corporate purposes.
Risk factors	There are risks associated with an investment in the common stock offered by this prospectus. You should carefully consider the risk factors described in this prospectus in the "Risk Factors" section before making a decision to invest.
Executive offices	Our executive offices are located at 25 Sawyer Passway, Fitchburg, MA 01420; telephone: (978) 345-5000.

(1) As of March 21, 2008. Does not include shares of common stock issuable upon exercise of options.

WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and current reports, proxy statements and other information with the Securities and Exchange Commission (the "SEC"). You may read and copy, upon payment of a fee set by the SEC, any documents that we file with the SEC as its public reference room at 100 F Street, N.E., Washington, D.C. 20549. You may also call the SEC at 1-800-432-0330 for more information on the public reference rooms. Our filings are also available to the public on the Internet through the SEC's EDGAR database. You may access the EDGAR database at the SEC's website at www.sec.gov.

This prospectus is part of Registration Statement on Form S-8 that we have filed with the SEC to register the common stock offered hereby under the Act. As permitted by SEC rules, this prospectus does not contain all of the information contained in the registration statement and accompanying exhibits and schedules that we file with the SEC. You may refer to the registration statement, the exhibits and schedules for more information about us and our common stock. The registration statement, exhibits and schedules are available at the SEC's public reference rooms or through its EDGAR database on the Internet.

DOCUMENTS INCORPORATED BY REFERENCE

The following documents, together with any amendments thereof, filed with the SEC pursuant to the Securities Exchange Act of 1934, as amended, (the "Exchange Act") are incorporated herein by reference:

(a) Annual Report on Form 10-K for the fiscal year ended December 31, 2007, filed with the SEC on March 31, 2007;
(b) The description of our Common Stock contained in our Registration Statement on Form 8-A, filed with the SEC on February 12, 1992, including any amendment or reports filed for the purpose of updating such description; and
(c) All other reports filed by the Company pursuant to Section 13(a) and 15(d) of the Exchange Act prior to the sale of all of the shares covered by this registration statement.

Any statement contained in a document incorporated by reference herein shall be deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained herein or in any other subsequently filed document which also is or is deemed to be incorporated by reference herein modifies or supersedes such statement. Any such statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute part of this prospectus.

We will provide without charge to each person to whom this prospectus is delivered, upon written or oral request of that person, a copy of all documents incorporated by reference into the registration statement of which this prospectus is a part, other than exhibits to those documents (unless such exhibits are specifically incorporated by reference into such documents). Requests for such documents should be directed to Secretary, Arrhythmia Research Technology, Inc., 25 Sawyer Passway, Fitchburg, MA 01420, telephone: (978) 345-5000.

THE COMPANY

Arrhythmia Research Technology, Inc., a Delaware corporation ("ART"), is engaged in the development of medical software, which acquires data and analyzes electrical impulses of the heart to detect and aid in the treatment of potentially lethal arrhythmias. ART's patented products consist of signal-averaging electrocardiographic (SAECG) software whose proprietary Windows based version is named the Predictor® series. Rather than having a direct sales force, our current intent is to market ART's product through licensing with original equipment manufacturers. No sales of the software have been recorded in 2007 or 2006.

Our SAECG product is currently used in a National Institutes for Health ("NIH") funded investigation into "Risk Stratification in MADIT II Type Patients". At the completion of this study and assuming favorable study results, we intend to establish contracts with original equipment manufacturers for this product.

Sudden cardiac death afflicts over 400,000 individuals in the United States each year. Sudden death is due to sustained ventricular tachycardia (abnormally rapid heartbeat) or ventricular fibrillation (very fast, completely irregular heartbeat), which severely affect the capability of the heart's pumping chambers or ventricles. Electric signals that emanate from the heart are used to detect the presence of Late Potentials, which may indicate a risk of life-threatening ventricular arrhythmias. The SAECG processes enable Late Potentials to be amplified and enhanced, while eliminating undesired electrical noise in these tests.

ART's wholly owned subsidiary, Micron Products, Inc., a Massachusetts corporation ("Micron"), is a manufacturer and distributor of silver plated and non-silver plated conductive resin sensors ("sensors") used in the manufacture of disposable integrated electrodes constituting a part of electrocardiographic diagnostic and monitoring instruments. Micron also acts as a distributor of metal snap fasteners ("snaps"), another component used in the manufacture of disposable electrodes. The sensors are a critical component of the signal pathway in many different types of disposable electrodes. For example, the disposable electrodes used to capture the electric impulses of the heart and enable the analysis of Late Potentials require sensors which provide for an accurate, low noise signal to be transmitted to the monitoring device. Micron also manufactures and sells or leases assembly machines to its sensor and snap customers.

Figure 1: Schematic of Integtrated ECG Electrode.

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Micron is the largest of a few companies providing silver / silver-chloride sensors to the medical device industry. Micron's customers manufacture monitoring and transmitting electrodes which are utilized in a variety of bio-feedback and bio-stimulation applications including, among many others, electrocardiograms (ECG's), electroencephalograms (EEG's), electro-muscular stimulation (EMS), and thermo-electrical neural stimulation (TENS). Micron also produces high volume precision plastic products. These high volume products leverage the production skills for the resin sensors while providing a diversification from the dependence on a single product line.

In 2004, Micron completed the purchase of substantially all of the operating assets of privately held Shrewsbury Molders Inc. formerly known as New England Molders, Inc. of Shrewsbury, Massachusetts forming the New England Molders ("NEM") division of Micron. This division is a custom thermoplastic injection molder that produces a wide variety of consumable medical products, medical device and equipment components, and other products for the consumer, electronic, aerospace, and defense industries. The NEM division is located at the Company's Fitchburg complex in a renovated 100 year old brick mill building. The location provides operational synergies between Micron and NEM in manufacturing and administration. In early 2007, a class 100,000 level clean room was constructed for precision injection molding to meet NEM's new customer requirement. This manufacturing space was fully operational in February 2007.

The Leominster Tool Division ("LTD"), formed following the December 2006 purchase of substantially all of the operating assets of privately held Leominster Tool Company, Inc., vertically integrates the design, manufacture, and repair of production injection molding tooling used by Micron, NEM, and MIT. The division enjoys a loyal customer base in die casting, plastic blow molding as well as thermoplastic injection molding. Micron and its divisions benefit from an in-house source for injection molding tooling as well as new capabilities in the production of metal components. By late 2008, LTD will be physically integrated into the Fitchburg complex.

Micron Integrated Technologies ("MIT"), a division of Micron, formed in January 2006, specializes in the production of metal and plastic components and assemblies for the medical and defense industries. Leveraging the high quality manufacturing of the NEM division's plastic production capacity and LTD's production capabilities with a comprehensive portfolio of value-added manufacturing, design and engineering services, the division provides complete product life cycle management: from concept to product development, prototyping, volume production, and assembly. The success of the division, which is located in the Mill building in the Fitchburg complex, is dependent on a comprehensive network of small highly specialized manufacturing partners to produce a wide variety of component parts for the manufacture of the division's products.

PRODUCTS

The following table sets forth for the periods specified, the revenue derived from the products of ART and its subsidiary Micron (collectively the "Company"):

	Year Ended December 31,			
	2007	%	2006	%
Sensors	$ 9,510,871	49	$ 10,840,418	56
Other molded products	3,161,497	16	6,866,517	35
Snaps and snap machines	130,385	1	496,092	3
Other products	6,685,009	34	1,115,079	6
Total	$ 19,487,762	100	$ 19,318,106	100

Sensors

Micron is a manufacturer and distributor of silver-plated and non-silver plated conductive resin sensors for use in the manufacture of disposable electrodes for ECG diagnostic, monitoring and related instrumentation. The type of sensor manufactured by Micron consists of a molded plastic substrate plated with a silver / silver chloride surface, which is a highly sensitive conductor of electrical signals. Silver / silver chloride-plated disposable electrodes are utilized in coronary care units, telemetry units, and for other monitoring purposes. In addition to the traditional ECG tests, disposable electrodes incorporating Micron's sensor are used in connection with stress tests, Holter monitoring, and event recorders.

Micron also manufactures sensors and conductive plastic studs used in the manufacture of radio translucent electrodes. The radio translucent conductive plastic studs are manufactured with uniquely engineered resin to enable electrical conductivity between the sensor and the recording instrument without the use of a metal snap. The radio translucent electrodes are virtually invisible to X-rays and are preferred in some medical environments such as nuclear medicine, cardiac catheterization laboratory, and certain stress procedures. Micron also manufactures the mating conductive resin snaps, which replace traditional metal snap fasteners, used in the radio translucent application.

Other custom designed sensors are manufactured for specific unique applications in the EEG, EMG or TENS markets. Recent growth in the volume of highly engineered EEG sensors reflects the increasing demand for noninvasive measuring of neurological impulses. Micron's strength in design and low cost manufacturing support enables our customers to grow into unique niche medical applications and electrophysiological monitoring with custom designed sensors.

Other Molded Products

Micron also sells high volume precision custom molded component parts. The Company's sales in these high volume molded products diversify our existing product lines while utilizing previously unused manufacturing capacity. To defray the customer's upfront tooling costs and remain competitive with global competition, some high volume customers require the financing of a customer specific tool over several years. The cost of the tool is guaranteed by the customer and repaid over time as the molded product is shipped.

The inclusion of the NEM division in the Micron molding facility in 2004 increased production flexibility, and dramatically expanded the size and shape of products. From consumable medical products to medical equipment components, this division has decreased our dependence on sensor production for manufacturing growth. In order to leverage the NEM division's thermoplastic injection molding capabilities, the MIT division produces assemblies using plastic molded components produced by NEM and assembled with outsourced and internally produced metal components.

Snaps and Snap Machines

Metal Snap Fasteners

Metal snap fasteners are used as an attachment and conductive connection between the disposable electrode and the lead wires of an ECG machine. Micron purchases the metal snap fasteners for resale from multiple suppliers and performs additional quality assurance tests, repackages and stocks product for its customers who may or may not purchase the snaps in addition to Micron's sensors.

High Speed Electrode Assembly Machine

Certain manufacturers of disposable medical electrodes use the Company's attaching machines in the assembly of sensors and snaps into disposable electrodes. Manufacturing, leasing, selling, and providing replacement parts to medical sensor and snap application machines provide Micron with a complimentary product to sell to existing sensor and snap customers. As a value added service, a technician can be dispatched to troubleshoot and improve the performance of our customers' fully automated electrode assembly production lines.

Other Products

Subassembly and metal component manufacturing

The MIT division's product life cycle management program is focused on the integration of plastic and metal components into subassemblies. The value added service of in house product capabilities combined with a network of subcontracted specialty coatings, metallurgical treatments, and unique production abilities has diversified this product line to include defense industry consumables and equipment subassemblies for medical device components.

Injection Molding Tooling

The design, manufacture, and rehabilitation of injection molding tools for our customers are part of the service package provided by the NEM division. The design and manufacture of tooling is a leading indicator of future product revenue. Engineering and mold designers work with our customers' product development engineers to design and produce unique tooling for their products. Micron's expertise in cost effective manufacturing creates a sustainable partnership with our customers as prototyped parts move to full scale production.

The LTD's primary product is thermoplastic injection molding tooling. The division provides cost savings to Micron by vertically integrating mold making and repair into the structure of Micron's sensor and custom injection molding businesses, and providing in-house services for the NEM and MIT divisions. The division continues to generate revenues from other customers for similar industrial applications, metal die casting molds, investment casting wax molds, and thermoplastic injection/extrusion blow molds.

Custom Manufactured Metal Medical Devices

During 2007, a medical machining cell was built for the custom computer aided design and computer controlled metal machining of patient specific orthopedic medical device components. The new manufacturing space includes a machine programming office with the latest technology in computer programming for 5-axis machining with CNC vertical milling machines and a state of the art 5-axis machining center. These products involve complex machining of wrought and cast cobalt-chromium-molybdenum alloy into unique customized products. No two components are identical and require precision manufacturing verified by complex computer controlled automated coordinate measuring equipment that measure up to 25 points per square inch. The new space can accommodate a 50% increase in manufacturing capacity before any physical constraints are realized to this climate controlled room.

Signal-Averaging Electrocardiographic (SAECG) Products - Predictor® 7

The Predictor® 7 software is a Windows® compatible version of Arrhythmia Research Technology's analytical program for the detection of Late Potentials. Predictor® 7 utilizes the unique, patented Bi-directional, Four-Pole Butterworth Filtering technique defined as the "Standard" by the joint AHA/ACC/ESC task force on Signal-Averaging Electrocardiography1. All clinically accepted measurement criteria are provided: total QRS duration, duration of the QRS under 40 μV, the RMS voltage of the last 40 msec of the QRS and the noise level. Graphical output of the analysis is presented both on screen and in hard copy. Predictor® 7 also incorporates additional signal processing capabilities for clinical research. The IntraSpect™ module permits detection of ventricular late potentials in patients with Bundle Branch Block. P-wave signal averaging helps predict patients at risk for atrial fibrillation and flutter. A Heart Rate Variability module can be incorporated on the Predictor platform.

The SAECG product is currently used in a National Institutes for Health ("NIH") funded investigation into "Risk Stratification in MADIT II Type Patients". The primary objectives of this study are: 1. To evaluate the predictive value of a multivariate model consisting of pre-specified clinical and ECG parameters for predicting arrhythmic events in Multicenter Automatic Defibrillator Implantation Trial II ("MADIT II") type post-infarction patients; 2. To develop a multivariate risk-stratification model, based on a broader spectrum of pre-specified clinical covariates and

ECG parameters, and from it a risk-scoring algorithm identifying high-risk and low-risk patient groups; this algorithm will be validated by a cross-validation study. Such an algorithm will enable an ordering of patients who may benefit most, and benefit least, from implantable cardiac defibrillator ("ICD") therapy. At the completion of this study, estimated in 2010, and assuming favorable study results, we intend to establish contracts with original equipment manufacturers for this product.

Windows® is a registered trademark of Microsoft Corporation

1 AHA/ACC/ESC Policy Statement: "Standards for the Analysis of Ventricular Late Potentials Using High Resolution or Signal-Averaged Electrocardiography: A Statement by a Task Force Committee of the European Society of Cardiology, the American Heart Association and the American College of Cardiology. JACC Vol. 17, No. 5, April 1991:999-1006

GENERAL

Customers and Sales

During the year ended December 31, 2007, each of two major customers accounted for over 10% of the Company's sales and a loss of this base would have a material adverse effect on results. The two largest customers accounted for 27% and 25% of sales in 2007 as compared to 29% and 20% of sales for the year ended December 31, 2006.

Micron manufactures its sensors against purchase orders from electrode manufacturers. The Company is aware of approximately 30 significant manufacturers of disposable snap type, radio translucent and pre-wired electrodes worldwide. Micron sells its sensors to most of these manufacturers. Sales backlog is not material to Micron's sensor business due to the method of ordering employed by its customer base in this competitive industry. Customers generally purchase on a single purchase order basis without long-term commitments.

The majority of the NEM and MIT divisions' customers for injection molded thermoplastic products are from the medical equipment, medical device and defense industries. From single use medical or defense consumable products to equipment components, the engineered production services provide quality design and production capacity which exceed our customers' manufacturing requirements. Certain customers require that an inventory of their products be maintained at all times to enable just in time delivery schedules. A commitment from customers is required by NEM and MIT to maintain the higher level of finished goods inventory and raw material required for their products. These agreements allow for a more flexible manufacturing schedule with longer more cost effective production cycles. NEM's primary target customer is a medical manufacturer or development company with a need for complex custom injection molded components. MIT's primary target customer is a defense or medical manufacturer or development company with a need for complete product life cycle management from design to full production preferably combining multiple manufacturing technologies such as plastic injection molding, metalworking, assembly, and packaging.

The following table sets forth, for the periods indicated, the approximate consolidated revenues and percentages of revenues derived from the sales of all of the Company's products in its geographic markets:

	Revenues for the Years Ended December 31,			
	2007	%	2006	%
United States	$ 10,824,992	55	$ 9,344,815	48
Canada	5,426,042	28	5,816,071	30
Europe	2,496,012	13	3,415,235	18
Pacific Rim	335,592	2	374,190	2
Other	405,124	2	367,795	2
Total	$ 19,487,762	100	$ 19,318,106	100

While some risks exist in foreign markets, the vast majority of the Company's customers are based in historically stable markets. To reduce the risks associated with foreign shipment and currency exchange fluctuations, the title to most of our products are transferred to our customers when shipped, and payment is required in U.S. Dollars.

To offset the risk from fluctuations in the market price of silver, sensor customers are usually subject to a silver surcharge or discount based on the market price of silver at the time of shipment. The silver surcharge has become a greater component of our product pricing as the price of silver has increased by 65% since the beginning of 2006. The Company is sensitive to the impact of recent increases in silver cost, and continues to explore options with our customers to help mitigate the resulting increases in surcharges.

Marketing and Competition

Micron sells its sensors to manufacturers of disposable snap type and radio translucent ECG electrodes. The Company has one major domestic competitor and several minor competitors worldwide for sensors, and believes that its sales of sensors exceed those of its competition in the aggregate. The sensor and snap market is extremely price sensitive. In an effort to ensure higher volume without a firm long term purchase order, Micron offered a rebate program to customers. The rebates were typically paid to the customer after the end of the calendar year if certain volume thresholds were attained. These rebates were accrued and recorded with each sale as a reduction of gross sales. There were no rebates recorded in 2007 as compared with $65,263 in 2006.

The Company markets Micron and its NEM division as a highly specialized custom injection thermoplastic molder to new and existing customers. The Company believes it competes effectively based on its expertise in low cost manufacturing of high volume precision products. The complex medical products produced by the NEM division have expanded our existing customer base and extensively diversified the product mix. It is our intention to continue these efforts to market to the expanded customer base and further diversify our product offerings. Global competition creates a highly competitive environment. To meet this challenge, the NEM and MIT divisions focus their product development efforts on complex close tolerance products not readily outsourced to offshore manufacturing.

Management is currently pursuing licensing of the SAECG products to original equipment manufacturers for integration into existing cardio diagnostic equipment. As previously stated, the SAECG product is currently used in a National Institutes for Health ("NIH") funded investigation into "Risk Stratification in MADIT II Type Patients". At the completion of this study and assuming favorable study results, we intend to establish multiple contracts with original equipment manufacturers for this product.

Product Suppliers and Manufacturing

Micron manufactures its sensors at its Fitchburg, Massachusetts facility employing a proprietary non-patented multi-step process. All employees sign confidentiality agreements to protect this proprietary process. The raw materials used by Micron are plastic resins used to mold the substrates and silver / silver chloride chemical solutions for plating the molded plastic substrates. Both the resins and the chemicals involved in the silver / silver chloride process are available in adequate supply from multiple commodity sources. Fluctuations in the price of silver are generally contractually passed to customers in the form of a surcharge or discount. As insulation against unanticipated price increases, some resins and chemicals used in the production of sensors are purchased in large quantities to lower or stabilize prices.

Resins used by the custom molding division are purchased for an individual customer order, with most increases in resin costs passed on to the customer as orders are acknowledged. Because the customer order determines the quantity of material required, customers may, and have, guaranteed the purchase of specific large quantities of product which allows the division to purchase raw material at a more favorable cost thereby lowering the final cost to the customer. The metal alloys used by the MIT division in its products are subject to the same customer order limitations, and prices are fixed as the customer guarantees an order.

Micron distributes medical grade nickel-plated brass and stainless steel snap fasteners purchased from multiple domestic and international sources. Micron buys these snaps in bulk, performs additional quality assurance tests, and stocks inventory to facilitate just-in-time shipments to its customers. This business segment has decreased significantly in revenue as price pressure has forced metal snap customers to buy direct from the manufacturer to remain competitive.

Inventory Requirements

Our larger customers benefit from our ability to maintain an inventory of standard sensors and snaps. This inventory policy allows for predictable and planned production resulting in cost efficiencies that we are able to pass on to our customers.

Custom molded product is manufactured on an order by order basis. Finished goods inventory is product made in advance of an acknowledged sales order, part of an annual blanket order quantity, or for a specific safety stock requested by the customer.

Research and Development

ART's research and development efforts focus primarily on maintaining the software library in the SAECG product lines in a compatible platform. Our primary focus in 2007 and 2006 was to verify the integrity of the analytical algorithms, facilitate use of the application in the previously discussed NIH study, and improve the stability of the software on various platforms. For the fiscal years ended December 31, 2007, and 2006, ART had research and development expenses of approximately $38,900 and $57,200, respectively.

In 2007 and 2006, Micron's research and development efforts resulted in $73,500 and $7,100 of expense. Included in these efforts was a unique process improvement to eliminate certain hazardous materials from our manufacturing processes and new products for the medical electrode market.

Patents and Proprietary Technology

ART acquired three patents related to time and frequency domain analysis of electrocardiogram signals in 1993. The technologies are utilized in the current version of Predictor→ 7. ART acquired U.S. Patent No. 5,117,833 entitled "Bi-Spectral Filtering of Electrocardiogram Signals to Determine Selected QRS Potentials," (the "Bi-Spec Patent") which expires in 2009. ART also acquired additional patents, which cover the spectral-temporal, mapping post-processing software packages. In March 1997, the U.S. Patent Office granted United States Patent No. 5,609,158 entitled "Apparatus and Method for Predicting Cardiac Arrhythmia, by Detection of Micropotentials and Analysis of all ECG Segments and Intervals" which covers a frequency domain analysis technique for SAECG data.

The Company believes that ART's products do not and will not infringe on patents or violate proprietary rights of others. In the event that ART's products infringe patents or proprietary rights of others, ART may be required to modify the design of its products or obtain a license. There can be no assurance that ART will be able to do so in a timely manner upon acceptable terms and conditions. In addition, there can be no assurance that ART will have the financial or other resources necessary to enforce or defend a patent infringement or proprietary rights violation action. Moreover, if ART's products infringe patents or proprietary rights of others, ART could, under certain circumstances, become liable for damages, which could have a material adverse effect on earnings.

Micron employs a highly complex, proprietary non-patented multi-step manufacturing process for its silver/silver chloride-plated sensors. To maintain our trade secrets associated with the manufacture of disposable electrode sensors, key employees are required to sign non-disclosure and/or non-competition agreements. Micron uses a patented material in the production of some sensors. Micron paid $7,200 in 2007, and $7,100 in 2006 in royalties associated with this patent. A provisional patent was applied for and received for a new type of product for the electrode industry. Micron expects to have fully evaluated the commercial viability of this product by the end of 2008.

Government Regulation

ART's software products are subject to, and ART believes currently comply with, material clearance and distribution requirements from governmental regulatory authorities, principally the U.S. Food and Drug Administration (FDA) and the European Union (EU) equivalent agency. These agencies promulgate quality system requirements under which a medical device is to be developed, validated and manufactured. The development of the product line will be managed in accordance with applicable regulatory requirements.

Micron's sensor elements are components used in medical devices designed and manufactured by original equipment manufacturers. As such, these elements are not required to be listed with regulatory agencies and do not require regulatory clearance for distribution. However, because Micron primarily distributes sensors to manufacturers for use in finished medical devices, Micron exercises as stringent controls over its manufacturing processes and finished products as would be required if the sensors were considered medical devices.

The NEM and MIT divisions manufacture parts for invasive medical devices, components for medical equipment, patented disposable medical laboratory products, and patented military applications. Our customers own the product designs and are, therefore, subject to FDA, Department of Defense and EU regulations. While such products are a part of a medical device or other regulated equipment, our customers are the regulated entity for the clearance of those products. NEM and MIT exercise stringent controls over all their manufacturing operations, and comply with any special controls required by their customers.

Environmental Regulation

Micron's operations involve use of hazardous and toxic materials, and generate hazardous, toxic and other wastes. Its operations are subject to federal, state and local laws and regulations governing the use, storage, handling and disposal of such materials and certain waste products. Although management believes that our safety procedures for using, handling, storing and disposing of such materials comply with these standards required by state and federal laws and regulations, we cannot completely eliminate the risk of accidental contamination or injury from these materials. An insurance policy has been purchased to mitigate this risk to the Company.

Since its inception, Micron has expended significant funds to train its personnel, install waste treatment and recovery equipment and to retain an independent environmental consulting firm to regularly review, monitor and upgrade its air and waste water treatment activities. Management continues to evaluate and test many possible technological advances that reduce or eliminate the need for and use of hazardous materials in our processes. The recent acquisition of equipment to eliminate a hazardous chemical from the process further emphasizes the commitment to the reduction and elimination of certain hazardous processes. In 2007 and 2006, the related expenditures for waste treatment were approximately $40,250 and $50,000, respectively. The operational costs are expected to be similar in 2008. Micron believes that the operation of its manufacturing facility is in compliance with currently applicable safety, health and environmental laws and regulations.

Employees

As of December 31, 2007, the Company had 92 full-time and 2 part-time employees including 29 administrative, sales and supervisory personnel, 11 quality control personnel and 54 production personnel. The employees of the Company are not represented by a union, and the Company believes its relationship with the employees is satisfactory.

Periodic Reporting and Financial Information

We have registered our common stock under the Securities Exchange Act of 1934, as amended, or the Exchange Act, and have reporting obligations, including the requirement that we file annual and quarterly reports with the SEC. The public may read and copy materials we file with the SEC at the SEC's Public Reference Room at 100 F Street, NE, Washington, DC 20549, on official business days during the hours of 10:00 am to 3:00 pm. You may obtain information about the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330. The SEC maintains an Internet site that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC at http://www.sec.gov.

RISK FACTORS

Risk factors that may affect future operating results

In addition to the other information in this Form 10-K, the following factors should be considered in evaluating the Company and its business. The risks and uncertainties described below are not the only ones facing the Company. Additional risks and uncertainties that the Company does not presently know or currently deems immaterial may also impair the Company's business, results of operations and financial condition.

The Company's operating results may fluctuate significantly as a result of a variety of factors.

Our operating results may fluctuate significantly in the future as a result of a variety of factors, many of which are outside of our control. These factors include our ability to maintain our current pricing model and/or decrease our cost of sales; increasing sales of lower margin products; the level of demand for the products that we may develop; our ability to attract and retain personnel with the necessary strategic, technical and creative skills required for effective operations; the amount and timing of expenditures by customers; variability of customer delivery requirements, continued availability of supplies or materials used in manufacturing at current prices; the amount and timing of capital expenditures and other costs relating to the expansion of our operations; government regulation and general economic conditions. As a strategic response to changes in the competitive environment, we may from time to time make certain pricing, service, technology or marketing decisions or business or technology acquisitions that could have a material adverse effect on our quarterly and annual results. Due to all of these factors, our operating results may fall below the expectations of securities analysts, stockholders and investors in any future period.

If trade secrets are not kept confidential, the secrets may be used by others to compete against us.

Micron relies on unpatented trade secrets to protect its proprietary processes as there are no assurances that others will not independently develop or acquire substantially equivalent technologies or otherwise gain access to our proprietary process. Ultimately the meaningful protection of such unpatented proprietary technology cannot be guaranteed. The Company relies on confidentiality agreements with its employees. Remedies for any breach by a party of these confidentiality agreements may not be adequate to prevent such actions. Failure to maintain trade secret protection, for any reason, could have a material adverse effect on the Company.

Dependence on a limited number of customers.

In the fiscal years 2007 and 2006, 52% and 49%, respectively of the Company's revenues were derived from individual customers with 10% or more of the total sales. The loss of any one or more of these customers would have an immediate significant adverse effect on our financial results. In an effort to maintain this customer base, more favorable terms than might otherwise be agreed to could be granted. Currently, the Company generally does not receive purchase volume commitments extending beyond several months. Large corporations can shift focus away from a need for our product with little or no warning.

The majority of our revenues are derived from the sale of a single product.

In fiscal years 2007 and 2006, the Company derived 49% and 56%, respectively, of its revenues from medical electrode sensors for use in disposable electrodes. While the technology in electrode sensors has been used for many years, there is no assurance that a new patented or unpatented technology might not replace the existing market for disposable electrode sensors. Any substantial technological advance that eliminates our product will have a material adverse effect on our operating results.

The Company is subject to stringent environmental regulations.

The Company is subject to a variety of federal, state and local requirements governing the protection of the environment. These environmental regulations include those related to the use, storage, handling, discharge and disposal of toxic or otherwise hazardous materials used in or resulting from the Company's manufacturing processes. Failure to comply with environmental law could subject the Company to substantial liability or force us to significantly change our manufacturing operations. In addition, under some of these laws and regulations, the Company could be held financially responsible for remedial measures if its properties are contaminated, even if it did not cause the contamination.

The Company may make acquisitions of companies, products or technologies that may disrupt the business and divert management's attention, adversely impacting our results of operations and financial condition.

The Company may make acquisitions of complementary companies, products or technologies from time to time. Any acquisitions will require the assimilation of the operations, products and personnel of the acquired businesses and the training and motivation of these individuals. Management may be unable to maintain and improve upon the uniform standards, controls, procedures and policies if the Company fails in this integration. Acquisitions may cause disruptions in operations and divert management's attention from day-to-day operations, which could impair our relationships with current employees, customers and strategic partners. The Company also may have to, or choose to, incur debt or issue equity securities to pay for any future acquisitions. The issuance of equity securities for an acquisition could be substantially dilutive to our stockholders' holdings. In addition, our profitability may suffer because of such acquisition-related costs or amortization costs for other intangible assets. If management is unable to fully integrate acquired businesses, products, technologies or personnel with existing operations, the Company may not receive the intended benefits of such acquisitions. The Company is not currently party to any agreements, written or oral, for the acquisition of any company, product or technology.

If the Company is unable to keep up with rapid technological changes, our processes, products or services may become obsolete and unmarketable.

The medical device and medical software industries are characterized by technological change over time. Although the Company attempts to expand our technological capabilities in order to remain competitive, discoveries by others may make our processes or products obsolete. If the Company cannot compete effectively in the marketplace, our potential for profitability and financial position will suffer.

The Company could become involved in litigation over intellectual property rights.

The medical device industry has been characterized by extensive litigation regarding patents and other intellectual property rights. Litigation, which would likely result in substantial cost to us, may be necessary to enforce any patents issued or licensed to us and/or to determine the scope and validity of others' proprietary rights. In particular, our competitors and other third parties hold issued patents and are assumed to hold pending patent applications, which may result in claims of infringement against us or other patent litigation. The Company also may have to participate in interference proceedings declared by the United States Patent and Trademark Office, which could result in substantial cost, to determine the priority of inventions.

A product liability suit could adversely affect our operating results.

The testing, manufacture, marketing and sale of medical devices of our customers entail the inherent risk of liability claims or product recalls. If our customers are involved in a lawsuit, it is foreseeable that the Company would also be named. Although the Company maintains product liability insurance, coverage may not be adequate. Product liability insurance is expensive, and in the future may not be available on acceptable terms, if at all. A successful product liability claim or product recall could have a material adverse effect on our business, financial condition, and ability to market product in the future.

The Company’s conversion to a new enterprise resource planning solution may not provide expected benefits.

We have recently converted substantially all of our operational and financial functions to a new enterprise resource planning ("ERP") software system. The ERP system impacts every aspect of our operations, including production, engineering, finance, and sales. Although we have taken steps we believe are reasonable to ensure a successful conversion of our operations to the ERP system, we can provide no assurances that the conversion will be successful or that the ERP system will achieve its expected benefits. Failure to achieve a successful conversion or to obtain the expected benefits of the ERP system could have an adverse material effect on us.

The Company may be exposed to potential risks relating to our internal control over financial reporting and our ability to have those controls attested to by our independent registered public accounting firm.

As directed by Section 404 of the Sarbanes-Oxley Act of 2002 (“SOX 404”), the Securities and Exchange Commission adopted rules requiring public companies to include a report of management on the company’s internal control over financial reporting in their annual reports, including Form 10-K. In addition, the independent registered public accounting firm auditing a company’s financial statements must also attest to and report on management’s assessment of the effectiveness of the company’s internal control over financial reporting as well as the operating effectiveness of the Company’s internal controls. The Company was not subject to these requirements for the fiscal year ended December 31, 2007. We are evaluating our internal control systems in order to allow our management to report on, and our independent auditors attest to, our internal controls, as a required part of our Annual Report on Form 10-K beginning with our report for the fiscal year ended December 31, 2009.

While we expended significant resources beginning in the latter part of 2008 to develop the necessary documentation and testing procedures required by SOX 404, there is a risk that we will not comply with all of the requirements

imposed thereby. In the event the Company no longer qualifies as a smaller reporting company at the end of 2008, we may be subject to more stringent requirements under SOX 404. Accordingly, there can be no assurance that the Company will receive any required attestation from the independent registered public accounting firm. In the event we identify significant deficiencies or material weaknesses in our internal controls that we cannot remediate in a timely manner or we are unable to receive an attestation from the independent registered public accounting firm with respect to our internal controls, investors and others may lose confidence in the reliability of our financial statements and our ability to obtain equity or debt financing could suffer.

Risks Relating To Our Common Stock

The limited public market and trading market may cause possible volatility in our stock price.

There has only been a limited public market for our securities and there can be no assurance that an active trading market in our securities will be maintained. In addition, the overall market for securities in recent years has experienced extreme price and volume fluctuations that have particularly affected the market prices of many smaller companies. The trading price of our common stock is expected to be subject to significant fluctuations including, but not limited to, the following:

- quarterly variations in operating results and achievement of key business metrics;
- changes in earnings estimates by securities analysts, if any;
- any differences between reported results and securities analysts' published or unpublished expectations;
- announcements of new contracts or service offerings by us or our competitors;
- market reaction to any acquisitions, divestitures, joint ventures or strategic investments announced by us or our competitors;
- demand for our services and products;
- shares being sold pursuant to Rule 144; and
- general economic or stock market conditions unrelated to our operating performance.

These fluctuations, as well as general economic and market conditions, may have a material or adverse effect on the market price of our common stock.

Director and officer liability is limited.

As permitted by Delaware law, our certificate of incorporation limits the liability of our directors for monetary damages for breach of a director's fiduciary duty except for liability in certain instances. As a result of our charter provision and Delaware law, stockholders may have limited rights to recover against directors for breach of fiduciary duty. In addition, our certificate of incorporation provides that we shall indemnify our directors and officers to the fullest extent permitted by law.

PROPERTIES

The manufacturing facility and offices of the Company are located in two buildings in an industrial area in Fitchburg, Massachusetts. The first building, which was purchased in April 1994, consists of a 22,000 square foot, six story building. The second building, which was purchased in September 1996, is over 94,000 square feet, including an antique brick three story mill building. Commencing in 2003, the 40,000 square foot “Mill” building portion of the second building underwent major renovations to preserve and create functional space from a previously unusable section of the facility. The renovations created space currently occupied by the NEM and MIT divisions. From October 2006 to February 2007, a third building of approximately 40,000 square feet, a fourth building of 12,000 square feet and vacant parcel between the buildings that abut the complex were acquired without any specific requirement for space. The Company believes the acquisition of the adjacent property positions the Company for continued growth in its current location. The Company believes its current facilities are sufficient to meet current and future production needs through fiscal year ending December 31, 2008.

LEGAL PROCEEDINGS

The Company is from time to time subject to legal proceedings, threats of legal action and claims which arise in the ordinary course of our business. Management believes the resolution of these matters will not have a material adverse effect on our results of operations or financial condition.

USE OF PROCEEDS

The shares which may be sold pursuant to this prospectus will be sold for the respective accounts of each of the selling stockholders. Accordingly, ART will not realize any proceeds from the sale of the shares, except that it will derive proceeds if options currently outstanding or hereafter granted are exercised. If exercised, such funds will be available to ART for working capital and general corporate purposes. No assurance can be given, however, as to when or if any or all of the options will be exercised. All expenses of the registration of the shares will be paid for by ART. See "Selling Stockholders" and "Plan of Distribution."

SELLING STOCKHOLDERS

The following table sets forth the name and relationship to ART of each selling stockholder, the number of shares of common stock which each selling stockholder (1) owned of record before the offering; (2) may acquire pursuant to the exercise of a previously granted option or options which hereafter may be exercisable under the Plan, all of which shares may be sold pursuant to this prospectus; and (3) the amount of common stock to be owned by each selling stockholder and the percentage of the class to be owned by such stockholder, the exercise of all options granted under the Plan, and the sale of all shares acquired upon exercise of such options.

The information contained in this table reflects "beneficial" ownership of common stock within the meaning of Rule 13d-3 under the Exchange Act. As of March 31, 2008 we had 2,711,680 shares of common stock outstanding. Beneficial ownership information reflected in the table includes shares issuable upon the exercise of outstanding options issued by us at their initial exercise prices.

Name	Relationship to Us Within the Past Three Years	Amount of Common Stock Beneficially Owned (1)	Amount Offered Hereby	Percentage of Common Stock to be Owned After the Offering (1)
James Rouse	Director, President and Chief Executive Officer	15,000	15,000(2)	*
E.P. Marinos	Director	59,448(3)	10,000(3)	1.8%
Julius Tabin	Director	126,824(3)	10,000(3)	4.3%
Paul F. Walter	Director	72,055(3)	10,000(3)	2.3%
Jason Chambers	Director	45,549(4)	2,000(5)	1.6%
David A. Garrison	Executive Vice President and Treasurer	28,000(6)	28,000(6)	*
Michael F. Nolan	Chief Operating Officer	--(7)	--(7)	*

(*) Less than 1%.

(1) Unless otherwise noted in these notes, the Company believes that all shares referenced in this table are owned of record by each person named as beneficial owner and that each person has sole voting and dispositive power with respect to the shares of Common stock owned by each of them. In accordance with Rule 13d-3 under the Exchange Act, each person's percentage ownership is determined by assuming that the options that are held by that person, and which are exercisable within 60 days, have been exercised and sold. The address of all persons listed above is c/o Arrhythmia Research Technology, Inc., 25 Sawyer Passway, Fitchburg, MA 01420.

(2) Excludes options granted under the Plan to acquire 9,500 options which are not currently exercisable but which vest and will be exercisable as to 1,900 shares on January 2, 2009 and each anniversary thereafter until fully vested.

(3) Includes 10,000 shares issuable upon exercise of options granted under the Plan but excludes options to acquire an additional 10,000 shares which are not currently exercisable but which vest and will be exercisable as to an additional 2,000 shares on January 2, 2009 and each anniversary thereafter until fully vested.

(4) Includes 35,216 shares held in the EBC Charitable Remainder Trust, for which Mr. Chambers serves as trustee and as to which an immediate family member is beneficiary. Mr. Chambers disclaims beneficial ownership of the shares held by the EBC Charitable Remainder Trust.

(5) Includes options granted under the Plan to acquire 2,000 shares but excludes options to acquire 8,000 shares and an additional 10,000 shares which are not currently exercisable but which vest and will be exercisable as to an additional 2,000 shares and 2,000 shares, respectively, on or after August 4, 2008 and January 2, 2009, respectively, and each anniversary thereafter until fully vested.

(6) Represents 28,000 shares issuable upon exercise of options granted under the Plan; excludes options to acquire 12,500 shares which are not exercisable but which vest and will be exercisable as to 5,000 on July 31, 2008 and as to 1,500 shares on January 2, 2009 and the remaining each anniversary thereafter until fully vested.

(7)

Excludes options granted under the Plan to acquire 10,000 shares and an additional 7,500 shares which are not currently exercisable but which options vest and will be exercisable as to 2,000 shares and 1,500 shares on or after June 4, 2008 and January 2, 2009, respectively, and each anniversary thereafter until fully vested.

PLAN OF DISTRIBUTION

In this section of the prospectus, the term "selling stockholder" means and includes: (1) the persons identified in the table above as the selling stockholders; and (2) any of their donees, pledgees, distributees, transferees or other successors in interest who may (a) receive any of the shares of our common stock offered hereby after the date of this prospectus and (b) the offer or sell those shares hereunder.

The shares of our common stock offered by this prospectus may be sold from time to time directly by the selling stockholders. Alternatively, the selling stockholders may from time to time offer such shares through underwriters, brokers, dealers, agents or other intermediaries. The selling stockholders as of the date of this prospectus have advised us that there were no underwriting or distribution arrangements entered into with respect to the common stock offered hereby. The distribution of the common stock by the selling stockholders may be effected in one or more transactions that may take place on the AMEX (or another exchange or quotation system where the common stock may trade, such as the OTCBB) (including one or more block transaction) through customary brokerage channels, either through brokers acting as agents for the selling stockholders, or through market makers, dealers or underwriters acting as principals who may resell these shares on the AMEX (or another exchange or quotation system where the common stock may trade, such as the OTCBB); in privately-negotiated sales; by a combination of such methods; or by other means. These transactions may be effected at market prices prevailing at the time of sale, at prices related to such prevailing market prices or at other negotiated prices. Usual and customary or specifically negotiated brokerage fees or commissions may be paid by the selling stockholders in connection with sales of our common stock.

The selling stockholders may enter into hedging transactions with broker-dealers in connection with distributions of the shares or otherwise. In such transactions, broker-dealers may engage in short sales of the shares of our common stock in the course of hedging the positions they assume with the selling stockholders. The selling stockholders also may sell shares short and redeliver the shares to close out such short positions. The selling stockholders may enter into option or other transactions with broker-dealers which require the delivery to the broker-dealer of shares of our common stock. The broker-dealer may then resell or otherwise transfer such shares of common stock pursuant to this prospectus.

The selling stockholders also may lend or pledge shares of our common stock to a broker-dealer. The broker-dealer may sell the shares of common stock so lent, or upon a default the broker-dealer may sell the pledged shares of common stock pursuant to this prospectus. Any securities covered by this prospectus which qualify for sale pursuant to Rule 144 may be sold under Rule 144 rather than pursuant to this prospectus. The selling stockholders have advised us that they have not entered into any agreements, understandings or arrangements with any underwriters or broker-dealers regarding the sale of their securities. There is no underwriter or coordinating broker acting in connection with the proposed sale of shares of common stock of the selling stockholders.

Although the shares of common stock covered by this prospectus are not currently being underwritten, the selling stockholders or their underwriters, brokers, dealers or other agents or other intermediaries, if any, that may participate with the selling security holders in any offering or distribution of common stock may be deemed “underwriters” within the meaning of the Act and any profits realized or commissions received by them may be deemed underwriting compensation thereunder.

Under applicable rules and regulations under the Exchange Act, any person engaged in a distribution of shares of the common stock offered hereby may not simultaneously engage in market making activities with respect to the common stock for a period of up to five days preceding such distribution. The selling stockholders will be subject to the applicable provisions of the Exchange Act and the rules and regulations promulgated thereunder, including without limitation Regulation M, which provisions may limit the timing of purchases and sales by the selling stockholders.

In order to comply with certain state securities or blue sky laws and regulations, if applicable, the common stock offered hereby will be sold in such jurisdictions only through registered or licensed brokers or dealers. In certain states, the common stock may not be sold unless they are registered or qualified for sale in such state, or unless an exemption from registration or qualification is available and is obtained.

We will bear all costs, expenses and fees in connection with the registration of the common stock offered hereby. However, the selling stockholders will bear any brokerage or underwriting commissions and similar selling expenses, if any, attributable to the sale of the shares of common stock offered pursuant to this prospectus.

There can be no assurance that the selling stockholders will sell any or all of the securities offered by them hereby.

LEGAL MATTERS

The legality of the common stock to be offered hereby has been passed upon for us by Ellenoff Grossman & Schole LLP, Washington, DC.

EXPERTS

The audited financial statements for our company as of the year ended December 31, 2007, incorporated by reference in this prospectus are reliant on the reports of Carlin, Charron, & Rosen, LLP, independent registered public accountants, as stated in their reports therein, upon the authority of that firm as experts in auditing and accounting.

NO DEALER, SALESMAN OR ANY OTHER PERSON HAS BEEN AUTHORIZED IN CONNECTION WITH THIS OFFERING TO GIVE ANY INFORMATION OR TO MAKE ANY REPRESENTATIONS OTHER THAN THOSE CONTAINED IN THIS PROSPECTUS. THE PROSPECTUS DOES NOT CONSTITUTE AN OFFER OR A SOLICITATION IN ANY JURISDICTION TO ANY PERSON TO WHOM IT IS UNLAWFUL TO MAKE SUCH AN OFFER OR SOLICITATION. NEITHER THE DELIVERY OF THIS PROSPECTUS NOR ANY SALE MADE HEREUNDER SHALL, UNDER ANY CIRCUMSTANCES, CREATE AN IMPLICATION THAT THERE HAS BEEN NO CHANGE IN THE CIRCUMSTANCES OF THE COMPANY OR THE FACTS HEREIN SET FORTH SINCE THE DATE HEREOF.

Arrhythmia Research Technology, Inc.

397,000 Shares of Common Stock

TABLE OF CONTENTS

Prospectus

April 2, 2008

ARRHYTHMIA RESEARCH TECHNOLOGY, INC. HAS FILED WITH THE SECURITIES AND EXCHANGE COMMISSION, WASHINGTON, D.C., A REGISTRATION

STATEMENT UNDER THE SECURITIES ACT WITH RESPECT TO THE SHARES OFFERED HEREBY. THIS PROSPECTUS OMITS CERTAIN INFORMA-TION CONTAINED IN THE REGISTRATION STATEMENT. THE INFORMATION OMITTED MAY BE OBTAINED FROM THE SECURITIES AND EXCHANGE COMMISSION UPON PAYMENT OF THE REGULAR CHARGE THEREFOR.

PART II

INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

Item 3. Incorporation of Documents by Reference

The SEC allows us to incorporate by reference information from other documents that we file with them, which means that we can disclose important information by referring to those documents. The information incorporated by reference is considered to be part of this prospectus, and information that we file later with the SEC will automatically update and supersede this information.

We incorporate by reference the documents listed below together with any amendments thereof:

(a) Annual Report on Form 10-K for the fiscal year ended December 31, 2007, filed with the SEC on March 31, 2008;
(b) The description of our Common Stock contained in our Registration Statement on Form 8-A, filed with the SEC on February 12, 1992, including any amendment or reports filed for the purpose of updating such description; and
(c) All other reports filed by the Company pursuant to Section 13(a), 13(c), 14 and 15(d) of the Securities Exchange Act prior to the sale of all of the shares covered by this registration statement.

We will provide to you, without charge, upon your written or oral request, a copy of any or all of the documents that we incorporate by reference, other than exhibits to those documents. Please direct requests to: Arrhythmia Research Technology, Inc., 25 Sawyer Passway, Fitchburg, Massachusetts 01420, Attn: Corporate Secretary; (978) 345-5000.

Item 4. Description of Securities

Not applicable.

Item 5. Interests of Named Experts and Counsel

Not applicable.

Item 6. Indemnification of Officers and Directors

Section 145 of the General Corporation Law of the State of Delaware grants each corporation organized thereunder, such as the Company, the power to indemnify its directors and officers against liability for certain of their acts. Section 102(b)(7) of the Delaware Corporation Law permits a provision in the certificate of incorporation of each corporation organized thereunder eliminating or limiting, with specified exceptions, the personal liability of a director to the corporation or its stockholders for monetary damages for breach of fiduciary duty as a director. The Company's certificate of incorporation contains this provision. The foregoing statements are subject to the detailed provisions of Sections 145 and 102(b)(7) of the Delaware General Corporation Law.

Article VI of the Company's By-Laws provides that the Company will indemnify its officers, directors and employees to the fullest extent permitted by the Delaware General Corporation Law in connection with proceedings with which any such person is involved by virtue of his or her status as an officer, director, employee or agent. The Company maintains directors' and officers' liability insurance, including a reimbursement policy in favor of the Company.

The By-Laws may require the Company, among other things, to indemnify directors or officers against certain liabilities that may arise by reason of their status or service as directors (other than liabilities resulting from willful misconduct of a culpable nature), to advance expenses to them as they are incurred, provided that they undertake to repay the amount advanced if it is ultimately determined by a court that they are not entitled to indemnification, and to obtain and maintain directors' and officers' insurance if available on reasonable terms.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons pursuant to the foregoing provisions, or otherwise, Arrhythmia has been advised that in the opinion of the SEC such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable.

Item 7. Exemption from Registration Claimed

Not applicable.

Item 8. Exhibits

Exhibit Number	Description
4.1	Arrhythmia Research Technology, Inc. 2001 Stock Option Plan, as amended
5.1	Opinion of Ellenoff Grossman & Schole, LLP
23.1	Carlin, Charron & Rosen, LLP Consent
23.2	Ellenoff Grossman & Schole, LLP Consent (included in Exhibit 5.1)
24.1	Power of Attorney contained on the signature page of this Registration Statement.

Item 9. Undertakings

1) The undersigned registrant hereby undertakes:

(a) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:

(i) To include any prospectus required by Section 10(a)(3) of the Securities Act of 1933;

(ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement, Notwithstanding the foregoing, any increase or decrease in the volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a twenty percent (20%) change in the maximum aggregate offering price set forth in the “Calculation of Registration Fee” table in the effective registration statement; and

(iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement.

Provided, however, that paragraphs 1(a)(i) and 1(a)(ii) do not apply if the registration statement is on Form S-3 or Form S-8 and the information required to be included in a post-effective amendment by those paragraphs is contained in periodic reports filed with or furnished to the Commission by the Registrant pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference herein.

(b) That, for the purpose of determining any liability under the Securities Act of 1933, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered herein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(c) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

2) The undersigned Registrant hereby undertakes that, for purposes of determining any liability under the Securities Act of 1933, each filing of the Registrant's annual report pursuant to Section 13(a) or Section 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Securities Exchange Act of 1934) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered herein,

and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

3) Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the Registrant pursuant to the foregoing provisions, or otherwise, the Registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the Registrant of expenses incurred or paid by a director, officer or controlling person of the Registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the Registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-8 and has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Fitchburg, Massachusetts, on the 2nd day of April, 2008.

ARRHYTHMIA RESEARCH TECHNOLOGY, INC.

By: /s/ David A. Garrison
David A. Garrison
Executive Vice President and Chief Financial Officer

POWER OF ATTORNEY

Each of the undersigned officers and directors of the Registrant whose signature appears below hereby appoints David A. Garrison and James E. Rouse, jointly and individually, as attorneys-in-fact for the undersigned with full power of substitution, to execute in his or her name and on behalf of such person, individually, and in each capacity stated below, this Registration Statement on Form S-8 and one or more amendments (including post-effective amendments) to this Registration Statement and any related registration statement under Rule 462(b) under the Securities Act of 1933 as the attorney-in-fact shall deem appropriate, and to file any such amendment (including exhibits thereto and other documents in connection herewith) to this Registration Statement on Form S-8 or Rule 462(b) registration statement with the Securities and Exchange Commission, granting unto said attorneys-in-fact, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as such person might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact, or either of them, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, as amended, this Registration Statement has been signed by the following persons in the capacities and on the dates indicated.

Signature	Title	Date
/s/ James E. Rouse James E. Rouse	President, Chief Executive Officer and Director (principal executive officer)	April 2, 2008
/s/ David A. Garrison David A. Garrison	Executive Vice President and Chief Financial Officer (principal financial officer)	April 2, 2008
/s/ E. P. Marinos E. P. Marinos	Chairman of the Board and Director	April 2, 2008

/s/ Julius Tabin Julius Tabin	Director	April 2, 2008
/s/ Paul F. Walter Paul F. Walter	Director	April 2, 2008
/s/ Jason R. Chambers Jason R. Chambers	Director	April 2, 2008

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EXHIBIT INDEX

Exhibit Number		Description
4.1		Arrhythmia Research Technology, Inc. 2001 Stock Option Plan, as amended
5.1	-	Opinion of Ellenoff Grossman & Schole, LLP
23.1	-	Carlin, Charron, & Rosen, LLP Consent
23.2	-	Ellenoff Grossman & Schole, LLP Consent (included in Exhibit 5.1)
24.1		Power of Attorney contained on the signature page of this Registration Statement