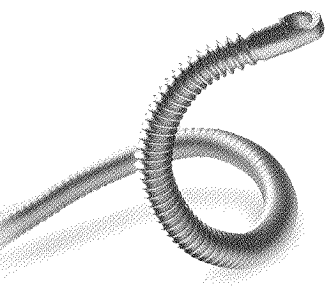
Moving in the Right Direction.*

2008 Annual Report

ATS
MEDICAL
Focused right
on cardiac surgery.

Bands represent "a new dimension in valve repair"—making repair an increasingly viable option to valve replacement in more cases. Both the ATS Simulus® Semi-Rigid and ATS Simulus® Adjustable Rings were released in 2008. We plan to drive growth in our repair business through additional expansion of the platform in both the flexible and semi-rigid segments. Based on the breadth of our product offering, we expect to continue to grow share and revenues strongly in this segment in 2009.

Cryoablation. The ATS CryoMaze™ Surgical Ablation System continues to be the "gold standard" in clinical efficacy for less-invasive surgical treatment of cardiac arrhythmia. We have increased dollar market share to 13% of the $130 million global surgical arrhythmia market opportunity, up from 10% in the prior year. Our worldwide share of arrhythmia procedures rose to 18% exiting 2008, compared to 14% entering the year. Revenue growth of 74% was broad based with the U.S. market growing 84% and the international market gaining 55%. To lend further surgeon advocacy and direction in our efforts to increase adoption of this compelling technology, we formed the Cryoablation Surgical Advisory Board, led by Dr. James Cox, our medical director and pioneer of the Cox-Maze procedure for the treatment of atrial fibrillation. Dr. Cox and the rest of our advisory board have been leading very successful and well-attended symposia on cryoablation. Further, Dr. Cox recently conducted the first of several training programs that will become the model by which we help surgeons gain proficiency in their surgical treatment of cardiac arrhythmia. In total, more than 25 centers in the U.S. are now doing stand-alone surgical cryoablation procedures. On the heels of Dr. Cox's training modules and the influence and accessibility of our Surgical Advisory Board, we expect to see that number steadily increase. Based on the proven benefits of the ATS CryoMaze product platform, we continue to anticipate this to be one of the most robust opportunities and priorities for ATS in 2009 and beyond.



Michael Dale

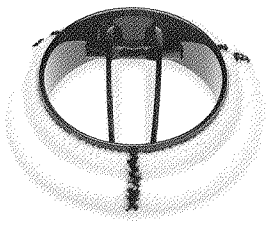
President and CEO
ATS Medical, Inc.

An active year. ATS Medical introductions in 2008: ATS Open Pivot® AP360™ Mechanical Heart Valve, ATS 3f® Aortic Bioprosthesis, ATS Simulus® Semi-Rigid Annuloplasty Ring, ATS Simulus Adjustable® Annuloplasty Ring and ATS CryoMaze™ Clamp. We have several exciting releases and milestones slated for 2009, including the anticipated European launch of the ATS 3f Enable™ Aortic Bioprosthesis and final concept study for Forcefield,™ our treatment process designed to create the first truly biocompatible interface between a prosthesis and the patient's own blood to eliminate the need for concomitant anti-coagulation therapy.

Growth in all geographies and product platforms.

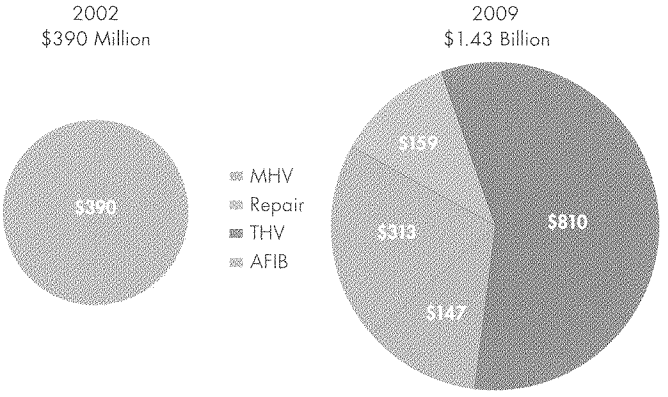
It is with a shared sense of pride among ATS Medical management and employees that I present this year's annual report. I am very encouraged by the underlying strength across all of our businesses and geographies. Overall in 2008, ATS Medical achieved a 33% revenue gain from $49.6 million to $68.5 million while increasing gross margin to 62% and gross profit from $28 million to $41 million. In many ways 2008 performance is confirmation that our persistent focus on addressing competitive gaps in cardiac surgery with meaningfully differentiated products and services can create real value. Six years ago, we embarked on an intentional strategy away from the crowd. While this was sometimes met with skepticism, we've never strayed from our focus on structural heart disease and investment in differentiated products with product lines that "advance the standard." As a result, ATS Medical is a vastly different company than it was in 2002. The results highlighted in this report are a strong indication that ATS Medical indeed provides real value by delivering a highly relevant portfolio of products to cardiac surgeons on a worldwide basis.

Mechanical Heart Valves. Our share of the $313 million global mechanical heart valve market again increased — to an estimated 14%, up from 11% in 2007. ATS Open Pivot® Heart Valves are now implanted in an estimated 22% of procedures worldwide. Overall, mechanical heart valve revenues grew 20% year over year. The introduction of the ATS Open Pivot® AP360™ drove a mechanical heart valve revenue increase of 26% internationally in 2008 as well as an accelerated growth rate of 21% in the U.S. in the fourth quarter. Although total market growth for this sector has slowed to single digit rates, we continue to believe that, over time, ATS Medical has the ability to achieve the number one position globally based on the inherent advantages of the Open Pivot heart valve.



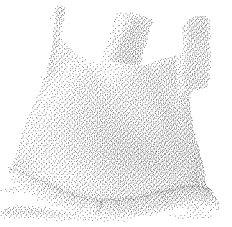
Tissue Heart Valves. Tissue heart valves represent an estimated $810 million worldwide market opportunity in 2009 with the U.S. accounting for more than

Total Opportunity



The total market opportunity for ATS Medical has grown dramatically, from $390 million in 2002 to $1.43 billion today.

$430 million. Overall, worldwide tissue valve revenue grew strongly, up 173%. We received FDA approval of the ATS 3f® Aortic Bioprosthesis in the fourth quarter and began initial implants with two centers during that quarter. We are extremely encouraged that early enthusiastic response among surgeons to the ATS 3f Valve will provide us with considerable growth potential in this market. Carefully built inventory levels in advance of the U.S. launch have served us well as early U.S. demand is robust amidst this enthusiasm. The initial success of the rollout further validates the strength and significance of the 3f valve platform which includes two sutureless product iterations: The ATS 3f Enable® Aortic Bioprosthesis, a nitinol self-expanding stent platform and the ATS 3f Entrata Aortic Valve System,™ a platform that may be used in both open or closed chest surgical procedures. With enrollment in the CE mark clinical trial finishing up in the near term, we now expect European regulatory approval for the ATS 3f Enable Valve in the second half of 2009.



Valve Repair. ATS Simulus® Annuloplasty Repair Products continue to draw rave reviews and acceptance from surgeons as evidenced by year-over-year revenue growth of 80%. Contributing to this success is continued surgeon acknowledgement that the anatomically correct design of the ATS Simulus Rings and

Achieving meaningful differentiation can be tricky business. Moving counter to competition for its own sake is reckless; going against the grain with purpose is ideal. It has been six years since new management at ATS Medical began taking distinct and deliberate steps to provide unique value to its stakeholders. ATS Medical sought differentiation not through rhetoric or a revolutionary business model but by absolute adherence to fundamental business principles. A glimpse at the business proposition in front of ATS Medical in 2002 makes the purpose behind the differentiation apparent:

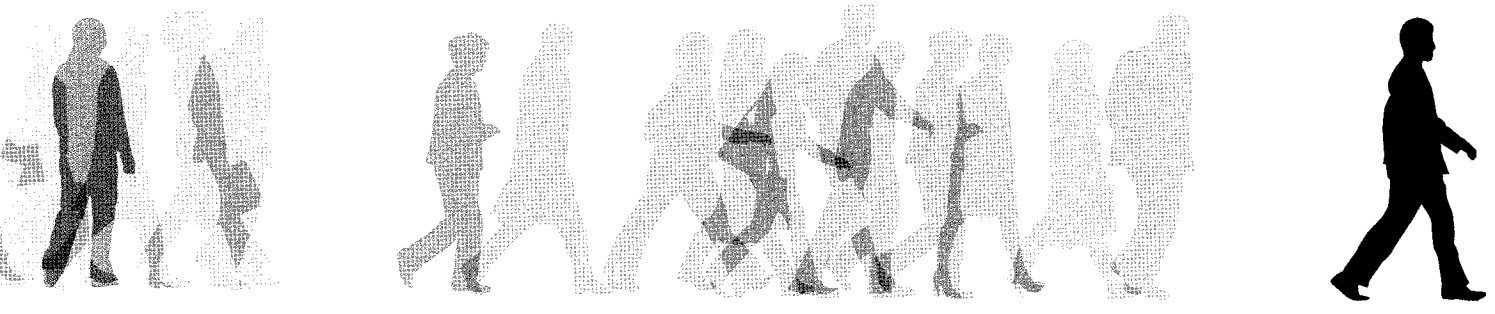
Competitive Gap. Competitors in traditional, mature surgeon-directed markets had stopped investing in front-line innovation in the space.

Differentiated Product. The ATS Open Pivot® mechanical heart valve provided a fundamentally unique performance advantage.

Global Healthcare Shift. Healthcare accessibility and resources, particularly in developing countries, would increase.

Increase in Heart Disease. Based on aging trends, structural heart disease would continue to rise dramatically and globally.

Those market truths in hand, ATS Medical moved in lock step, counter to competition — and never wavered from its aim. While some questioned its strategy, this medical company knew exactly where it was going — seizing every opportunity to develop and acquire products that meet a distinctly higher performance standard, electing to invest in medicine's most promising growth platforms. With grit and passion, ATS Medical employees and their cardiac surgeon customers built a meaningfully unique foundation for steady and strong business growth. Shareholders, this is an annual report for a company moving in the right direction.



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

Form 10-K

☑ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the Fiscal Year Ended December 31, 2008

or

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the transition period from to

Commission File No. 0-18602

ATS MEDICAL, INC.

(Exact name of registrant as specified in its charter)

Minnesota	**41-1595629**
(State or other jurisdiction of incorporation or organization)	*(I.R.S. Employer Identification No.)*
3905 Annapolis Lane North Minneapolis, Minnesota	**55447**
(Address of principal executive offices)	*(Zip Code)*

Registrant's telephone number, including area code: (763) 553-7736

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Name of each exchange on which registered
Common stock, $.01 par value	NASDAQ Global Market

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☐ No ☑

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐ No ☑

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☑ No ☐

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer or a smaller reporting company. See the definitions of "large accelerated filer", "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act (Check one):

Large accelerated filer ☐ Accelerated filer ☑ Non-accelerated filer ☐ Smaller reporting company ☐
(Do not check if a smaller reporting company)

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes ☐ No ☑

The aggregate market value of voting and non-voting stock held by non-affiliates of the registrant as of June 30, 2008, was approximately $95,412,573 (based on the last sale price of such stock as reported by the NASDAQ Global Market on such date).

The number of shares outstanding of the registrant's common stock, $.01 par value per share, as of February 28, 2009, was 71,230,729 shares.

DOCUMENTS INCORPORATED BY REFERENCE

Pursuant to General Instruction G, the responses to Items 10, 11, 12, 13 and 14 of Part III of this Form 10-K are incorporated herein by reference to certain information contained in the registrant's definitive Proxy Statement for its 2009 Annual Meeting of Shareholders.

PART I

ITEM 1. BUSINESS

OVERVIEW

ATS Medical, Inc. (hereinafter the "Company," "ATS," "we," "us," or "our") is a Minnesota corporation established in 1987. Our common shares are traded on the NASDAQ Global Market under the symbol ATSI.

We develop, manufacture, and market medical devices for the treatment of structural heart disease. Our product offerings are focused on heart valve therapy and the surgical treatment of cardiac arrhythmias. Our core mission is to build a company with a diversified product portfolio focused exclusively on the cardiac surgeon. Our objective is to establish ATS products as the standard of care for patients with structural heart disease.

From our founding until 2004, 100% of our revenue was from our legacy product – a mechanical heart valve. Sales of our mechanical heart valves represented approximately 65% of our revenue in 2008, compared to 72% and 82% of revenue in 2007 and 2006, respectively. Beginning in 2004, we began to execute a diversification strategy and since have added several product lines through distribution agreements or acquisitions. The most significant of these are:

- **Surgical Treatment of Cardiac Arrythmias.** In 2004 we entered into a distribution agreement with CryoCath Technologies, Inc. ("CryoCath") to distribute a set of products for the surgical treatment of atrial fibrillation. In 2007, we acquired this business from CryoCath for approximately $22.0 million. We have increased revenue from these products to approximately $16.9 million or 25.7% of our revenue in 2008 compared to $4.6 million or 11.3% of our revenue in 2006.
- **Heart Valve Repair.** In 2005, we entered into a development and distribution agreement with Genesee BioMedical, Inc. ("GBI"), under which we co-developed a novel line of mitral valve repair rings and bands. We have increased revenue from these products to approximately $3.2 million in 2008 from $1.1 million in 2006.
- **Tissue Heart Valves.** In 2006, we acquired 3F Therapeutics, Inc. ("3F Therapeutics" or "3F"), which had developed a line of tissue heart valves based on a unique tubular design. U.S. Food and Drug Administration ("FDA") pre-market approval of our first generation tissue valve was received in October 2008. Three platforms for deployment, including a minimally invasive sutureless platform, are in development. Tissue heart valve revenues, primarily from our initial limited commercialization efforts outside the United States, totaled approximately $1.5 million in 2008 and $0.5 million in 2007.

The marketing and sales of these new non-mechanical valve products leverage our sales and marketing infrastructure and broaden our relationships with cardiac surgeons. Sales from these and other new products have grown over the last five years from no revenue in 2004 to 35% of our total revenue in 2008.

Net sales by product group for 2008, 2007 and 2006 are discussed in Item 7 of this Form 10-K.

BUSINESS STRATEGY

The key components of our business strategy to create a profitable, diversified, cardiac surgery-focused company include:

- Increase market share of all our core products, including the ATS Open Pivot® Heart Valve, ATS CryoMaze™ Surgical Ablation products, ATS Simulus® Flexible annuloplasty repair rings and bands and the ATS 3f® Aortic Bioprosthesis tissue heart valve.
- Develop and introduce heart valve therapy and surgical ablation products that enable less invasive surgery without compromising outcomes compared to traditional therapies.
- Broaden our relationships with cardiac surgeons by selectively adding new medical devices to our product portfolio.
- Leverage our investments in our marketing and sales infrastructure.

OUR MARKETS AND PRODUCTS

Heart Valve Therapy

Heart valve therapy revenue consists of prosthetic heart valves (both mechanical and tissue heart valves), heart valve repair products and allograft tissue valves, which we discontinued selling at the end of 2007. These products primarily relate to the repair or replacement of the aortic or mitral heart valves. For 2008, heart valve therapy revenue was $47.6 million, or 72% of revenue, compared to $38.6 million, or 78% of revenue, in 2007 and $35.3 million, or 87% of revenue, in 2006. Using data from Millennium Research Group 2008, we estimate that the current total worldwide heart valve therapy market approximates $1.2 billion.

Prosthetic Heart Valve Market

Overview

There are two types of replacement heart valves: tissue and mechanical. Mechanical valves are made from highly durable materials such as metals and pyrolytic carbon with implant longevity well in excess of any patient's lifetime. Tissue valves are made primarily from animal or cadaver tissue. Tissue valves have a finite durability and over time may experience structural valve deterioration requiring a re-operation to replace the failing valve. Tissue valves are typically prescribed for patients less able to tolerate anti-coagulants, those who have a life expectancy less than the projected longevity of tissue valves, or women in their childbearing years.

Cardiac surgeons choose a valve through consideration of valve selection criteria and a patient's life expectancy, medical conditions, and lifestyle preferences. Besides durability, a valve's design and materials determine its thrombogenicity, which is the tendency to contribute to the formation of thrombus or blood clots. Thrombus can impair the performance of a valve. If the thrombus detaches and begins to move through the bloodstream (embolus), it may create an arterial blockage leading to stroke or infarction. Mechanical valve recipients must take anticoagulants to reduce and control thrombogenicity, while tissue valves do not usually require anticoagulant therapy. Hemodynamics, the measure of how efficiently blood flows through a prosthetic valve, is an important selection criteria. Blood must flow easily through the valve with minimal pressure required to open the valve leaflets and limited backflow of blood when the leaflets close. The valve should exert minimal force on the blood so that damage to fragile blood cells is limited. Other factors that are important in a surgeon's choice of a prosthetic valve are the ease of implantation, patient quality of life and the physician's familiarity with and confidence in the valve.

In addition to cardiac surgeons, administrators or business managers at hospitals and clinics have become increasingly influential in the purchase decision-making process in recent years. The increasing emphasis on medical cost containment in most world markets has elevated the decision-making power of the administrator. The administrator tends to focus on cost-effectiveness of the prosthesis compared to alternatives and, in some markets, primarily on the cost of the valve.

We estimate that the worldwide market for prosthetic heart valves is $1.1 billion and in aggregate is projected to grow at 2-3% per year, using data from Millennium Research Group 2008. Over time, the mix between mechanical and tissue prosthesis has varied significantly. We also estimate that the current prosthetic heart valve market consists of a worldwide mechanical heart valve market of $313 million declining at about 1 to 2% per year, and a worldwide tissue heart valve market of $770 million growing at 5% per year.

Our Mechanical Heart Valve Products

Our ATS Open Pivot Heart Valve was designed to improve upon existing mechanical heart valves by combining a proprietary open pivot design and other innovative features with the widely accepted biocompatibility and durability of pyrolytic carbon.

The major design features of the ATS Open Pivot Heart Valve include:

- Open pivot areas are exposed to the washing action of flowing blood with each cardiac cycle
- A thin but durable pyrolytic carbon orifice surrounded by a titanium strengthening band
- Low profile design
- Multiple sewing cuff options
- Bileaflet valve design
- Enhanced radiopacity

The ATS Open Pivot Heart Valve provides the following advantages over other currently available mechanical heart valves:

- Open pivot washing contributes to low thromboembolic complications
- Improved patient quality of life through lower noise levels
- Improved hemodynamic efficiencies
- Ease of implantation and valve rotation
- Improved follow-up diagnostic capability

Strategically, we have a development project called "ForceField" which utilizes electrical fields present at the time a valve (or other device) is introduced into the blood stream to create a biocompatible interface between the valve and the patient's blood. We believe that by replicating the charge of human endothelium, the valve will look natural to blood as it passes through the valve thus inhibiting platelet aggregation that may later become activated and lead to embolism or blood clots. We have performed several preclinical tests of this technology and are currently evaluating the form the commercial product would take and our clinical strategy. Ultimately, if the ForceField technology is successful, we would have the only mechanical valve that does not require concomitant anti-coagulation therapy.

CarboMedics, Inc. ("CarboMedics," f/k/a Sulzer CarboMedics) developed the basic design from which the ATS Open Pivot Heart Valve evolved. In September 1990 we entered into a license agreement with CarboMedics under which we eventually held an exclusive, royalty-free, worldwide license to CarboMedic's open pivot, bileaflet mechanical heart valve design. After making some design changes in the valve, we finalized the design of the ATS Open Pivot Heart Valve and filed and received our own U.S. patent covering the design of the ATS Open Pivot Heart Valve. The design modifications and the resulting U.S. patent covering the new design are the exclusive property of ATS.

In connection with the execution of the license agreement, we were also required to enter into a long-term supply agreement with CarboMedics in September 1990 under which we were obligated to purchase pyrolytic carbon components for the ATS Open Pivot Heart Valve from CarboMedics. In December 1999, we entered into a carbon technology agreement with CarboMedics under which we obtained an exclusive, worldwide right and license to use CarboMedics' pyrolytic carbon technology to manufacture components for the ATS Open Pivot Heart Valve. Under the agreement, CarboMedics also assisted us in establishing our own pyrolytic carbon component production facility in Minneapolis, Minnesota. In January 2007, CarboMedics served a complaint on us, seeking to enforce certain contractual purchase obligations and monetary damages under the long term supply agreement. We ultimately settled this litigation in December 2008 for $7.5 million. This litigation is described in this Form 10-K under Part I, Item 3. "Legal Proceedings."

Our Tissue Heart Valve Products

In 2006, ATS Medical acquired 3F Therapeutics, a medical device company based in Lake Forest, California. 3F was an early stage medical device company at the forefront of the emerging field of minimally invasive open- and closed-chest tissue valve replacement. We view the acquisition of 3F as a major step in executing our long-standing vision of obtaining a leadership position in the major segments of the cardiac surgery market.

Our first generation tissue valve product, the ATS 3f® Aortic Bioprosthesis, is a biological replacement aortic heart valve that has demonstrated characteristics that compare favorably with both mechanical and biological valves presently in the market. We received FDA approval to market this product in October 2008. The ATS 3f Aortic Bioprosthesis received the CE Mark in 2004 and has been available for commercial release in Europe and other foreign countries.

The major design features of the ATS 3f Aortic Bioprosthesis include:

- Tubular valve design, which mimics a native aortic valve in form and function
- Stentless tissue valve design
- Pericardial tissue

The ATS 3f Aortic Bioprosthesis provides the following advantages over other currently available tissue valves:

- Low pressure gradients
- Large effective orifice areas
- Maintains continuity between the annulus and the sinotubular junction
- Preserves the aortic sinuses
- Restores physiologic flow
- Restores native valve stress distribution
- No long-term anticoagulation required

We believe that substantial growth in the future within the heart valve industry will be the result of the introduction of minimally invasive and off-pump products. To address this future demand, we are currently developing various minimally invasive and off-pump aortic valve concepts.

Our first product in this arena is the sutureless ATS 3f Enable® Aortic Bioprosthesis, which is intended to reduce surgical cross-clamp and cardio-pulmonary bypass time. The Enable Aortic Heart Valve is identical to the ATS 3f Aortic Bioprosthesis but it is mounted on a nitinol self-expanding frame. The Enable valve is designed to eliminate the traditional suturing required to replace a patient's diseased aortic heart valve. If suturing can be eliminated from the procedure, surgeons can potentially reduce procedure time and offer less invasive options for the treatment of aortic valve disease. In addition, the elimination of suturing offers the potential to significantly improve valve related hemodynamics by allowing the surgeon to provide a replacement valve of a size larger than what is traditionally possible with conventionally sutured heart valves. The Enable valve is presently in clinical studies outside the United States. To date, over 115 patients have been enrolled in the valve replacement study with the Enable Aortic Bioprosthesis at nine investigative sites in Europe within both the feasibility and pivotal clinical trial phases. We currently anticipate receiving regulatory approval for this valve in Europe in 2009.

We are also developing a closed-chest aortic valve replacement technology and product using technology and intellectual property, some of which is shared co-exclusively with Edwards Lifesciences Corporation.

Prosthetic Heart Valve Market Competition

The prosthetic heart valve market is highly competitive with St. Jude Medical, Inc. as the mechanical valve market share leader and Edwards Lifesciences Corporation as the tissue valve market leader. Other companies that sell mechanical valves include Medtronic, Inc., CarboMedics, Sorin Biomedica sPa (only outside the United States), and Medical Carbon Research Institute LLC. Other companies that sell tissue valves include St. Jude Medical, Medtronic, Sorin Biomedica and CryoLife, Inc.

We are aware of several companies that are developing new prosthetic heart valves. Several companies are developing new percutaneous tissue valves designed to enable minimally invasive valve replacement. Additionally, there are companies testing new autologous (created from the patient's own tissue) valves, potentially more durable tissue valves and new bileaflet and trileaflet mechanical designs. Other companies are pursuing biocompatible coatings to be applied to mechanical valves in an effort to reduce the incidence of thromboembolic events and to treat tissue valves to forestall or eliminate calcific degeneration in these valves. Competition within the prosthetic heart valve market is based on, among other things, clinical performance record, minimizing complications, ease-of-use for the surgeon, patient comfort and quality of life and cost-effectiveness.

We believe that the most important factors in a heart surgeon's selection of a particular prosthetic valve are the perceived benefits of the valve and the heart surgeon's confidence in the valve design. As a result, valves that have developed a favorable clinical performance record have a significant marketing advantage over new valves. In addition, negative publicity resulting from isolated incidents can have a significant negative effect on a valve's overall acceptance. Our success is dependent upon the surgeon's willingness to use a new prosthetic heart valve as well as the future clinical performance of the ATS Open Pivot Heart Valve and the ATS 3f tissue heart valves compared with the more established competition.

Heart Valve Repair Market

Overview

Depending on the type and severity of a patient's heart valve disease, it may be preferable to repair their damaged valve as opposed to complete removal and replacement with either a mechanical or tissue heart valve. We

estimate the worldwide market for heart valve repair is at $151 million and growing approximately 6% per year, using data from Millennium Research Group 2008.

Our Heart Valve Repair Products

We commenced development and manufacturing of a line of cardiac surgical products in 2005 pursuant to our exclusive worldwide development, supply and distribution agreement with GBI. Our partnership with GBI provides us with access to a portfolio of patents, intellectual property and important manufacturing and product development experience specific to heart valve repair and the related tools and accessories for entry into this segment of the heart valve therapy market.

In 2006, we began to market and sell the first of these products, the ATS Simulus® Flexible annuloplasty repair rings and bands. This is a fully flexible ring that conforms to a patient's unique anatomy. In 2007, we received FDA clearance for the ATS Simulus® Semi-Rigid Annuloplasty Ring and our ATS Simulus® Adjustable repair rings. The semi-rigid ring features a unique Flex-Zone™ anterior segment, which respects the natural motion of the mitral annulus and its proximity to the aortic valve, allowing for a more physiologic valve repair. The adjustable ring incorporates many of the same features of the flexible rings and bands while allowing the surgeon to precisely accommodate individual patient anatomies by adjusting the positioning and shape of the ring after implantation.

The major design features of the ATS Simulus annuloplasty rings include:

- Generous suture target area
- Semi-rigid ring employs unique Flex-zone flexible anterior segment with semi-rigid posterior segment
- Adjustable flexible ring can be adjusted symmetrically or asymmetrically after implantation

The ATS Simulus annuloplasty rings provide the following advantages over other currently available annuloplasty rings:

- Ease of suture placement in traditional open chest repair procedures
- Readily accommodates robotic or minimally invasive surgical approaches
- Semi-rigid ring accommodates anterior annular movement while allowing for posterior annular remodeling
- Adjustable ring allows precise matching with individual patient anatomy

Heart Valve Repair Market Competition

Advancements are being made in surgical procedures such as mitral valve reconstruction, whereby the natural mitral valve is repaired, delaying the need for a replacement valve. Developments include continued expansion of the available repair rings and bands to fit physician needs and specific patient anatomies and to enable less invasive surgery. The heart valve repair market is very competitive. Edwards Lifesciences is the market leader. Medtronic, St Jude Medical and Sorin Biomedical also participate in the heart valve repair market.

Surgical Cardiac Ablation Market

Overview

Surgical treatment of atrial fibrillation products consist of tools used to create lesions on cardiac tissue to inhibit abnormal electrical impulses in the upper chambers of the heart. Atrial fibrillation ("AF") is the most common type of irregular heartbeat. It is found in about three million Americans and the incidence increases with age. When a person has AF, the electrical impulses that control the natural heartbeat travel erratically. The result is a very rapid and disorganized atrial heartbeat. Because the atria are beating rapidly and irregularly, blood does not flow through the atria as quickly or efficiently. The inefficient beating can cause clots to form. If a clot is pumped out of the heart, it can travel to the brain, resulting in a stroke. The likelihood of a stroke in people with AF is 5 to 7 times higher than in the general population. AF combined with a prolonged rapid heart rate can also lead to heart failure.

Cryoablation involves the use of extremely cold temperatures to stop electrical conductivity in certain areas of the heart while leaving underlying connective tissues largely unaffected. Additionally, by placing lines of ablation in a specific anatomic pattern, the surgeon can direct the path of electrical impulses to restore sinus conduction.

Historically, the ablation pattern that has the greatest success in restoring sinus rhythm is the original cut-and-sew Maze procedure established by Dr. James L. Cox. The Maze procedure has demonstrated freedom from AF with over 15 years of follow-up data. Cryoablation allows surgeons to perform the Maze procedure with a less invasive technique.

We estimate the market for the surgical cardiac ablation at $130 million and growing at approximately 19% per year, using data from Millennium Research Group 2008.

Our Surgical Cryotherapy Products

We market and sell surgical cryoablation products for the treatment of cardiac arrhythmias acquired through our 2007 acquisition of the surgical cryoablation business of CryoCath.

We started marketing and selling this technology in the United States in the first quarter of 2005 and in markets outside of the United States in the second quarter of 2005 under a November 2004 global partnership agreement with CryoCath. Pursuant to this partnership, we were granted co-promotion rights in the United States, earning an agency commission on sales to accounts as specified in the partnership agreement, and distribution rights in the rest of the world. This partnership agreement was in effect until our acquisition of CryoCath's surgical cryoablation business in June 2007.

We currently market and sell several surgical cryotherapy products, including the ATS CryoMaze™ Surgical Ablation Probe (7 and 10 cm sizes), the ATS CryoMaze and FrostByte™ Surgical Ablation Clamps and the ATS CryoMaze Surgical Ablation Console. Most of our cryotherapy product revenue is derived from probes, which are single-use devices used for freezing tissue in seconds and which are very malleable to conform to an individual's anatomy. To date, our cryotherapy product revenues have been primarily derived from open chest surgical procedures performed concomitantly with other cardiac surgery procedures.

The major design features of the ATS CryoMaze products include:

- The ablation probe is malleable to conform to the shape of the tissue.
- The probes feature a sleeve to adjust the lesion length.
- Argon-based cryoablation freezes rapidly and can reach temperatures as low as -160C.
- The size and malleability of the probe allow it to be easily used in minimally invasive access sites and robotic manipulation.

Cryotherapy provides the following advantages over the more prevalent heat-based therapies:

- Cryoablation adheres to the heart tissue during therapy, keeping the device in place.
- Cryoablation does not produce thrombus.
- Cryoablation preserves the integrity of the heart's collagen matrix.
- Cryoablation can safely create all of the lesion lines of the Maze procedure.

During 2009, we plan to continue to launch new products and protocols, which will provide us with an entrance into the market for stand-alone surgical treatment of AF.

Advancements in the market for surgical ablation include tools to enable safer, quicker, and more effective lesions creation in cardiac tissue. The market today consists primarily of AF treatment in conjunction with or concomitant to another cardiac surgery procedure and done with an open chest. We are aware of several companies that are developing new ablation tools. The majority of these tools utilize heat-based energy and will therefore not be able to safely complete the Maze lesion set. There has been a recent trend among cardiac surgeons to hold surgical ablation technologies to a higher level of scrutiny with advanced long-term monitoring to ensure freedom from AF. We believe these new tools will be held to this new standard of scrutiny.

Significant efforts are currently being developed to enable a sole therapy solution consisting of a full Maze lesion set that can be achieved with a closed chest with port access on a beating heart.

Surgical Cardiac Ablation Market Competition

Competition in the surgical AF market consists primarily of heat-based energy sources from AtriCure, Inc. and Medtronic. ATS cryoablation products hold a third-place position in the market, with approximately 13% of the worldwide market. Other companies that produce AF ablation technologies include St Jude Medical and Estech.

MARKETING, SALES AND DISTRIBUTION

Overview

A key component of our business strategy is to leverage the investments we have made in our marketing, sales and distribution resources through higher sales of new products in addition to increased sales of our ATS Open Pivot Heart Valve. We have been steadily building both our domestic and international sales and marketing infrastructure. Because sales prices in the United States exceed sales prices in most other markets, we believe our future success will, in large measure, depend on achieving increased market share and leveraging our sales force through the introduction of new products in the United States. Our U.S. sales as a percent of overall sales have increased from 4% in 2000 to 38% of overall sales in 2008. See Note 14 of "Notes to Consolidated Financial Statements" in Item 8 of this Form 10-K for more information regarding our sales to customers.

U.S. Marketing and Sales

As of December 31, 2008, our sales organization in the United States consists of a Vice President of Sales and three area directors managing 28 sales territories. Our representation within these territories consists of both direct sales representatives and independent agents. We focus our sales and marketing efforts on increasing awareness of our products in the approximately 1,000 U.S. open heart centers.

International Marketing, Sales and Distribution

We have direct sales organizations in France (since 2003), Germany (since 2005), the United Kingdom (since 2006), Belgium and the Netherlands (since 2007) and Switzerland (also since 2007) as well as direct marketing organizations in China (since 2004) and India (since 2005). For our European direct selling operations, we maintain consignment inventories at in-country hospitals. During 2008, we established an administrative and European headquarters office in Belgium, which we will utilize as a European support center for our current and future direct selling operations in Europe. The Belgian office will eventually replace our administrative office in Austria.

We sell through independent distribution networks in other markets throughout the world. We believe that our distribution partners have provided a rapid and cost-efficient means of increasing market penetration and commercial acceptance of our products in key international markets. We have been able to attract experienced medical device sales organizations and people familiar with local markets and customs to serve as our representatives. Each of our independent distributors has the exclusive right to sell certain ATS products within a defined territory. These distributors, in some instances, also market other medical products, although they have agreed not to sell products which directly compete with our products. Under most of the distributor agreements, we may, at our option, terminate the agreement upon the departure of certain key employees of the distributor, if we experience a change in control or if key performance criteria, including sales quotas, are not met. Our sales, marketing and customer service personnel provide professional sales, marketing and promotional support to our independent distributors. We sell our products to international distributors F.O.B. Minneapolis, Minnesota, denominated in U.S. dollars. See Note 15 of "Notes to Consolidated Financial Statements" in Item 8 of this Form 10-K for information on our net sales by geographic region. Net sales both inside and outside the United States are also discussed in Item 7 of this Form 10-K.

Medical Device Industry Competition

Competition in the medical device industry is intense and is characterized by extensive research efforts and rapid technological progress. We believe the primary competitive factors include quality, technical capability, innovation, distribution capabilities and price. Many of our competitors in the heart valve market have greater resources, more widely-accepted products, greater technical capabilities and stronger name recognition than we do. Our competitive capability is affected by our ability to support our products, ensure regulatory compliance for our products, protect the proprietary technology of our products and their manufacturing processes, effectively market our products, and maintain and establish distribution relationships. In order to maintain these capabilities, ATS must continuously attract and retain skilled and dedicated employees and develop and maintain excellent relationships with physicians and suppliers.

Cardiac surgery products are currently being marketed to hospitals at prices that vary significantly from country to country due to market conditions, currency valuations, distributor mark-ups and government regulations. In many markets, government agencies are imposing or proposing price controls or restrictions on medical products. We work with our independent distributors to price our products in each market to meet these limitations. In addition, our primary competitors have the ability, due to economies of scale, to manufacture their valves at a

lower cost than we can currently manufacture the ATS Open Pivot and ATS 3f heart valves. The market leader has occasionally used price as a method to compete in several markets.

MANUFACTURING AND SUPPLY

Our mechanical heart valves are manufactured in ISO 13485:2003 certified facilities. We have two mechanical heart valve production facilities in close proximity in Plymouth, a suburb of Minneapolis, Minnesota, for our manufacturing activities. Our pyrolytic carbon mechanical valve components are manufactured in one facility. In the other facility, we assemble our mechanical valves in controlled clean room environments. Most of the materials we purchase for our products are supplied by a limited number of vendors. We are currently operating two manufacturing shifts at our valve assembly facility. At our pyrolytic carbon facility, most processes are operating one manufacturing shift while some operate up to three manufacturing shifts. We have been ramping up our pyrolytic carbon manufacturing facility over the past three years under an initiative to become a low-cost, self-supplier of the critical carbon components necessary to manufacture our mechanical heart valves. While this initiative has resulted in ramp-up and start-up expenses, low initial production yields, and higher-than-normal scrap costs, our gross margins have improved consistently in 2006, 2007 and 2008.

The production of surgical cryotherapy products are also manufactured in a controlled clean room environment in an ISO 13485:2003 certified facility in Plymouth. The Plymouth manufacturing facility has also been approved by international regulatory agencies to manufacture surgical cryotherapy products.

Our ATS 3f tissue heart valves are manufactured in a controlled clean room environment in an ISO 13485 certified facility in Lake Forest, California. Most of the materials used to construct the valve are supplied by a limited number of qualified vendors. We currently operate one manufacturing shift at the Lake Forest facility. We have been ramping up our tissue valve production in preparation for a market launch of the ATS 3f Aortic Bioprosthesis, approved for commercialization in the U.S. by the FDA in October 2008. In addition, we also manufacture significant quantities of our next generation tissue valves for use in pre-clinical and clinical testing. These initiatives have resulted in low production yields and inefficiencies. As our tissue valve volume increases, we expect our yields will increase and our process will become more efficient.

For our heart valve repair and surgical tools and accessories franchises, we do not manufacture or produce the products we sell, and we only service some of these products.

We believe our properties are adequate to serve our business operations for the foreseeable future. We warehouse our finished products at our Plymouth, Minnesota facilities, our sales offices in France and Germany and at third party warehouses in The Netherlands and Belgium.

We maintain a comprehensive quality assurance and quality control program, which includes documentation of all material specifications, operating procedures, equipment maintenance and quality control test methods. Our documentation systems comply with the FDA Quality System Regulation ("QSR") and ISO 13485 requirements.

RESEARCH AND DEVELOPMENT

Our research and development ("R & D") activities include developing new products, improving our current products, and the clinical and regulatory activities to support our products. These activities are carried out in our Plymouth and Lake Forest facilities, although we work with physicians, research hospitals and universities around the world. None of this work is funded by customers or other outside institutions. The development process for any new product can range from several months to several years, primarily depending on the regulatory pathway required for approval. R & D expenses totaled $8.2 million in 2008, $7.5 million in 2007 (net of $3.5 million of in-process research and development related to the CryoCath asset acquisition) and $3.4 million in 2006 (net of $14.4 million of in-process research and development related to the 3F acquisition). At December 31, 2008 our R & D headcount totaled 12 employees.

FINANCIAL INFORMATION ABOUT SEGMENTS

Since our inception, we have operated in the single industry segment of developing, manufacturing and marketing medical devices.

SEASONALITY

Our sales and operating results have varied and are expected to continue to vary significantly from quarter to quarter as a result of seasonal patterns. We expect that our business will be seasonal, with the third quarter of each

year typically having the lowest sales, due to vacation and time-off periods in our international markets, especially Europe.

PATENTS AND PROPRIETARY TECHNOLOGY

Our policy is to protect our proprietary position by securing U.S. and foreign patents that cover the technology, inventions and improvements important to our business. The original patent obtained by CarboMedics under which our valve was developed expired in 2004. We subsequently made modifications to the basic design. We obtained a U.S. patent covering the improvements to the ATS Open Pivot Heart Valve in October 1994. This patent expires in 2011. We have also obtained issued patents in Japan, Belgium, France, Germany, the Netherlands, Spain, Switzerland and the United Kingdom relating to these improvements. We cannot be certain that any patents will not be challenged or circumvented by competitors.

Our ATS 3f tissue valve platforms are supported by an extensive intellectual property portfolio. We own 82 issued U.S. and foreign patents and 44 U.S. and foreign patent applications that protect our core technology in the tissue valve market. These patents expire on various dates ranging from 2011 to 2026, with 10 of the patents expiring in 2013 and 63 of the patents expiring in the period from 2021 to 2026. We also hold co-exclusive rights to certain intellectual property, including the "Anderson Patents" for minimally invasive valve deployment.

Our ATS cryoablation platforms for treatment of AF are also supported by a licensed intellectual property portfolio comprising 16 issued U.S. and foreign patents and 17 U.S. and foreign patent applications that protect our core technology in the market. These patents expire on various dates ranging from September 2016 to June 2023.

The effect of these patents is to give us the ability to practice certain technologies and the right to preclude third parties from making, using, selling or offering to sell products which infringe upon the claims made in each of these patents within the jurisdiction of the country where the patent is issued. We believe the claims covered by the issued patents are broad and cover many unique attributes of the products we plan for commercialization and the processes we use to fabricate these products.

We also rely on trade secrets and technical know-how in the manufacture and marketing of both our mechanical and tissue heart valves. We typically require our employees, consultants and contractors to execute confidentiality agreements with respect to our proprietary information.

We claim trademark protection on ATS Medical™, ATS Open Pivot®, ATS 3f® Aortic Bioprosthesis, ATS 3f Enable® Aortic Bioprosthesis and ATS CryoMaze™ and either claim or have applied for trademark or tradename protection on most of our product offering names. U.S. trademark and service mark registrations are generally for a term of 10 years, renewable every 10 years so long as the trademark is used in the regular course of trade. We have also been granted rights by certain partners to use their trademark(s) in our sales and marketing activities of their products and services.

GOVERNMENT REGULATION

United States

Numerous governmental authorities, principally the FDA and corresponding state regulatory agencies, strictly regulate our products and research and development activities. The Federal Food, Drug, and Cosmetic Act, the regulations promulgated under this act, and other federal and state statutes and regulations, govern, among other things, the pre-clinical and clinical testing, design, manufacture, safety, efficacy, labeling, storage, record keeping, advertising and promotion of medical devices. The FDA classifies our ATS heart valves as a Class III device, which is subject to the highest level of controls.

Generally, before we can market a new medical device, we must obtain marketing clearance through a 510(k) pre-market notification, approval of a pre-market approval application ("PMA") or approval of product development protocol ("PDP"). A PMA or PDP application must be submitted if a proposed device does not qualify for a 510(k) pre-market clearance procedure. It generally takes several months from the date of a 510(k) submission to obtain clearance, but it may take longer, particularly if a clinical trial is required. The PMA and PDP process can be expensive, uncertain, require detailed and comprehensive data and generally take significantly longer than the 510(k) process.

If human clinical trials of a device are required, either for a 510(k) submission or a PMA application, the sponsor of the trial, usually the manufacturer or the distributor of the device, must file an investigational device exemption ("IDE") application prior to commencing human clinical trials. The IDE application must be supported by data,

typically including the results of animal and/or laboratory testing. If the IDE application is approved by the FDA and one or more appropriate institutional review boards ("IRBs"), human clinical trials may begin at a specific number of investigational sites with a specific number of patients, as approved by the FDA. If the device presents a non-significant risk to the patient, a sponsor may begin the clinical trial after obtaining approval for the study by the IRBs without separate approval from the FDA. Submission of an IDE does not give assurance that the FDA will approve the IDE and, if it is approved, there can be no assurance the FDA will determine that the data derived from the studies support the safety and efficacy of the device or warrant the continuation of clinical trials. An IDE supplement must be submitted to and approved by the FDA before a sponsor or investigator may make a change to the investigational plan that may affect its scientific soundness, study indication or the rights, safety or welfare of human subjects.

We are also subject to the FDA QSR concerning manufacturing processes and reporting obligations. These regulations require that manufacturing steps be performed according to FDA standards and in accordance with documentation, control and testing standards. The FDA monitors compliance with its good manufacturing practices regulations by conducting periodic inspections. We are required to provide information to the FDA on adverse incidents as well as maintain a detailed record keeping system in accordance with FDA guidelines.

The advertising of our products is also subject to both FDA and U.S. Federal Trade Commission regulations. In addition, we are subject to the "fraud and abuse" laws and regulations promulgated by the U.S. Department of Health and Human Services and the U.S. Health Care Finance Administration if we sell ATS products to Medicare or Medicaid patients. Under these regulations, it is a criminal offense (subject to certain exceptions) to knowingly or willfully offer, pay, solicit or receive remuneration in order to induce business for which reimbursement may be provided under a federal healthcare program.

If the FDA believes we are not in compliance with law, it can institute proceedings to detain or seize products, issue a recall, enjoin future violations and assess civil and criminal penalties against us and our officers and employees. If we fail to comply with these regulatory requirements, our business, financial condition and operating results could be harmed. In addition, regulations regarding the manufacture and sale of our products are subject to change. We cannot predict the effect, if any, that these changes might have on our business, financial condition and operating results.

International

In order to market our products in European and other foreign countries, we must obtain required regulatory approvals and comply with extensive regulations governing product safety, quality and manufacturing processes. These regulations vary significantly from country to country and with respect to the nature of the particular medical device. The time required to obtain these foreign approvals to market our products may be longer or shorter than in the United States, and requirements for licensing may differ from FDA requirements.

In order to market our products in the 27 member countries of the European Union, we are required to comply with the medical devices directive and obtain CE mark certification. The CE mark denotes conformity with European standards for safety and allows certified devices to be sold in all European Union countries.

THIRD-PARTY REIMBURSEMENT

In the United States, healthcare providers that purchase medical devices, including our products, generally rely on third-party payers, including Medicare, Medicaid, private health insurance carriers and managed care organizations, to reimburse all or part of the cost and fees associated with the procedures performed using these devices. The commercial success of our products, will depend on the ability of healthcare providers to obtain adequate reimbursement from third-party payers for the surgical procedures in which our products are used. Third-party payers are increasingly challenging the coverage and pricing of medical products and procedures. Even if a procedure is eligible for reimbursement, the level of reimbursement may not be adequate. In addition, third-party payers may deny reimbursement if they determine that the device used in the treatment was not cost-effective or was used for a non-approved indication.

In international markets, market acceptance of our products also depends in part upon the availability of reimbursement from healthcare payment systems. Reimbursement and healthcare payment systems in international markets vary significantly by country. The main types of healthcare payment systems in international markets are government-sponsored healthcare and private insurance. Countries with government-sponsored healthcare, such as the United Kingdom, have a centralized, nationalized healthcare system. New devices are brought into the system through negotiations between departments at individual hospitals at the time of budgeting. In many of the countries where we market our products, the government sets an upper limit of

reimbursement for various valve types. In most foreign countries, there are also private insurance systems that may offer payments for alternative devices.

We have pursued reimbursement for our products internationally through our independent distributors. While the healthcare financing issues in these countries are substantial, our distributors have been able to sell our products to private clinics and nationalized hospitals in each of these countries.

All third-party reimbursement programs, whether government-funded or insured commercially, inside the United States or outside, are developing increasingly sophisticated methods of controlling health care costs through prospective reimbursement and capitation programs, group purchasing, redesign of benefits, second opinions required prior to major surgery, careful review of bills, encouragement of healthier lifestyles and exploration of more cost-effective methods of delivering healthcare. These types of programs can potentially limit the amount that healthcare providers may be willing to pay for medical devices.

PRODUCT LIABILITY AND INSURANCE

Cardiovascular device companies are subject to an inherent risk of product liability and other liability claims in the event that the use of their products results in personal injury. Heart valves are life-sustaining devices, and the failure of any heart valve usually results in the death of the patient. We have not received any reports of mechanical failure of our valves implanted to date. Any product liability claim could subject us to costly litigation, damages and adverse publicity.

We currently maintain a product liability insurance policy with an annual coverage limit of $25 million in the aggregate. We are financially responsible for any uninsured claims or claims which exceed the insurance policy limits. Product liability insurance is expensive for mechanical valves. If insurance becomes completely unavailable, we must either develop a self-insurance program or sell without insurance. The development of a self-insurance program would require significant capital.

EMPLOYEES

As of December 31, 2008, we employed 301 full-time and part-time employees worldwide. Our employees are vital to our success. We believe we have been successful in attracting and retaining qualified personnel. We believe our employee relations are good.

EXECUTIVE OFFICERS OF THE REGISTRANT

Our executive officers are as follows:

Name	Age	Position
Michael D. Dale	49	Chairman, Chief Executive Officer and President
Michael R. Kramer	33	Chief Financial Officer
Astrid M. Berthe	45	Vice President, Regulatory Affairs and Quality Assurance
Thaddeus Coffindaffer	47	Vice President, Sales
David R. Elizondo	41	Vice President, Research, Development and Clinical Affairs
Craig A. Swandal	48	Vice President, Operations

Michael D. Dale has served as our Chairman of the Board since April 2003 and as our Chief Executive Officer and President since October 2002. From 1998 to 2002, Mr. Dale was Vice President of Worldwide Sales and Marketing at Endocardial Solutions, Inc., a company that developed and marketed an advanced cardiac mapping and catheter navigation system for the diagnosis and treatment of cardiac arrhythmias. From 1996 to 1998, Mr. Dale was Vice President of Global Sales for Cyberonics, Inc., a neuromodulation medical device company, and additionally was Managing Director of Cyberonics Europe S.A. From 1988 to 1996, Mr. Dale served in several capacities at cardiovascular medical device manufacturer and marketer St. Jude Medical, most recently as the Business Unit Director for St. Jude Medical Europe. Mr. Dale began his medical device career with American Edwards Laboratories where he sold cardiovascular devices from 1983 to 1988. Mr. Dale is on the board of directors of Neuronetics, a world leader in Transcranial Magnetic Stimulation (TMS) Therapy, which involves the use of MRI-strength magnetic fields to stimulate nerve cells in the brain, for the treatment of patients suffering from depression. Mr. Dale also serves on the Advanced Medical Technology Association (AdvaMed) Board of Directors.

Michael R. Kramer has served as our Chief Financial Officer since August 2007. Mr. Kramer joined ATS as our Senior Director of Finance in September 2006 and was appointed Acting Chief Financial Officer in February

2007. During 2006, prior to joining ATS, Mr. Kramer was engaged by ATS as an independent financial consultant. From February 2005 to May 2006, Mr. Kramer served as Controller at CABG Medical, Inc., a cardiovascular device manufacturer. During 2004, Mr. Kramer was a Corporate Finance Manager at Ecolab, Inc., a developer and marketer of products and services to the hospital, foodservice, healthcare and industrial markets. From December 1999 through July 2004, Mr. Kramer worked at Ernst & Young LLP, a global professional services firm, where he served as a manager in the assurance and advisory services practice from September 2002 until July 2004.

Astrid M. Berthe was appointed an executive officer of ATS in June 2008. Ms. Berthe joined ATS in September 2006 as a result of our acquisition of 3F. Ms. Berthe has served as both a Director and Vice President of Regulatory Affairs and Quality Assurance for 3F and ATS since 2004. Prior to 3F, Ms. Berthe served as the Director of Quality Assurance and Regulatory Compliance from April 2001 to November 2003 at Medtronic Cardiac Surgery, a business unit of Medtronic, Inc., a worldwide developer and manufacturer of medical devices and technologies. During her career, Ms. Berthe has held leadership positions in the areas of quality systems, regulatory, compliance, engineering and manufacturing operations.

Thaddeus Coffindaffer was appointed an executive officer of ATS in June 2008. Mr. Coffindaffer joined ATS in August 2003 and served as an Area Sales Director for the central and western United States until he was appointed Vice President of U.S. Sales in April 2007. Prior to joining ATS, Mr. Coffindaffer served as Western Region Sales Manager for Thoratec, a manufacturer and marketer of ventricular assist devices, from June 2000 to August 2003.

David R. Elizondo has served as our Vice President of Research and Development, since September 2006. In August 2007, Mr Elizondo also assumed the role of Vice President of Clinical Affairs. From July 2000 to August 2006, Mr. Elizondo served in several capacities at Boston Scientific Corporation, a developer of technologies and products for interventional and surgical procedures, and most recently served as the Director of New Business Development for Boston Scientific's Cardiology Division.

Craig A. Swandal has served as our Vice President, Operations since joining ATS in August 2008. Prior to joining ATS, Mr. Swandal served as Senior Vice President of Corporate Operations for Gyrus ACMI, a leader in the development and manufacture of minimally invasive surgical instruments and visualization systems, from September 2005 to August 2008. From August 2001 to September 2005, Mr. Swandal served as Vice President of Operations for Gyrus.

AVAILABLE INFORMATION

Copies of our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and amendments to those reports filed or furnished to the Securities and Exchange Commission (the "SEC") pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (the "Exchange Act") are available free of charge through our website (www.atsmedical.com) as soon as reasonably practicable after we electronically file the material with, or furnish it to, the SEC.

ITEM 1A. RISK FACTORS

Our business faces many risks. Any of the risks discussed below could have a material impact on our business, financial condition or operating results.

If our products do not achieve widespread market acceptance in the United States, our operating results will be harmed and we may not achieve profitability.

Our success will depend, in large part, on the medical community's acceptance of ATS' principal products in the United States, which is the largest revenue market in the world for medical devices. The U.S. medical community's acceptance of ATS' products will depend upon our ability to demonstrate the safety and efficacy, advantages, long-term clinical performance and cost-effectiveness of ATS' products as compared to other products. We cannot predict whether the U.S. medical community will accept ATS' products or, if accepted, the extent of its use. Negative publicity resulting from isolated incidents involving ATS' products or other products related to those we sell could have a significant adverse effect on the overall acceptance of our heart valves. If we encounter difficulties developing a market for our products in the United States, we may not be able to increase our revenue enough to achieve profitability, and our business and operating results will be seriously harmed.

We currently rely on the ATS mechanical heart valve as our primary source of revenue. If we are not successful in selling this product, our operating results will be harmed.

Since 2005 we have marketed products other than mechanical heart valves. These products represented approximately 35% of net revenues for the year ended December 31, 2008. However, there can be no assurance that these new products will decrease our dependence on sales of mechanical heart valves. Increasing revenues from new products cannot be guaranteed. Even if we were to develop additional products, regulatory approval would likely be required to sell them. Clinical testing and the approval process itself are very expensive and can take many years. Adverse rulings by regulatory authorities, product liability lawsuits, the failure to achieve widespread U.S. market acceptance, the loss of market acceptance outside of the United States, or other adverse publicity may significantly and adversely affect our sales of the ATS heart valve, and, as a result, would adversely affect our business, financial condition and operating results.

We have a history of regularly raising funds and incurring debt to fund net losses. If our current cash and investment balances are inadequate to carry us to profitability, we may need to raise equity or incur debt in the future. The current unprecedented volatility in the worldwide credit and equity markets may have an impact on our ability to obtain future financing.

In recent years, we have completed several financings to fund acquisitions and our operations. If our future operations require greater cash than our current balances, we would again be required to raise equity or issue debt. Furthermore, there may be delays in obtaining necessary governmental approvals of our products or introducing products to market or other events that may cause actual cash requirements to exceed those for which we have budgeted. In such event, we would need additional financing.

We do not know what impact the current unprecedented volatility in worldwide credit and equity markets may have on our ability to obtain future financing. Beginning in the fall of 2008, the world experienced unprecedented turmoil in equity and credit markets that has resulted in record-setting losses in the stock markets, dramatic decreases of liquidity in the credit markets, bank failures, hedge fund closures and massive market intervention by the United States and foreign governments. Because of the unprecedented nature of these market events, and because the markets remain highly volatile, we cannot predict what effect these events will have on our ability to obtain debt or equity financing in the future. If we are unable to raise sufficient capital, it will have a material adverse effect on our financial condition and our ability to remain in business.

The recent U.S. and global economic downturn could have adverse effects on our business and our Company.

The economic turmoil discussed above has also negatively impacted world economies, businesses, and markets, and could adversely impact our Company in the future. We cannot predict what effect these events will have on our sales, collectibility of receivables, debt covenants, ability to attract additional investors, and company stock price. Increased volatility in our stock price attributable to the economic downtown could negatively impact future reported operating results of the Company, including the potential for impairments to our recorded goodwill and higher stock compensation expense.

The anticipated benefits associated with our recent acquisitions may not be realized.

We completed the acquisition of 3F in 2006 and the acquisition of the surgical cryoablation business of CryoCath in 2007. We expect that these acquisitions will result in several benefits, including, among others, an expanded heart value product line in connection with the acquisition of the tissue heart valve business of 3F, an enhanced owned product portfolio and opportunity to leverage our revenues and margins under our pre-existing distribution and agent agreements in connection with the CryoCath acquisition, and cross-selling opportunities, enhanced technology, cost savings and operating efficiencies in connection with both acquisitions. However, achieving the anticipated benefits of these acquisitions is subject to a number of uncertainties, including whether 3F's development-stage products are ultimately marketable, whether we can commercialize the acquired CryoCath development project related to treatment of arrhythmias on a stand-alone minimally invasive basis, whether we are able to gain regulatory approvals to commercialize products manufactured within our own facility, whether we are able to integrate the businesses in an efficient and effective manner and general competitive factors in the marketplace. Failure to achieve the anticipated benefits of these acquisitions could result in decreases in the amount of expected revenues, increased costs and diversion of management's time and energy, and could materially impact our business, financial condition and operating results.

We may have difficulty integrating recently acquired businesses and may incur substantial costs in connection with the integration process.

Integrating the operations of the surgical cryoablation business of CryoCath into our existing business will continue to be a complex, time-consuming and expensive process. Before this acquisition, ATS and the surgical cryoablation business of CryoCath were operated independently, each with its own products, customers, employees, culture and systems. We may experience material unanticipated difficulties or expenses in connection with the integration of this acquired business into ATS due to various factors, including:

- our lack of expertise and experience in manufacturing the CryoCath products;
- costs and delays in implementing manufacturing systems and procedures in connection with the acquisition of the cryoablation business of CryoCath;

We have limited experience in integrating the operations represented by this acquisition, and it is not certain that we can successfully integrate the acquired business in a timely or efficient manner, or at all, or that any of the anticipated benefits of the acquisition will be realized. Failure to do so could have a material adverse effect on our business, financial condition and operating results.

The time and expense associated with converting the acquired cryoablation business into ATS' existing infrastructure may exceed management's expectations and limit or delay the intended benefits of the transaction. To the extent any of these events occur, the benefits of the transaction may be reduced, at least for a period of time. In addition, it is possible that unexpected transaction costs, such as taxes, fees or professional expenses, or unexpected future operating expenses, such as increased personnel costs, as well as other types of unanticipated adverse developments, could have a material adverse effect on our business, financial condition and operating results.

We use a combination of direct sales persons and independent manufacturing representatives to sell our products in the United States. If our U.S. sales strategy is not successful, we may not be able to continue our operations.

The sales approach for the sale of our products in the United States consists primarily of direct salespersons with a few independent manufacturers' representatives. We will need to continue to expend significant funds and management resources to develop and maintain this hybrid sales force. We believe that there is significant competition for sales personnel and independent manufacturing representatives with the advanced sales skills and technical knowledge we need. If we are unable to recruit, retain and motivate qualified personnel and representatives, U.S. sales of our products could be adversely affected. The loss of key salespersons or independent manufacturer's representatives could have a material adverse effect on our sales or potential sales to current customers and prospects serviced by such salespersons or representatives. Further, we cannot assure the successful expansion of our network of independent manufacturer's representatives on terms acceptable to ATS, if at all, or the successful marketing of our products by our hybrid sales force. To the extent we rely on sales through independent manufacturer's representatives, any revenues we receive will depend primarily on the efforts of these parties. We do not control the amount and timing of marketing resources that these third parties devote to our product. If our U.S. sales strategy is not successful, we may be forced to change our U.S. sales strategy. Any such change could disrupt sales in the United States. Further, any change in our U.S. sales strategy could be expensive and would likely have a material adverse impact on our operating results.

We currently depend on the marketing and sales efforts of international independent distributors.

In many countries our products are sold through independent distributors. The loss of an international distributor could seriously harm our business and operating results if a new distributor could not be found on a timely basis in the relevant geographic market. We do not control the amount and timing of marketing resources that these third party distributors devote to our product. Furthermore, to the extent we rely on sales through independent distributors, any revenues we receive will depend primarily on the efforts of these parties.

We are dependent upon sales outside the United States, which are subject to a number of risks including a drop in sales due to currency fluctuations.

In 2008, approximately 62% of our net sales were derived outside of the United States. We expect that international sales will account for a substantial majority of our revenue until our products receive wider market acceptance from U.S. customers and until we obtain pre-market approval to sell our 3F Aortic Bioprosthesis tissue heart valve or other products in the United States. Accordingly, any material decrease in foreign sales may materially and adversely affect our operating results.

We sell in U.S. dollars to our customers abroad. An increase in the value of the U.S. dollar in relation to other currencies can and has adversely affected our sales outside of the United States. Our dependence on sales outside of the United States will continue to expose us to U.S. dollar currency fluctuations for the foreseeable future.

Our future operating results could also be harmed by risks inherent in doing business in international markets, including:

- unforeseen changes in regulatory requirements and government health programs;
- weaker intellectual property rights protection in some countries;
- new export license requirements, changes in tariffs or trade restrictions;
- political and economic instability in our target markets;
- greater difficulty in collecting payments from product sales;
- lengthy/extended credit terms, and
- competitive price pressure.

We have a history of net losses. If we do not have net income in the future, we may be unable to continue our operations.

We are not currently profitable and have a very limited history of profitability. We had net losses of approximately $19.3 million for 2008, $23.0 million for 2007 and $27.7 million for 2006. As of December 31, 2008, we had an accumulated deficit of approximately $151.9 million. We expect to incur significant expenses over the next several years as we continue to devote substantial resources to the commercialization and marketing of our products both in the United States and in many foreign countries. In addition, we will not generate net income unless we are able to significantly increase revenue from U.S. sales. If we continue to sustain losses, we may not be able to continue our operations.

In addition, if the benefits of the merger with 3F and our acquisition of the surgical cryoablation business of CryoCath do not exceed the associated costs, the combined company could be adversely affected by incurring additional or even increased losses from its operations. Our ability to succeed after the merger with 3F and the acquisition of the surgical cryoablation business of CryoCath depends on making our combined operations profitable through increased revenue and reduced expenses for the combined company. If we fail to make our combined operations profitable through increased revenue and decreased expenses, it would harm our business, financial condition and operating results.

Purchase accounting treatment of the merger with 3F and acquisition of the surgical cryoablation assets of CryoCath could result in net losses for the foreseeable future.

We have accounted for the merger with 3F and purchase of the surgical cryoablation business of CryoCath using the purchase method of accounting. For the 3F acquisition, the estimated market value of shares of our common stock issued in the merger and the amount of the merger transaction costs were recorded as the cost of acquiring 3F. For the acquisition of the surgical cryoablation business of CryoCath, the purchase price recorded was equal to all cash consideration paid to CryoCath, plus the amount of transaction costs and the present value of the cash payment due to CryoCath two years from closing. In each case, the cost has been allocated to the individual assets acquired and liabilities assumed, including various identifiable intangible assets such as acquired technology, acquired trademarks and tradenames, based on their estimated fair values at the date of acquisition.

The excess of the purchase price over the fair market value of the net assets has been allocated as goodwill. The amount of the purchase price currently allocated to goodwill and the other intangible assets in connection with the acquisition of 3F is approximately $12.3 million. The amount of the purchase price currently allocated to goodwill and other intangible assets in connection with the purchase of the surgical cryoablation business of CryoCath is approximately $23.7 million. Our estimates are based upon available information and assumptions that we believe are reasonable. However, there can be no assurance that the actual useful lives will not differ significantly from our estimates. The amortization of other intangible assets could result in net losses for ATS for the foreseeable future, which could have a material adverse effect on the market value of our common stock.

The market for prosthetic heart valves is highly competitive, and a number of our competitors are larger and have more financial resources. If we do not compete effectively, our business will be harmed.

The market for prosthetic heart valves is highly competitive. We expect that competition will intensify as additional companies enter the market or modify their existing products to compete directly with us. Our primary competitor in mechanical heart valves, St. Jude Medical, Inc., currently controls approximately 50% of the worldwide market. Edwards Lifesciences PVT, Inc., our primary competitor in the tissue heart valve market, currently controls approximately 60% of the worldwide market. Many of our competitors have long-standing FDA approval for their valves and extensive clinical data demonstrating the performance of their valves. In addition, they have greater financial, manufacturing, marketing and research and development capabilities than we have. For example, many of our competitors have the ability, due to their internal carbon manufacturing facilities and economies of scale, to manufacture their heart valves at a lower cost than we can manufacture our ATS heart valve. Our competitors have used price as a method to compete in several international markets. If heart valve prices decline significantly, we might not be able to compete successfully, which would harm our business, financial condition and operating results.

Our future results will be harmed if the use of mechanical heart valves declines or if our tissue heart valves cannot be successfully marketed.

Our business could suffer if the use of mechanical heart valves declines. Historically, mechanical heart valves have accounted for over two-thirds of all heart valve replacements. Recently there has been an increase in the use of tissue valves. We estimate that mechanical heart valves are currently being used in 20% to 65% of all heart valve replacements, depending on the geographic market, down from 65% to 75% roughly ten years ago. We believe the tissue manufacturers' claims of improvements in tissue valve longevity and an increase in the average age of valve patients have contributed to the recent increase in the use of tissue valves. In addition, there can be no guarantee that we will be able to successfully market and sell our tissue heart valves or that our tissue heart valves will be approved or gain market acceptance.

Our business may be adversely affected if we are unable to maintain our strategic distribution arrangements.

In 2008, revenues from non-mechanical heart valve products increased to 35% of total revenue from none in 2004. Some of our distributed products contain performance criteria which we must attain to retain our rights under these arrangements. Additionally, these arrangements provide certain circumstances under which our rights may be terminated. If we are unable to maintain these arrangements, our business, financial condition and operating results may be adversely affected.

We ultimately may experience a delay in introducing, or may not successfully complete the development of, products that are currently under development, resulting in harm to our business.

We are in the process of developing certain products, including, but not limited to, the ATS 3f Enable Aortic Bioprosthesis tissue heart valve product and a closed-chest aortic tissue heart valve product. The Enable product is currently in the early phases of clinical trials, and the closed-chest aortic tissue heart valve product is still under development. Successfully completing the development of these products and technologies presents substantial technical, medical and engineering challenges, as well as regulatory hurdles. In 2006, ongoing clinical trial results in Europe resulted in our undertaking a review of the Enable valve cuff design. We may not successfully complete the development of these products, or these products may fail to work in the manner intended. If we are unable to successfully develop the products that are currently under development, we may suffer financial difficulties, which may have a material adverse effect on our business, financial condition and operating results.

New products or technologies developed by others could render our product obsolete.

The medical device industry is characterized by significant technological advances. Several companies are developing new prosthetic heart valves based on new or potentially improved technologies. Significant advances

are also being made in surgical procedures, which may delay the need for replacement heart valves. A new product or technology may emerge that renders the ATS heart valve noncompetitive or obsolete. This could materially harm our operating results or force us to cease doing business altogether.

We license patented technology and other proprietary rights from CarboMedics. If these agreements are breached or terminated, our right to manufacture the ATS mechanical heart valve could be terminated.

Under our carbon technology agreement with CarboMedics, we have obtained a license to use CarboMedics' pyrolytic carbon technology to manufacture components for the ATS mechanical heart valve. If this agreement is breached or terminated, we would lose our right to manufacture components for the ATS mechanical heart valve.

A delay or interruption in our manufacturing of pyrolytic carbon components could delay product delivery or force us to cease operations.

Although we anticipate that our manufacturing capacity will be sufficient to meet our current and foreseeable carbon component needs, if our inventory is exhausted and we are unable to manufacture carbon components, it is unlikely that we will be able to obtain the necessary carbon components from any other source. If we are unable to obtain these carbon components from other sources, we could be forced to reduce or cease operations.

Because we have limited manufacturing experience with some of our products, we may not realize the expected cost savings related to manufacturing our own products. In addition, we could experience production delays and significant additional costs.

Our tissue valve manufacturing efforts to date have consisted primarily of limited quantities of products for research and development, clinical trials and commercial sale outside the United States. In addition, we are continuing the ramp-up of our manufacturing capabilities in connection with the acquisition of the surgical cryoablation business of CryoCath. We cannot be certain that we will be able to manufacture commercial quantities of tissue heart valves or fully develop internal manufacturing capabilities for surgical cryoablation products in a cost-effective manner. We have limited experience manufacturing tissue heart valves and no experience manufacturing products for the surgical cryoablation business, and our inability to manufacture these products in a cost-effective manner could adversely affect our business and results of operations. In addition, in the future, as we continue to increase production, we may encounter difficulties in maintaining and expanding our manufacturing, including problems involving:

- production yields;
- quality control;
- per unit manufacturing costs;
- shortages of qualified personnel; and
- compliance with FDA and international regulations and requirements regarding good manufacturing practices.

Difficulties encountered by us in establishing or maintaining a commercial-scale manufacturing facility may limit our ability to manufacture our cryoablation products and therefore could seriously harm our business, financial condition and operating results.

Our business could be seriously harmed if third-party payers do not reimburse the costs for our products.

Our ability to successfully commercialize the ATS mechanical heart valve, our tissue heart valves, surgical cryoablation devices and other products depends on the extent to which reimbursement for the cost of our product and the related surgical procedure is available from third-party payers, such as governmental programs, private insurance plans and managed care organizations. Third-party payers are increasingly challenging the pricing of medical products and procedures that they consider not to be cost-effective or are used for a non-approved indication. The failure by physicians, hospitals and other users of our products to obtain sufficient reimbursement from third-party payers would seriously harm our business, financial condition and operating results.

In recent years, there have been numerous proposals to change the health care system in the United States. Some of these proposals have included measures that would limit or eliminate payment for medical procedures or treatments. In addition, government and private third-party payers are increasingly attempting to contain health care costs by limiting both the coverage and the level of reimbursement. In international markets, reimbursement and health care payment systems vary significantly by country. Furthermore, we have encountered price resistance from government-administered health programs. Significant changes in the health care system in the United States or elsewhere, including changes resulting from adverse trends in third-party reimbursement programs, could have a material adverse effect on our business, financial condition and operating results.

We may face product liability claims, which could result in losses in excess of our insurance coverage and which could negatively affect our ability to attract and retain customers.

The manufacture and sale of mechanical heart valves and tissue heart valves entails significant risk of product liability claims and product recalls. Both mechanical heart valves, tissue heart valves and valve repair products are life-sustaining devices, and the failure of any valve or repair product usually results in the patient's death or need for re-operation. A product liability claim or product recall, regardless of the ultimate outcome, could require us to spend significant time and money in litigation or to pay significant damages and could seriously harm our business. We currently maintain product liability insurance coverage in an aggregate amount of $25 million. However, we cannot be assured that our current insurance coverage is adequate to cover the costs of any product liability claims made against us. Product liability insurance is expensive and does not cover the costs of a product recall. In the future, product liability insurance may not be available at satisfactory rates or in adequate amounts. A product liability claim or product recall could also materially and adversely affect our ability to attract and retain customers.

Our business would be adversely affected if we are not able to protect our intellectual property rights.

Our success depends in part on our ability to maintain and enforce our patents and other proprietary rights. We rely on a combination of patents, trade secrets, know-how and confidentiality agreements to protect the proprietary aspects of our technology. These measures afford only limited protection, and competitors may gain access to our intellectual property and proprietary information. The patent positions of medical device companies are generally uncertain and involve complex legal and technical issues. Litigation may be necessary to enforce our intellectual property rights, to protect our trade secrets and to determine the validity and scope of our proprietary rights. Any litigation could be costly and divert our attention from the growth of the business. We cannot assure you that our patents and other proprietary rights will not be successfully challenged, or that others will not independently develop substantially equivalent information and technology or otherwise gain access to our proprietary technology.

We may be sued by third parties claiming that our products infringe on their intellectual property rights. Any such suits could result in significant litigation or licensing expenses or we might be prevented from selling our product.

We may be exposed to future litigation by third parties based on intellectual property infringement claims. Any claims or litigation against us, regardless of the merits, could result in substantial costs and could harm our business. In addition, intellectual property litigation or claims could force us to:

- cease manufacturing and selling our product, which would seriously harm us;
- obtain a license from the holder of the infringed intellectual property right, which license may not be available on reasonable terms, if at all; or
- redesign our product, which could be costly and time-consuming.

We may encounter litigation that could have a material impact on our business.

We may be subject to product liability claims, intellectual property infringement claims or other lawsuits, proceedings and claims arising in the ordinary course of business or otherwise. Although we do not believe that any lawsuits, claims or proceedings arising in the ordinary course of business will have a material adverse impact on our business, operating results or financial condition, it is possible that unfavorable resolutions of any lawsuits, claims or proceedings could have an adverse effect on our business, results of operation or financial condition because of the uncertainty inherent in litigation.

We are subject to extensive governmental regulation, which is costly, time consuming and can subject us to unanticipated delays or could ultimately preclude us from marketing and selling our products.

Our heart valves, surgical cryoablation products and other products and our manufacturing activities are subject to extensive regulation by a number of governmental agencies, including the FDA and comparable international agencies, as well as other federal, state, local and international authorities. We are required to:

- obtain the approval of the FDA or international regulatory authorities where our products are not yet marketed;

- after obtaining approval or clearance of the FDA or international regulatory authorities, maintain the approval of the FDA and international regulatory authorities to continue selling and manufacturing our products;
- satisfy content requirements for all of our labeling, sales and promotional materials;
- comply with manufacturing and reporting requirements; and
- undergo rigorous inspections by these agencies.

Compliance with the regulations of these governmental authorities may delay or prevent us from introducing any new or improved products. The governmental authorities charged with making and implementing these laws or related regulations may change the laws, impose additional restrictions, or adopt interpretations of existing laws or regulations that could have a material adverse effect on us. Violations of these laws or regulatory requirements may result in fines, marketing restrictions, product recall, withdrawal of approvals and civil and criminal penalties. We also may incur substantial costs associated with complying and overseeing compliance with the laws and regulations of these governmental authorities.

We ultimately may not be able to obtain the necessary governmental approvals or clearances in the United States or other jurisdictions, including FDA and CE approvals and clearances, for products that are now under development, including, but not limited to, our ATS 3f Enable Aortic Bioprosthesis tissue heart valve product, our closed-chest aortic tissue heart valve product, and our and surgical cryoablation products designed for standalone minimally invasive procedures. Obtaining these governmental approvals or clearances is uncertain, and the regulatory approval process is likely to be time-consuming and expensive. If we are unable to obtain such governmental approvals or clearances, then our ability to market and sell products currently under development may be delayed or may never occur. Our potential inability to market and sell our products currently under development, together with the potential expenses associated with obtaining the necessary governmental approvals or clearances, may cause us to suffer financial difficulties, which could have a material adverse effect on our business, financial condition and prospects.

The price of our common stock has been volatile, which may result in losses to investors.

Historically, the market price of our common stock has fluctuated over a wide range and it is likely that the price of our common stock will fluctuate in the future. The market price of our common stock could be impacted by the following:

- general market conditions;
- the success of our management in operating ATS effectively;
- the failure of our heart valves and other products to gain market acceptance in the United States;
- announcements of technical innovations or new products by our competitors;
- the status of component supply arrangements;
- changes in reimbursement policies;
- government regulation;
- developments in patent or other proprietary rights, and
- public concern as to the safety and efficacy of products developed by us or others.

In addition, due to one or more of the foregoing factors, in future years our operating results may fall below the expectations of securities analysts and investors. In that event, the market price of our common stock could be materially and adversely affected. Finally, in recent years the stock market has experienced extreme price and volume fluctuations. This volatility has had a significant effect on the market prices of securities issued by many companies for reasons unrelated to their operating performance. These broad market fluctuations may materially adversely affect our stock price, regardless of our operating results.

Our charter documents and Minnesota law may discourage and could delay or prevent a takeover of our company.

Provisions of our articles of incorporation, bylaws and Minnesota law could make it more difficult for a third party to acquire us, even if doing so would be beneficial to our shareholders. These provisions include the following:

- No cumulative voting by shareholders for directors;
- The ability of our Board of Directors to control its size, to create new directorships and to fill vacancies;

- The ability of our Board of Directors, without shareholder approval, to issue preferred stock, which may have rights and preferences that are superior to our common stock;
- The ability of our Board of Directors to amend the bylaws; and
- Restrictions under Minnesota law regarding mergers or other business combinations between us and any holder of 10% or more of our outstanding common stock.

ITEM 1B. UNRESOLVED STAFF COMMENTS

Not Applicable.

ITEM 2. PROPERTIES

We lease approximately 64,000 square feet of space in two adjacent buildings in Plymouth, Minnesota. The first building lease, covering approximately 39,000 square feet, expires on July 31, 2010 and is used for administrative, production and engineering purposes. The lease on the second building (25,000 square feet) also expires July 31, 2010 and is used for carbon manufacturing and research and development. Both of our Minnesota leases carry a three-year renewal option. We also lease approximately 16,000 square feet of space in Lake Forest, California. This lease expires on September 30, 2009 and is used for research and development and manufacturing purposes. Outside the United States, we lease sales and marketing offices in China, France, Germany, Austria and Belgium. We believe that our facilities are adequate for our current needs.

ITEM 3. LEGAL PROCEEDINGS

Abbey Litigation

On January 23, 2006, following execution of the Merger Agreement between the Company and 3F, 3F was informed of a summons and complaint dated January 19, 2006, which was filed in the U.S. District Court in the Southern District of New York by Arthur N. Abbey ("Abbey") against 3F Partners Limited Partnership II (a major stockholder of 3F, "3F Partners II"), Theodore C. Skokos (the then chairman of the board and a stockholder of 3F), 3F Management II, LLC (the general partner of 3F Partners II), and 3F (collectively, the "Defendants") (the "Abbey I Litigation"). The summons and complaint alleges that the Defendants committed fraud under federal securities laws, common law fraud and negligent misrepresentation in connection with the purchase by Abbey of certain securities of 3F Partners II. In particular, Abbey claims that the Defendants induced Abbey to invest $4 million in 3F Partners II, which, in turn, invested $6 million in certain preferred stock of 3F, by allegedly causing Abbey to believe, among other things, that such investment would be short-term. Pursuant to the complaint, Abbey is seeking rescission of his purchase of his limited partnership interest in 3F Partners II and return of the amount paid therefor (together with pre-and post-judgment interest), compensatory damages for the alleged lost principal of his investment (together with interest thereon and additional general, consequential and incidental damages), general damages for all alleged injuries resulting from the alleged fraud in an amount to be determined at trial and such other legal and equitable relief as the court may deem just and proper. Abbey did not purchase any securities directly from 3F and is not a stockholder of 3F. On March 23, 2006, 3F filed a motion to dismiss the complaint. On August 6, 2007, the Court granted 3F's motion to dismiss the complaint based on plaintiff's failure to state a claim upon which relief may be granted and ordered the Clerk of the Court to close the case. On August 30, 2007, Abbey filed a Notice of Appeal with the United States Court of Appeals for the Second Circuit seeking to reverse the District Court's August 6, 2007 Order dismissing the case. On December 18, 2008, The Second Circuit issued a Summary Order that affirmed the District Court's judgment of dismissal finding that Abbey failed to state a claim against 3F. However, the Second Circuit remanded the case to the District Court to allow Abbey a chance to replead his claims. On February 13, 2009, Abbey filed an Amended Complaint in the District Court. 3F's response to the amended complaint is due on March 31, 2009.

On or about June 14, 2006, Abbey commenced a second civil action in the Court of Chancery in the State of Delaware by serving 3F with a complaint naming both 3F and Mr. Skokos as defendants (the "Abbey II Litigation"). The complaint alleges, among other things, fraud and breach of fiduciary duties in connection with the purchase by Abbey of his partnership interest in 3F Partners II. The Delaware action seeks: (1) a declaration that (a) for purposes of the merger, Abbey was a record stockholder of 3F and was thus entitled to withhold his consent to the merger and seek appraisal rights after the merger was consummated and (b) the irrevocable stockholder consent submitted by 3F Partners II to approve the merger be voided as unenforceable; and (2) damages based upon allegations that 3F aided and abetted Mr. Skokos in breaching Mr. Skokos's fiduciary duties of loyalty and faith to Abbey. On July 17, 2006, 3F filed a motion to dismiss the complaint in the Abbey II Litigation, or, alternatively, to stay the action pending adjudication of the Abbey I Litigation. On October 10, 2006, the Delaware Chancery Court entered an order staying the Delaware action pending the outcome of the Abbey I litigation. On or about August 17, 2007, the parties informed the Delaware Chancery Court that they

would consent to the continued stay of the Delaware action pending the outcome of Abbey's appeal of the Abbey I Litigation.

3F has been notified by its director and officer insurance carrier that such carrier will defend and cover all defense costs as to 3F and Mr. Skokos in the Abbey I Litigation and Abbey II Litigation, subject to policy terms and full reservation of rights. In addition, under the merger agreement, 3F and the 3F stockholder representative have agreed that the Abbey I Litigation and Abbey II Litigation are matters for which express indemnification is provided. As a result, the escrow shares and milestone shares, if any, may be used by ATS to satisfy, in part, ATS's set-off rights and indemnification claims for damages and losses incurred by 3F or ATS, and their directors, officers and affiliates, that are not otherwise covered by applicable insurance arising from the Abbey I Litigation and Abbey II Litigation. See Note 2 of "Notes to Consolidated Financial Statements" in this Annual Report on Form 10-K for a description of the escrow and milestone shares. The Company believes the Abbey I Litigation and Abbey II Litigation will not have a material impact on the Company's financial position or operating results.

CarboMedics Litigation

On November 22, 2006, CarboMedics filed a complaint against the Company in the U.S. District Court in the District of Minnesota. The complaint alleged that the Company breached certain contractual obligations, including an alleged obligation to purchase $22 million of mechanical heart valve carbon components under a long-term supply agreement with CarboMedics.

CarboMedics initially sought specific performance and claimed damages of more than $20 million. On February 16, 2007, the Company filed its answer and counterclaims to the complaint. CarboMedics subsequently withdrew its request for specific performance and revised its damages estimate to $12.5 million before accounting for attorney fees and costs.

On May 30, 2008, the court entered a formal stay to permit the parties to pursue alternative dispute resolution. The parties were unable to reach an agreement and the stay was lifted on September 17, 2008. On the same date, the court denied both parties' dispositive motions.

On December 22, 2008, the Company announced that the parties had executed a settlement agreement. CarboMedics agreed to release all claims that were or could have been asserted in the case. In exchange, the Company agreed to pay CarboMedics $7.5 million and to release its claims. The Company paid $3 million in December 2008 and will pay an additional $4.5 million by April 30, 2009. Satisfaction of the settlement terms will conclude all related matters with CarboMedics and preclude any future litigation on the matter in question.

ITEM 4. SUBMISSION OF MATTERS TO A VOTE OF SECURITY HOLDERS

Not Applicable.

PART II

ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

Market Information

Our common stock is traded on the NASDAQ Global Market under the symbol "ATSI." The following table sets forth, for the periods indicated, the high and low closing sales prices per share of our common stock as reported on the NASDAQ Global Market. These prices do not include adjustments for retail mark-ups, mark-downs, or commissions.

Fiscal Year 2007:	High	Low
First Quarter	$2.39	$2.05
Second Quarter	$2.08	$1.54
Third Quarter	$2.01	$1.54
Fourth Quarter	$2.21	$1.57

Fiscal Year 2008:	High	Low
First Quarter	$2.18	$1.41
Second Quarter	$2.34	$1.41
Third Quarter	$3.24	$2.06
Fourth Quarter	$2.89	$1.98

Holders

As of February 24, 2009, we had approximately 520 holders of record of our common stock.

Dividends

We are currently restricted from declaring or paying dividends on our common stock under our loan agreements with Silicon Valley Bank. We have never declared or paid cash dividends in the past and intend to retain all future earnings for the operation and expansion of our business.

Repurchases of Common Stock

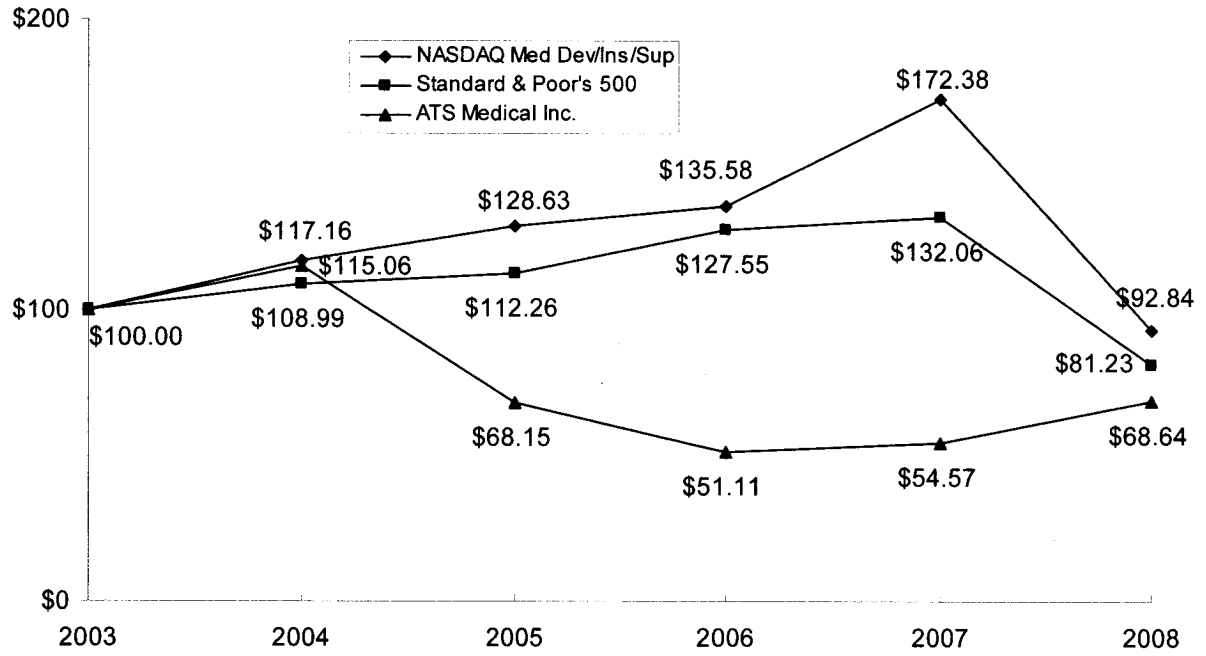
We did not repurchase any of our securities during the fourth quarter of 2008.

Sales of Unregistered Securities

We had no sales of unregistered securities during 2008 that have not been previously disclosed in a Current Report on Form 8-K or Quarterly Report on Form 10-Q.

Performance Graph

The graph below compares the cumulative total shareholder return on our common stock since December 31, 2003 with the cumulative return of the Standard & Poor's 500 Stock Index and the NASDAQ Medical Devices, Instruments and Supplies Index over the same period (assuming the investment of $100 in each vehicle on December 31, 2003 and reinvestment of all dividends).



Name	2003	2004	2005	2006	2007	2008
NASDAQ Medical Dev/Ins/Sup	$100.00	$117.16	$128.63	$135.58	$172.38	$92.84
Standard & Poor's 500 Stock Index	100.00	108.99	112.26	127.55	132.06	81.23
ATS Medical, Inc.	100.00	115.06	68.15	51.11	54.57	68.64

ITEM 6. SELECTED FINANCIAL DATA

(in thousands, except per share data)	Year Ended December 31, 2008	2007	2006	2005	2004
Statement of Operations Data:					
Net sales	**$65,821**	$49,587	$40,449	$34,636	$28,015
Cost of sales	**25,267**	21,238	19,568	22,828	21,227
Gross profit	**40,554**	28,239	20,881	11,808	6,788
Operating expenses:					
Sales and marketing	**27,373**	24,633	21,008	18,948	16,520
Research and development	**8,215**	7,546	3,381	1,733	1,011
Acquired in-process research and development	**-**	3,500	14,400	-	-
General and administrative	**10,509**	10,417	8,786	7,314	5,954
Litigation settlement	**7,500**	-	-	-	-
Amortization of intangibles	**3,489**	2,516	106	-	-
Intangible asset impairment	**-**	755	-	-	-
Distributor termination expense	**-**	-	733	-	-
Total operating expenses	**57,086**	49,367	48,414	27,995	23,485
Operating loss	**(16,532)**	(21,128)	(27,533)	(16,187)	(16,697)
Interest income (expense), net	**(2,739)**	(1,822)	(1,669)	(338)	54
Other income, net	**413**	61	1,528	2,131	-
Net loss before income taxes	**(18,858)**	(22,889)	(27,674)	(14,394)	(16,643)
Income tax expense	**481**	119	-	-	-
Net loss	**($19,339)**	($23,008)	($27,674)	($14,394)	($16,643)
Net loss per share:					
Basic	**($0.31)**	($0.44)	($0.83)	($0.46)	($0.58)
Diluted	**($0.31)**	($0.44)	($0.83)	($0.46)	($0.58)
Weighted average number of shares outstanding:					
Basic	**61,440**	52,589	33,537	31,009	28,856
Diluted	**61,440**	52,589	33,537	31,009	28,856

(in thousands)	As of December 31, 2008	2007	2006	2005	2004
Balance Sheet Data:					
Cash, cash equivalents and short-term investments	**$ 20,895**	$ 14,669	$10,704	$21,709	$15,994
Working capital	**37,689**	30,121	32,976	46,417	41,459
Total assets	**114,981**	105,897	85,840	85,443	79,051
Long-term liabilities, excluding current maturities	**21,502**	25,321	18,588	19,679	1,826
Shareholders' equity	**74,575**	64,956	57,890	57,529	69,441

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

Executive Overview

ATS Medical, Inc. (hereinafter the "Company", "ATS", "we", "us" or "our") develops, manufactures, and markets medical devices. Our primary interest lies with devices for the treatment of structural heart disease used by cardiovascular surgeons in the cardiac surgery operating theater. Currently, we participate in the markets for heart valve therapy including mechanical bileaflet replacement heart valves, tissue heart valves and valve repair products and the surgical treatment of cardiac arrhythmias, primarily the treatment of atrial fibrillation. Additionally a small portion of our business is surgical tools and accessories used by the cardiac surgeon.

In 1990, we licensed a patented and partially developed mechanical heart valve from CarboMedics. Under the terms of the license, we would complete the development of the valve and agreed to purchase carbon components from CarboMedics. As a result, ATS now holds an exclusive, royalty-free, worldwide license to an open pivot, bileaflet mechanical heart valve design owned by CarboMedics. In addition, we have an exclusive, worldwide right and license to use CarboMedics' pyrolytic carbon technology to manufacture components for the ATS mechanical heart valve. We commenced selling the ATS mechanical heart valve in international markets in 1992. In late 2000, we received FDA approval to sell the ATS Open Pivot mechanical heart valve and commenced sales and marketing of our valve in the United States.

During 2002, we reorganized the Company and began the process of rebuilding our sales and marketing teams, both in the United States and internationally. This rebuilding has been a significant factor in our operating expense levels since 2002. During 2004 and 2005, we developed and implemented a plan to ramp-up our own manufacturing facility for pyrolytic carbon. By the end of 2005, this process was substantially complete.

During 2004, we made our first investments outside the mechanical heart valve market. We completed a global partnership agreement with CryoCath to market CryoCath's surgical cryotherapy products for the ablation of cardiac arrhythmias. CryoCath developed a portfolio of novel products marketed under the SurgiFrost® and FrostByte® trade names which are used by cardiac surgeons to treat cardiac arrhythmias. Treatment is accomplished through the creation of an intricate pattern of lesions on the surface of the heart to block inappropriate electrical conduction circuits which cause the heart to be less effective when pumping blood and can lead to stroke, heart failure and death. Unique to this technology is the use of cryothermy (cold) to create lesions. The agreement with CryoCath has resulted in revenues for ATS since 2005.

During 2005, we continued to develop our business outside the mechanical heart valve market. We entered into an exclusive development, supply and distribution agreement with GBI under which GBI will develop, supply and manufacture cardiac surgical products to include annuloplasty repair rings and bands and accessories, and we will have exclusive worldwide rights to market and sell such products. Our agreement with GBI has produced revenues for us since 2006.

In 2006, we completed the acquisition of all the voting and non-voting stock of 3F, a privately-held medical device company specializing in manufacturing tissue heart valves. The acquisition was consummated pursuant to an agreement and plan of merger, as amended ("the Merger Agreement"). Under the terms of the Merger Agreement, upon closing, we paid each 3F stockholder its pro-rata portion of an initial payment of 9,000,000 shares of our common stock, subject to certain adjustments. In addition to the initial closing payment, we are obligated to make additional contingent payments to 3F stockholders of up to 10,000,000 shares of our common stock with shares issuable upon obtaining each of the CE mark and FDA approval of certain future key products on or prior to December 31, 2013. Milestone share payments may be accelerated upon completion of certain transactions involving these future key products. Our current first generation tissue valve, the ATS 3f Aortic Bioprosthesis, has received the CE mark and is available for sale in Europe and certain other international markets. In the United States, we received FDA approval of this product in October 2008.

Also in 2006, we entered into an exclusive distribution agreement with Novare Surgical Systems, Inc. ("Novare"). Novare is the owner of the Enclose II® cardiac anastomosis assist device, which is a device used by cardiac surgeons to attach a bypass vessel to the aorta during coronary artery bypass graft surgery. Under the terms of the agreement, we hold the exclusive right to market, sell and distribute the Enclose II product in the United States, Germany, France and the United Kingdom. We agreed to pay to Novare a transfer price for each box of Enclose II product we purchase.

In June 2007, we acquired the cryoablation surgical device business of CryoCath. The acquisition included the SurgiFrost, FrostByte and SurgiFrost XL family of products for which we served as CryoCath's exclusive agent in the United States and distributor in certain international markets. Under the acquisition agreements, we paid CryoCath $22.0 million upon closing of the transaction (reduced by $0.9 million subsequent to closing) and $2.0 million during 2008 upon the achievement of certain manufacturing transition milestones. We must also pay $2.0 million two years after closing and up to $4.0 million in contingent payments based on future sales of Surgifrost XL, an FDA cleared and CE Marked product designed to enable less-evasive ablations. This technology enables us to leverage our current operating infrastructure and allows us to better address the rapidly growing $130 million cardiac arrhythmia market within cardiac surgery. The transaction was financed with a portion of the proceeds of an $8.6 million senior secured Term Loan ("Term Loan") from Silicon Valley Bank and the private placement of 9,800,000 shares of our common stock at a purchase price of $1.65 per share to Alta Partners VIII, L.P., a life sciences venture capital firm.

Critical Accounting Policies and Estimates

We base our estimates on historical experience and on various other assumptions that we believe to be reasonable under the circumstances. This discussion and analysis of our financial condition and results of operations is based upon our consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States. The preparation of these financial statements requires us to make estimates and judgments that affect (1) the reported amounts of assets, liabilities, revenues, and expenses and (2) the related disclosure of contingent liabilities. At each balance sheet date, we evaluate our estimates, including but not limited to, those related to accounts receivable, inventories, long-lived assets and income taxes. The critical accounting policies that are most important in fully understanding and evaluating the financial condition and results of operations are discussed below.

Revenue Recognition Policy. A significant portion of our revenue in the United States and in our direct European sales operations is generated from consigned inventory maintained at hospitals or with field representatives. In these situations, revenue is recognized at the time that the product has been implanted or used. In all other instances, revenue is recognized at the time product is shipped. Certain independent distributors in select international markets receive rebates against invoiced sales amounts. In these situations, we accrue for these rebates at the time of the original sale. These accrued rebates were not significant at either December 31, 2008 or December 31, 2007. These rebates are treated as a reduction of revenue.

The Company includes shipping and handling costs, net of shipping charges invoiced to customers, in cost of goods sold.

Allowance for Doubtful Accounts. We maintain an allowance for doubtful accounts that is calculated using subjective judgments and estimates to establish this valuation account. Our distribution in international markets through independent distributors concentrates relatively large amounts of receivables in relatively few customer accounts. We have successfully done business with most of these distributors for many years. We monitor amounts that are not paid according to terms. We attempt to accrue for potential losses due to non-payment. Financial conditions in international markets can change very quickly and our allowance for doubtful accounts cannot anticipate all potential changes. Our allowance for doubtful accounts was approximately $0.4 million and $0.2 million at December 31, 2008 and 2007, respectively. As a percentage of total accounts receivable, the allowance was 2.4% at December 31, 2008 and 2.0% at December 31, 2007.

Inventory Valuation. Inventories are recorded and relieved at the lower of manufacturing cost (first-in, first-out basis) or market (net realizable value). We maintain an obsolescence allowance against certain finished goods inventories to cover resterilization costs for expired or near-expired items. This allowance totaled $0.06 million and $0.03 million at December 31, 2008 and 2007, respectively. In addition, we maintain a reserve against work-in-process ("WIP") inventories to cover scrap costs associated with the completion of this WIP inventory. This reserve totaled approximately $0.1 million at both December 31, 2008 and 2007. We also maintain finished goods obsolescence reserves against tissue heart valve inventories with less than one year shelf-life remaining. These reserves totaled $0.6 million and $0.5 million at December 31, 2008 and 2007, respectively.

Goodwill and Intangible Assets. We assess the carrying value of our goodwill and other indefinite-lived intangible assets annually in accordance with the provisions of Statement of Financial Accounting Standard ("SFAS") No. 142, *Goodwill and Other Intangible Assets*. The assessment of potential impairment requires certain judgments and estimates, including the determination of an event indicating impairment, the future cash flows to be generated by the asset, risks associated with those cash flows, and the discount rate to be utilized. During 2007, we recorded an impairment charge of $0.8 million related to licensing fee and development milestone payments made to a Swedish research firm related to filtration technology for cardiac surgery procedures. As of December 31, 2008, we believe the carrying value of our intangible assets, including the

CarboMedics carbon technology license and the goodwill and definite-lived intangible assets acquired in connection with our acquisitions of 3F and the assets of the surgical cryoablation business of CryoCath, are recoverable and that no further impairment charges are necessary.

Deferred Tax Assets. We have incurred cumulative tax losses of approximately $161 million. The losses are carried forward for U.S. and state corporate income taxes and can be used to reduce future taxable income. As a result, at December 31, 2008, we had net deferred tax assets totaling approximately $62.3 million. We have recorded a full valuation allowance against these assets because of the limited lives of the carryforwards and our lack of earnings history, which has resulted in our conclusion that it is not more than likely we will be able to utilize our loss carryforwards. The ability to utilize a portion of our cumulative tax losses to offset future taxable income is subject to certain limitations under Section 382 and 383 of the Internal Revenue Code due to changes in the equity ownership of the Company. In addition, 3F's tax loss carryforwards may also be limited by separate return limitation year rules.

Convertible Debt and Derivative Instruments. We account for embedded derivatives related to our Convertible Senior Notes under SFAS No. 133, *Accounting for Derivative Instruments and Hedging Activities,* and related Emerging Issues Task Force ("EITF") Interpretations and SEC rules, which require certain embedded derivative financial instruments to be bifurcated from the debt agreement and accounted for as a liability. Our Convertible Senior Notes contain several embedded derivatives. The valuation of derivatives requires management to make certain judgments and estimates, including the potential future fair value of our common stock, the probability of a change in control of the Company and the probability that the debt may be put back to or called by us.

Stock-Based Compensation. We account for our stock-based employee compensation plans under the recognition and measurement principles of SFAS No. 123 (Revised 2004), *Share-Based Payment* ("Statement 123(R)"), which requires all share-based payments to be recognized in the income statement based on their fair values. We issue both stock options and restricted stock unit awards ("RSUs") to our employees. The fair value of stock option grants is determined based on the Black-Scholes-Merton ("Black-Scholes") option pricing model. The fair value of RSUs is determined based on the closing market price on the award date.

Recently Issued Accounting Pronouncements. See Note 17 of "Notes to Consolidated Financial Statements" in this Form 10-K for a discussion of recently issued accounting pronouncemnts impacting the Company

Results of Operations

The following table provides the dollar and percentage change in our Statements of Operations for 2008 compared to 2007 and 2007 compared to 2006.

			Increase (Decrease)				Increase (Decrease)	
(In thousands)	2008	2007	$	%	2007	2006	$	%
Net sales	$65,821	$49,587	$16,234	32.7%	$49,587	$40,449	$ 9,138	22.6%
Cost of goods sold	25,267	21,348	3,919	18.4%	21,348	19,568	1,780	9.1%
Gross profit	40,554	28,239	12,315	43.6%	28,239	20,881	7,358	35.2%
Operating expenses:								
Sales and marketing	27,373	24,633	2,740	11.1%	24,633	21,008	3,625	17.3%
Research and development	8,215	7,546	669	8.9%	7,546	3,381	4,165	123.2%
Acquired in-process R&D	-	3,500	(3,500)	(100.0)%	3,500	14,400	(10,900)	(75.7)%
General and administrative	10,509	10,417	92	0.9%	10,417	8,786	1,631	18.6%
Litigation settlement	7,500	-	7,500	-	-	-	-	-
Amortization of intangibles	3,489	2,516	973	38.7%	2,516	106	2,410	2,273.6%
Impairment of intangibles	-	755	(755)	(100.0)%	755	-	755	-
Distributor termination expense	-	-	-	-	-	733	(733)	(100.0)%
Total operating expenses	57,086	49,367	7,719	15.6%	49,367	48,414	953	2.0%
Operating loss	(16,532)	(21,128)	(4,596)	(21.8)%	(21,128)	(27,533)	(6,405)	(23.3)%
Interest expense, net	(2,739)	(1,822)	917	50.3%	(1,822)	(1,669)	153	9.2%
Other income, net	413	61	352	577.0%	61	1,528	(1,467)	(96.0)%
Net loss before income taxes	(18,858)	(22,889)	(4,031)	(17.6)%	(22,889)	(27,674)	(4,785)	(17.3)%
Income tax expense	481	119	362	304.2%	119	-	119	-
Net loss	($19,339)	($23,008)	($ 3,669)	(15.9)%	($23,008)	($27,674)	($ 4,666)	(16.9)%

The following table presents our Statements of Operations as a percentage of net sales for 2008, 2007 and 2006.

	2008	2007	2006
Net sales	100.0%	100.0%	100.0%
Cost of goods sold	38.4%	43.1%	48.4%
Gross profit	61.6%	56.9%	51.6%
Operating expenses:			
Sales and marketing	41.6%	49.7%	51.9%
Research and development	12.5%	15.2%	8.4%
Acquired in-process R&D	0.0%	7.1%	35.6%
General and administrative	16.0%	21.0%	21.7%
Litigation settlement	11.4%	0.0%	0.0%
Amortization of intangibles	5.3%	5.1%	0.3%
Impairment of intangibles	0.0%	1.5%	0.0%
Distributor termination expense	0.0%	0.0%	1.8%
Total operating expenses	86.7%	99.6%	119.7%
Operating loss	-25.1%	-42.6%	-68.1%
Interest expense, net	-4.2%	-3.7%	-4.1%
Other income, net	0.6%	0.1%	3.8%
Net loss before income taxes	-28.7%	-46.2%	-68.4%
Income tax expense	-0.7%	-0.2%	0.0%
Net loss	-29.4%	-46.4%	-68.4%

Net Sales

The following table provides the dollar and percentage change in our net sales inside and outside the United States for 2008 compared to 2007 and 2007 compared to 2006.

			Increase				Increase	
(In thousands)	2008	2007	$	%	2007	2006	$	%
United States	$25,139	$18,653	$6,486	34.8%	$18,653	$15,551	$3,102	19.9%
Outside United States	40,682	30,934	9,748	31.5%	30,934	24,898	6,036	24.2%
Total	$65,821	$49,587	$16,234	32.7%	$49,587	$40,449	$9,138	22.6%

The following table provides our net sales inside and outside the United States as a percentage of total net sales for 2008, 2007 and 2006.

	2008	2007	2006
United States	38.2%	37.6%	38.4%
Outside United States	61.8%	62.4%	61.6%
Total	100.0%	100.0%	100.0%

The following table provides our net sales by product group for 2008, compared to 2007 and 2007 compared to 2006.

			Increase				Increase	
(In thousands)	2008	2007	$	%	2007	2006	$	%
Heart valve therapy	$47,576	$38,560	$9,016	23.4%	$38,560	$35,343	$3,217	9.1%
Surgical arrhythmia therapy	16,888	9,690	7,198	74.3%	9,690	4,554	5,136	112.8%
Surgical tools and accessories	1,357	1,337	20	1.5%	1,337	552	785	142.2%
Total	$65,821	$49,587	$16,234	32.7%	$49,587	$40,449	$9,138	22.6%

Heart valve therapy sales, our largest product group, consists of mechanical and tissue heart valves and heart valve repair products. Our mechanical heart valve products continue to be our primary product line and comprised approximately 65%, 72% and 82% of our total worldwide sales for 2008, 2007 and 2006, respectively, and 90%, 93% and 94% of total heart valve therapy revenues in 2008, 2007 and 2006, respectively. Surgical arrhythmia therapy products consist of cryotherapy products for the ablation of cardiac arrhythmias. We acquired this business from CryoCath in June 2007. Surgical tools and accessories consist primarily of cardiac anastomosis assist devices and thoracic port systems.

Net sales for all periods have been favorably impacted by revenue from the acquisitions, new products and new business initiatives and partnerships discussed above. Approximately 35% of our worldwide revenue in 2008 was derived from products other than mechanical heart valves, up from approximately 28% in 2007 and 18% in 2006.

Approximately 23% of our total revenue in 2008 was denominated in foreign currencies, primarily the Euro, compared to 22% in 2007 and 16% in 2006.

2008 compared to 2007. Worldwide mechanical heart valve revenue in 2008 of $42.9 million increased 17% from 2007. U.S. mechanical heart valve revenue in 2008 increased 2% from 2007, the result of the introduction of a new mechanical valve offering in 2008, the AP 360 valve, which allowed us to take market share from competitors. International mechanical heart valve revenue increased approximately 26% in 2008 from 2007, due primarily to the expansion of direct selling operations in certain international markets and to stronger mechanical heart valve sales in developing markets. Tissue heart valve revenue increased 173% in 2008 to $1.5 million, driven primarily by a limited commercial launch in certain western European markets. Heart valve repair revenue increased 80% in 2008 to $3.2 million, due to the introduction of our semi-rigid line of repair rings in the first quarter of 2008 as well as to continued sales growth of our existing repair ring products.

Surgical arrhythmia therapy revenue in 2008 of $16.9 million increased 74% compared to 2007. The most significant driver of the revenue increase was our acquisition of the surgical cryoablation business of CryoCath in June 2007. Prior to this date we served as an agent and received a commission on the majority of the sales transactions. After the acquisition our revenue is representative of end user pricing and the addition of more direct customers and geographies where CryoCath had previously maintained direct distribution. CryoMaze procedural growth has benefited from the overall growth of the surgical ablation market and increased market acceptance of cryo-energy as a preferred technology to perform Cox-Maze lesion sets.

Approximately 200 basis points of our 32.7% increase in net sales for 2008 compared to 2007 is attributable to higher average foreign currency exchange rates against the U.S. dollar. Approximately 23% of our total sales in 2008 were invoiced in Euros or other local currencies in European markets where we sell our products direct to hospitals.

2007 compared to 2006. Worldwide mechanical heart valve revenue in 2007 of $35.7 million increased 8% from 2006. U.S. mechanical heart valve revenue declined approximately 18% in 2007 compared to 2006, reflecting the decline in the U.S. mechanical heart valve market due to the encroachment of tissue valves and repair technologies. International mechanical heart valve revenue increased approximately 20% in 2007 compared to 2006, due primarily to the expansion of direct selling operations in certain international markets in 2007 and to stronger mechanical heart valve sales in developing markets. Heart valve repair revenue in 2007 of $1.8 million increased 57% compared to 2006 due to sales growth of our repair ring products, which were introduced in mid-2006.

Surgical arrhythmia therapy sales volume in 2007 increased significantly over 2006 primarily due to the post-acquisition impacts, discussed above, connected with our acquisition of the surgical cryoablation business of CryoCath. Net sales of these products for the first half of 2007 and all of 2006 are representative of our prior distribution and agency agreements with CryoCath.

Approximately 240 basis points of our 22.6% percentage increase in net sales for 2007 compared to 2006 is attributable to higher average foreign currency exchange rates against the U.S. dollar. Approximately 22% of our total sales in 2007 were invoiced in Euros or other local currencies in European markets where we sell our products direct to hospitals.

Cost of Goods Sold and Gross Profit

2008 compared to 2007. Our 2008 gross profit was 61.6% of revenue, which represents an increase of 470 basis points compared to 56.9% in 2007. Our 2008 gross profit, both in dollars and in percentage of net sales, has benefited from lower cost internally-manufactured mechanical heart valves. The gross profit improvement is attributable primarily to lower mechanical valve unit costs as production significantly increased in 2008 to meet increased mechanical heart valve demand, primarily in international markets. Greater absorption of manufacturing labor and overhead in 2008 resulted in a reduction of our mechanical heart valve cost of goods per unit of approximately 15% compared to 2007 and contributed 220 basis points to the overall gross profit percentage of net sales increase. Our 2008 gross profit percentage of net sales also benefited, by approximately 90 basis points, from higher international average selling prices associated with our expansion of direct selling efforts in certain European markets and appreciation of the Euro against the dollar compared to 2007. Direct sales of surgical cryotherapy products after our acquisition of the surgical cryoablation business of CryoCath in late June 2007 contributed 260 basis points to our 2008 increase in gross profit percentage of net sales. These sales included the gross-up on certain sales for which we had served as an agent and received a commission prior to the acquisition and the addition of direct sales to other CryoCath corporate customers.

Partially offsetting the improved 2008 gross profit percentage of net sales were shifts in the overall sales mix, both geographic and product-related. The most significant sales mix impact was related to product mix shifts during 2008 from higher margin mechanical heart valve products to lower margin cryotherapy and repair ring products, which negatively impacted the 2008 overall gross profit percentage of net sales by approximately 130 basis points compared to 2007.

2007 compared to 2006. Our 2007 gross profit was 56.9% of revenue, an increase of 530 basis points compared to 51.6% in 2006. Our 2007 gross profit benefited from sales of lower cost mechanical heart valves resulting from the early-2006 depletion of high-priced inventories of carbon components purchased from CarboMedics and the move into lower-cost, internally-produced carbon material cost layers. This transition to full in-house manufacture of mechanical heart valves favorably impacted our 2007 gross profit percentage compared to the prior year by approximately 500 basis points. Our 2007 gross profit, both in dollars and as a percentage of net sales, also benefited from direct sales of surgical cryotherapy products in the second half of 2007 after our acquisition of the surgical cryoablation business of CryoCath in late June 2007, which contributed approximately 160 basis points to the overall gross profit as a percentage of net sales improvement in 2007 compared to 2006.

Our 2007 gross profit percentage was negatively impacted by a shift in the mix of our mechanical heart valve product sales. Lower U.S. mechanical heart valve unit sales volume, coupled with higher international mechanical heart valve sales at lower average selling prices and gross margins than the United States, lowered our 2007 gross profit as a percentage of net sales by approximately 60 basis points compared to the prior year. This mix shift impact was lessened by higher 2007 mechanical heart valve average selling prices in both U.S. and international markets compared to 2006. Our 2007 gross profit percentage was also negatively impacted by tissue valve obsolescence costs, manufacturing variances due to low tissue manufacturing volumes and by cryoablation manufacturing start-up costs. These period costs lowered our 2007 gross profit as a percentage of net sales by approximately 200 basis points compared to 2006.

Sales and Marketing

2008 compared to 2007. In the United States, our sales and marketing costs in 2008 increased approximately 10% over the prior year, to $16.6 million. The increase reflects costs for additional marketing personnel ($0.6 million), higher marketing program costs ($0.3 million) and higher achievement under incentive compensation plans (0.5 million). Field selling costs in the United States were largely flat in 2008 compared to the prior year, reflecting the 2007 turnover and reduction in field sales personnel offset by higher sales commissions in 2008.

Internationally, our sales and marketing costs in 2008 increased approximately 12% over 2007 to $10.7 million. The increase reflects our continued investment in international markets, including the establishment of a European support office during the second half of 2008 to support the expansion of our direct sales operations in Europe ($0.2 million) and the commencement of direct sales activities in Switzerland in the third quarter of 2007 ($0.5 million), and to higher achievement under incentive compensation plans ($0.3 million). Our higher 2008 international sales and marketing costs were also attributable to rising Euro-to-U.S. dollar foreign exchange rates, which accounted for approximately one-half of the year-over-year increase. More than 75% of our international sales and marketing costs in 2008 were denominated in Euros.

2007 compared to 2006. In the United States, our sales and marketing costs in 2007 increased approximately 5% over the prior year, to $15.1 million, while 2006 U.S. sales and marketing costs increased approximately 6% over the prior year to $14.4 million. The 2007 increase reflects the addition of marketing expenses for 3F related to the market launch of our first generation tissue heart valve, hiring costs for additional marketing personnel and $0.2 million of higher stock compensation expense related primarily to accelerated vesting of restricted stock units under contingent vesting provisions which were triggered or met, offset in part by lower spending in the U.S. field sales force. Field selling costs in the United States were $0.6 million, or 6% lower in 2007 compared to 2006, reflecting the turnover of and reduction in field sales personnel.

Internationally, our sales and marketing costs in 2007 increased over 2006 by approximately 45% to $9.6 million. The increase reflects our continued investment in international markets, including the establishment of a European support office during the second half of 2006 to support the expansion of our direct sales operations in Europe, and higher sales and marketing expenses in Eastern Europe, Asia and China. In the third quarter of 2007, we began direct sales activities in Switzerland. Our higher international sales and marketing costs in 2007 were also attributable, in part, to rising Euro-to-U.S. dollar foreign exchange rates during 2007. More than two-thirds of our 2007 international sales and marketing costs were denominated in Euros.

Research and Development

2008 compared to 2007. Research and development ("R & D") expenses for 2008 increased approximately 9% compared to the prior year to $8.2 million. The increase in R & D reflects higher clinical program and product approval costs for tissue heart valves ($0.9 million) primarily related to the U.S. approval of our first tissue valve offering, the ATS 3f Aortic Bioprosthesis and the enrollment ramp-up in our Enable clinical trial during 2008. Also contributing to the higher R & D costs were corporate bonus plan accruals ($0.6 million) and increases in both R & D personnel and programs ($0.7 million). Partially offsetting these increases in 2008 R & D spending was a decline in tissue valve R & D spending ($1.1 million) and transfers of costs related to R & D clinical product builds, prototypes and testing devices ($0.3 million) as our tissue valve products advanced through the regulatory approval process.

2007 compared to 2006. R & D expenses in 2007 increased 123% compared to the prior year to $7.5 million. The increase in R & D reflects the addition of research, clinical and regulatory costs for tissue heart valves ($4.8 million in 2007 compared to $1.3 million in 2006 after the acquisition of 3F in September 2006) and the hiring of a Vice President for R & D in late 2006. The higher R & D spending also reflects increases in the number of internal R & D programs.

Acquired In-Process R & D

In connection with our June 2007 acquisition of the surgical cryoablation business of CryoCath, we recorded a non-recurring in-process R & D charge of $3.5 million in the second quarter of 2007. See Note 2 of "Notes to Consolidated Financial Statements" in this Form 10-K for additional information regarding the CryoCath acquisition, including the purchase price and the allocation of the purchase price. The IPR&D relates to SurgiFrost XL, a product line in development to enable less invasive stand alone or sole therapy solutions to treat AF. We used the income approach to determine the fair value of IPR&D, applying a risk adjusted discount rate of 30% to the development project's projected cash flows.

In connection with our acquisition of 3F, we recorded a non-recurring IPR&D charge of $14.4 million in the third quarter of 2006. See Note 2 of "Notes to Consolidated Financial Statements" in this Form 10-K for additional information regarding the 3F acquisition. The IPR&D relates to the Enable sutureless tissue valve product line. We used the income approach to determine the fair value of IPR&D, applying a risk adjusted discount rate of 37% to the development project's projected cash flows.

General and Administrative

2008 compared to 2007. General and administrative ("G & A") expenses for 2008 increased $0.1 million over 2007 to $10.5 million. Major cost increases in G & A expenses in 2008 were for legal fees (primarily related to the CarboMedics litigation) of $1.2 million and corporate incentive compensation plan accruals of $0.3 million. These cost increases were offset by $0.7 million in employee severance costs and $0.4 million of business development expenses incurred in 2007 which did not repeat in 2008, as well as to $0.3 million of lower consulting and outside services fees in 2008.

For 2008, we recognized total stock compensation expense of $1.68 million, of which $0.71 million was included in G & A expenses and $0.97 million was included in sales and marketing expenses. For 2007, we recognized total stock compensation expense in 2007 of $1.45 million, of which $0.65 million was included in G & A

expenses and $0.80 million in sales and marketing expenses. The increase in stock compensation expense for 2008 over 2007 reflects primarily an increase in restricted stock unit awards in 2008 at higher closing stock prices.

2007 compared to 2006. G & A expenses for 2007 increased $1.6 million over 2006 to $10.4 million. Major cost increases in G & A expenses in 2007 related to severance costs for terminated employees of $0.7 million, corporate facilities and business development expenses of $0.7 million, legal fees of $0.9 million, and compensation costs related primarily to staff additions of $0.3 million. These cost increases were offset, in part, by $0.5 million in lower 2007 corporate incentive compensation accruals, $0.4 million in lower outside services and consulting fee expenses and $0.3 million in lower bad debt expense related to the termination in 2006 of an international distributor.

We recognized total stock compensation expense in 2007 of $1.45 million, of which $0.65 million was included in G & A expenses and $0.80 million in sales and marketing expenses. For 2006, we recognized total stock compensation expense of $1.11 million, of which $0.45 million was included in G & A expenses and $0.65 million in sales and marketing expenses. The increase in stock compensation expense for 2007 over 2006 reflects primarily $0.25 million of accelerated vesting of restricted stock units under contingent vesting provisions which were triggered or met.

Litigation Settlement

In December 2008, we settled our lawsuit with CarboMedics, which began in 2007 and was related to our supply agreement with CarboMedics for certain mechanical heart valve components. As part of the settlement, we paid $3.0 million to CarboMedics in December 2008, and we will pay an additional $4.5 million by April 30, 2009. Under the terms of the settlement, we maintain all rights to manufacture, market and sell our ATS Open Pivot mechanical heart valve. Satisfaction of the settlement terms will conclude all related matters with CarboMedics and preclude any future litigation on the matter in question. See Note 18 of "Notes to Consolidated Financial Statements" in this Form 10-K for more information regarding the CarboMedics litigation and settlement.

Amortization of Intangibles

Amortization expense has increased significantly during the last three fiscal years and is attributable to amortization of the definite-lived intangible assets acquired in our June 2007 purchase of the surgical cryoablation business of CryoCath and our September 2006 acquisition of 3F. See Note 2 of "Notes to Consolidated Financial Statements" in this Form 10-K for more information regarding these business acquisitions. Amortization expense for both 2008 and 2007 also includes amortization of our pyrolytic carbon technology license with CarboMedics. See Note 6 of "Notes to Consolidated Financial Statements" in this Form 10-K for more information regarding the CarboMedics technology license and its change in status from an indefinite-lived to a definite-lived intangible asset. We estimate amortization expense for 2009 to total approximately $3.2 million.

Impairment of Intangibles

We made licensing fee and development milestone payments to ErySave AB ("ErySave"), a Swedish research firm, under an exclusive development and licensing agreement, executed in 2004, for worldwide rights to ErySave's PARSUS filtration technology for cardiac surgery procedures. In July 2007, we were informed that ErySave was in the process of declaring bankruptcy and they could not continue development work. Accordingly, the $0.8 million ErySave license payments intangible asset was written off in the second quarter of 2007.

Distributor Termination Expense

In the fourth quarter of 2006, we executed agreements with an international distributor in Europe providing for the termination of the distributor, the conversion of the distributor to a commissioned sales representative effective January 1, 2007 and our buy-back of the distributor's remaining inventory stock. Termination payments to the distributor totaled approximately $0.7 million and were accrued by the Company at December 31, 2006 and paid in 2007.

Net Interest Expense

Net interest expense for 2008 and 2007 increased $0.9 million and $0.2 million, respectively, over the comparable prior year periods. The 2008 increase was attributable in large part to a decrease in interest income on declining

cash and investment balances during 2008. Interest income in 2008, 2007 and 2006 was $0.2 million, $0.7 million and $0.7 million, respectively, and was attributable to the short-term investment of our cash balances.

Contributing to both the 2008 and 2007 increases in net interest expense was interest on the June 2007 $8.6 million Term Loan ("Term Loan") with Silicon Valley Bank obtained in connection with the CryoCath asset acquisition. See "Liquidity and Capital Resources-Financing Activities" below for a detailed discussion of the Term Loan.

Net interest expense also includes interest on $22.4 million aggregate principal amount of 6% Convertible Senior Notes ('Notes") issued in 2005. Interest expense on these Notes was $1.8 million, $1.9 million and $2.1 million in 2008, 2007 and 2006, respectively, and includes amortization of (1) financing costs, (2) the discount related to the implied value of common stock warrants sold with the Notes, and (3) the discounts related to the bifurcated Convertible Senior Notes derivatives. See Note 7 of "Notes to Consolidated Financial Statements" in this Form 10-K for more information regarding the Notes.

Net Other Income

The following table summarizes our net other income for the years ended December 31, 2008, 2007 and 2006:

	Year ended December 31:		
(in thousands)	2008	2007	2006
Alta warrant liability gain (loss)	$243	($652)	$ -
Convertible Senior Notes derivative liability gain	51	98	1,528
Net realized foreign currency transaction gains	472	303	-
Unrealized foreign currency gain (loss) related to short-term intercompany balances with foreign subsidiaries	(353)	312	-
Net other income	$413	$ 61	$1,528

In our June 2007 private equity placement in connection with the acquisition of the surgical cryoablation business of CryoCath, we sold to Alta 9,800,000 shares of our common stock and a seven-year warrant to purchase up to 1,960,000 shares of our common stock at an exercise price of $1.65 per share. The Company was required to treat the warrant as a liability pending approval of its shareholders at the Company's 2008 annual meeting of shareholders to provide shares of common stock issuable to Alta upon exercise of the warrant. Accordingly, the fair value of the warrant was recorded as a liability on the date of issuance and marked-to-market at each quarter-end. At the annual meeting of shareholders on May 8, 2008, we received shareholder approval to issue shares of our common stock upon exercise of the warrant. Consequently, the warrant liability was marked-to-market through the date of shareholder approval and the remaining liability was credited to additional paid-in capital.

Since 2005 we have recorded non-operating other income for the change in fair value of the Convertible Senior Notes derivative liability. The large decline in this other income in 2007 as compared to 2006 relates to the elimination of the largest of the embedded derivatives in the Notes (the conversion feature derivative), which was no longer required to be accounted for as a derivative after our authorized shares were increased at our 2006 Annual Meeting of Shareholders in September 2006. See Note 7 of "Notes to Consolidated Financial Statements" in this Form 10-K for more information regarding the Notes derivative liability and our accounting for the related derivative financial instruments under SFAS No.133, *Accounting for Derivative Instruments and Hedging Activities.*

Net other income also includes net foreign currency transaction gains and losses, including unrealized foreign currency gains and losses related to short-term intercompany balances with foreign subsidiaries. These gains and losses have increased in 2007 and 2008 due to larger fluctuations in foreign currency exchange rates.

Income Taxes

In 2008 we recognized $0.5 million of income tax expense related to 1) deferred income taxes connected with the deductibility of goodwill from the CryoCath acquisition for tax purposes, but not for book purposes, and the uncertainty of the timing of its reversal for book purposes, 2) current income taxes for our Austrian subsidiary and 3) an estimated provision for taxes resulting from open international tax audits. In future years, we will continue recognizing deferred income tax expense related to the CryoCath goodwill over its tax life as long as there is no impairment of the goodwill's recorded value.

Through 2008 we have accumulated approximately $161 million of net operating loss ("NOL") carryforwards for U.S. tax purposes ($57 million related to 3F). We believe our ability to fully utilize the existing NOL carryforwards could be restricted on a portion of the NOL by changes in control that may have occurred or may occur in the future and by our ability to generate net income. We are conducting a formal study of whether, or to what extent, past changes in control of ATS impairs our NOL carryforwards. We have recorded no deferred tax asset related to our NOL carryforwards and other deferred items as we currently cannot determine that it is more likely than not that this asset will be realized and we, therefore, have provided a valuation allowance for the entire asset.

Net Loss

Our net losses in 2008, 2007 and 2006 were $19.3 million, $23.0 million and $27.7 million, respectively. Our decrease in net loss in 2008 compared to 2007 was due to higher sales and gross profit and the absence of acquisition-related IPR&D in 2008, partially offset by higher operating expenses and settlement of the CarboMedics litigation, all of which are described in detail above. Our decrease in net loss in 2007 compared to 2006 was due primarily to lower IPR&D charges in 2007. This was partially offset by higher operating expenses, which increased more than net sales and gross profit, and to lower non-operating other income for 2007, all of which are described in detail above.

Liquidity and Capital Resources

Cash, cash equivalents, and short-term investments totaled $20.9 million and $14.7 million at December 31, 2008 and December 31, 2007, respectively.

Operating Activities

During 2008, we received cash payments from customers of approximately $62.5 million and made payments to employees and suppliers of approximately $72.0 million. During 2007, we received cash payments from customers of approximately $50.7 million and made payments to employees and suppliers of approximately $59.6 million. Since 2002, we have incurred significant expenses to support the commercialization of ATS products both in the United States and international markets, have invested in new products and technologies and have completed strategic acquisitions and business partnerships to diversify our product portfolio. As we grow sales in future periods, better leverage our operating expenses and continue to drive declines in our product manufacturing costs, we believe our operating losses will continue to decrease and we will move toward a cash flow breakeven on sales and eventually to full-year profitability.

Investing Activities

We purchased leasehold improvements, property and equipment totaling $1.4 million, $0.7 million and $1.2 million during 2008, 2007 and 2006, respectively. A significant portion of our capital spending in 2008 was related to the addition of a surgical cryoablation production clean room at our Plymouth, Minnesota location following our June 2007 acquisition of the surgical cryoablation business of CryoCath.

Our major investing activity since the beginning of 2007 was the acquisition of the assets of the surgical cryoablation business of CryoCath in June 2007. We paid $22 million at the closing (subsequently reduced by $0.9 million) and paid approximately $1.8 million in transaction costs. In June and August 2008, we paid to CryoCath contingent acquisition payments totaling $2.0 million due upon the successful transition of manufacturing operations from CryoCath to us. See Note 2 of "Notes to Consolidated Financial Statements" in this Form 10-K for additional details regarding this acquisition.

We also invested $0.3 million in 2007 for the purchase of patents, patent rights and other intellectual property. See Note 6 of "Notes to Consolidated Financial Statements" in this Form 10-K for more information regarding these intangible asset purchases.

Financing Activities

During 2008, we raised $23.9 million from the issuance of our common stock, including $19.8 million received in connection with a December 2008 private placement sale of 8,510,639 shares of our common stock and issuance of warrants to purchase 2,533,192 shares of our common stock. The warrants are exercisable at $2.475 per share during the first year after the closing of the stock sale, $2.85 per share during the second year, and $3.10 thereafter. We also received $3.2 million upon the June 2008 exercise of a warrant on 1,960,000 shares of our common stock issued in connection with the June 2007 private placement discussed below. We received net

proceeds of approximately $0.8 million during 2008 from other issuances of common stock, primarily through exercises of stock options and warrants as well as purchases under our employee stock purchase plan.

During 2007, we raised $30.6 million, net of offering costs, through two private placement sales of our common stock. The first, in March 2007, raised $15.3 million, net of offering costs, through the sale of 8,125,000 shares of our common stock at a price of $2.00 per share and warrants to purchase 3,250,000 shares of our common stock at an exercise price of $2.40 per share. The second, in June 2007, raised $15.3 million, net of offering costs, through the sale of 9,800,000 shares of our common stock at a price of $1.65 per share and a seven-year warrant to purchase up to 1,960,000 shares of our common stock at an exercise price of $1.65 per share, as further described in Note 5 of "Notes to Consolidated Financial Statements" in this Form 10-K. We also received net proceeds of $0.7 million during 2007 from the issuance of common stock through exercises of stock options and purchases under our employee stock purchase plan.

On June 29, 2008, we entered into a Subordinated Credit Agreement ("Credit Agreement") with Theodore C. Skokos, a member of our Board of Directors, for a two-year, $5 million Revolving Credit Facility ("Credit Facility"). Advances under the Credit Facility will carry interest at 15% per annum payable quarterly. The Credit Facility also carries an annual commitment fee of 1% of the average unused Revolving Commitment Amount, payable annually. Our obligations to Mr. Skokos under the Credit Agreement are subordinate to (1) our obligations to the holders of the Company's 6% Convertible Senior Notes due 2025 issued in October 2005 and (2) our obligations to Silicon Valley Bank. All assets are pledged as collateral on the Credit Facility. At December 31, 2008, no amounts had been drawn under the Credit Facility.

In connection with the execution of the Credit Agreement, we issued to Mr. Skokos a warrant to purchase 245,098 shares of our common stock at $2.04 per share until June 29, 2015. In July 2008, Mr. Skokos exercised this warrant in full and we received $0.5 million from the exercise. We are obligated to issue additional seven-year warrants to Mr. Skokos in the future based on the total amount of advances under the Credit Facility. The maximum number of additional shares issuable pursuant to warrants issued under the Credit Facility is 490,196 shares (not including the warrant issued upon execution of the Credit Agreement), which represents 20% of the maximum amount of advances under the $5 million Credit Facility divided by the $2.04 warrant exercise price.

Since 2004 we have maintained a Loan and Security Agreement ("Loan Agreement") with Silicon Valley Bank ("Bank"). Under the Loan Agreement, as amended, all ATS assets are pledged as collateral and we are subject to certain financial covenants. In June 2007, we entered into an Amendment to the Loan Agreement ("June 2007 Amendment") whereby the Bank provided for an $8.6 million Term Loan, which we used to repay then outstanding term loans and advances from the Bank and to purchase the surgical cryoablation business from CryoCath. Under the Term Loan, as amended, we made monthly payments of interest only from July 2007 through March 2008, and we began making monthly payments of principal plus interest effective April 2008 and continuing until June 2011. We have the right to prepay all, but not less than all, of the outstanding Term Loan at any time so long as no event of default has occurred. Interest on the Term Loan accrues at a fixed rate per annum of 9.5%, equal to 1.25% above the Prime Rate in effect as of the funding date of the Term Loan.

The June 2007 Amendment also made certain changes to the liquidity ratio covenant set forth in the Loan Agreement, as amended. The liquidity ratio was changed to require that we maintain, at all times, on a consolidated basis, a ratio of (1) the sum of (a) our unrestricted cash (and equivalents) on deposit with the Bank plus (b) 50% of the our accounts receivable arising form the sale or lease of goods, or provision of services, in the ordinary course of business, divided by (2) our indebtedness to the Bank for borrowed money, of equal to or greater than 1.4 to 1.0. On June 30, 2008, the Company entered into an Amendment to the Loan Agreement whereby, for the balance of 2008, the 1.4 to 1.0 required liquidity ratio was reduced to 1.1 to 1.0 for intra-quarter months only. The liquidity ratio remains at 1.4 to 1.0 for quarter-end months and will revert to 1.4 to 1.0 for all months beginning in 2009. On December 19, 2008, we entered into an Amendment to the Loan Agreement ("December 2008 Amendment") whereby the liquidity ratio was raised to 2.0 to 1.0 until the payment of a $4.5 million litigation settlement payment is made to CarboMedics on April 30, 2009, and a related security interest granted to CarboMedics is released. Upon such payment, the Bank has agreed to return the liquidity ratio requirement to 1.4 to 1.0. In addition, the December 2008 Amendment requires us to maintain at least $4.5 million on deposit with the Bank at all times until the litigation settlement payment of $4.5 million is made in April 2009. As of December 31, 2008, we were in compliance with all financial covenants set forth in the Loan Agreement, as amended.

In October 2005, we sold a combined $22.4 million aggregate principal amount of 6% Convertible Senior Notes due in 2025, warrants to purchase 1,344,000 shares of our common stock ("Warrants") and certain embedded derivatives. The Warrants are exercisable at $4.40 per share and expire in 2010. We used the proceeds from the Notes for general corporate purposes, working capital, capital expenditures and to fund business development opportunities. Interest on the Notes is due semi-annually in April and October. The Notes are convertible into

common stock at any time at a fixed conversion price of $4.20 per share, subject to certain adjustments. If fully converted, the Notes would convert into approximately 5,333,334 shares of our common stock. We have the right to redeem the Notes at 100% of the principal amount plus accrued interest at any time on or after October 20, 2008, and the investors have the right to require us to repurchase the Notes at 100% of the principal amount plus accrued interest on October 15 in 2010, 2015 and 2020. See Note 7 of "Notes to Consolidated Financial Statements" in this Form 10-K for a full description of the terms and provisions of the Notes.

Cash Management

We estimate that operating costs will remain high in comparison to sales during 2009 and will require the use of cash to fund operations. Based upon the current forecast of sales and operating expenses, we anticipate having cash to fund our operations. However, we may need to raise additional cash in or after 2009 to fund our strategic investments or to opportunistically add accretive products to our distribution network. As identified in Item 1A of this Form 10-K, global economic turmoil may adversely impact our revenue, access to the capital markets or future demand for our products will affect our long-term viability. Over 60% of our revenue is derived from markets outside the United States and this revenue may be adversely impacted by large swings in foreign currency exchange rates and the availability of credit for our distributors in emerging markets. Maintaining adequate levels of working capital depends in part upon the success of our products in the marketplace, the relative profitability of those products and our ability to control operating and capital expenses.

Funding of our operations in future periods may require additional investments in ATS in the form of equity or debt. Any sale of additional equity or issuance of debt securities may result in dilution to our stockholders, and we cannot be certain that additional public or private financing will be available in amounts or on terms acceptable to us, or at all. If we are unable to obtain this additional financing when needed, we may be required to delay, reduce the scope of, or eliminate one or more aspects of our business development activities, which could harm the growth of our business.

Off-Balance Sheet Arrangements

We do not have any "off-balance sheet arrangements" (as such term is defined in Item 303 of Regulation S-K) that are reasonably likely to have a current or future effect on our financial condition, changes in financial condition, revenues or expenses, operating results, liquidity, capital expenditures or capital resources.

Contractual Obligations

The following table sets forth our future payment obligations:

	Payments Due By Period				
(in thousands)	Total	Less Than 1 year	1-3 Years	3-5 Years	More Than 5 Years
Convertible notes payable (1)	$45,248	$ 1,344	$4,032	$4,032	$35,840
Bank notes payable (1)	7,516	3,197	4,319	-	-
Operating leases	1,158	827	331	-	-
Total	$53,922	$ 5,368	$8,682	$4,032	$35,840

(1) Includes interest payments.

Cautionary Statements

This document contains forward-looking statements within the meaning of federal securities laws that may include statements regarding intent, belief or current expectations of ATS and our management. The Private Securities Litigation Reform Act of 1995 provides a "safe harbor" for forward-looking statements to encourage companies to provide prospective information without fear of litigation so long as those statements are identified as forward-looking and are accompanied by meaningful cautionary statements identifying important factors that could cause actual results to differ materially from those projected in the statement. We desire to take advantage of these "safe harbor" provisions. Accordingly, we have identified in Item 1A of this Form 10-K important risk factors which could cause our actual results to differ materially from any such results which may be projected, forecast, estimated or budgeted by us in forward-looking statements made by us from time to time in reports, proxy statements, registration statements and other written communications, or in oral forward-looking statements

made from time to time by our officers and agents. We do not intend to update any of these forward-looking statements after the date of this Form 10-K to conform them to actual results.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

The primary objective of our investment activities is to preserve principal while at the same time maximizing the income we receive from our investments without significantly increasing risk. Some of the securities that we invest in may have market risk. This means that a change in prevailing interest rates may cause the fair market value of the principal amount of the investment to fluctuate. For example, if we hold a security that was issued with a fixed interest rate at the then prevailing rate and the prevailing interest rate later rises, the fair value of the principal amount of our investment will probably decline. To minimize this risk, our portfolio of cash equivalents and short-term investments may be invested in a variety of securities, including commercial paper, money market funds, and both government and non-government debt securities. The average duration of all our investments has generally been less than one year. Due to the short-term nature of these investments, we believe we have no material exposure to interest rate risk arising from our investments.

In the United States, the United Kingdom, France, Germany, Belgium, the Netherlands and Switzerland, we sell our products directly to hospitals. In other international markets, we sell our products to independent distributors who, in turn, sell to medical hospitals. Loss, termination, or ineffectiveness of distributors to effectively promote our product would have a material adverse effect on our financial condition and results of operations.

Transactions with U.S. and non-U.S. customers and distributors, other than in our direct selling markets in Europe, are entered into in U.S. dollars, precluding the need for foreign currency hedges on such sales. Sales through our French and German subsidiaries, as well as through our European export company to Belgium and the Netherlands, are in Euros. Sales to the United Kingdom and Switzerland are made through our European export company and are denominated in pounds and Swiss francs, respectively. Therefore, we are subject to profitability risk arising from exchange rate movements. We have not used foreign exchange contracts or similar devices to reduce this risk. We will evaluate the need to use foreign exchange contracts or similar devices if sales in our European direct markets increase substantially.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

Our Consolidated Financial Statements and the reports of our registered public accounting firm are included in this Form 10-K beginning on page F-1. The index to these reports and the financial statements is included in Item 15 below.

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

Not Applicable.

ITEM 9A. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

We maintain disclosure controls and procedures, which are designed to ensure that information required to be disclosed in the reports we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms, and that such information is accumulated and communicated to our management, including our chief executive officer, or CEO, and chief financial officer, or CFO, as appropriate to allow timely decisions regarding required disclosure.

Under the supervision and with the participation of our management, including our CEO and CFO, we evaluated the effectiveness of the design and operation of our disclosure controls and procedures (as defined in Rule 13a-15(e) under the Exchange Act) as of the end of the period covered by this annual report. Based on that evaluation, our management, including the CEO and CFO, concluded that our disclosure controls and procedures were effective as of December 31, 2008.

Management's Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Exchange Act Rule 13a-15(f). Our internal control system was designed to provide reasonable assurance to our management and Board of Directors regarding the preparation and fair presentation of our published financial statements. All internal control systems, no matter how well designed, have inherent limitations. Therefore, even those systems determined to be effective can provide only reasonable assurance with respect to financial statement preparation and presentation.

Under the supervision and with the participation of our management, including our CEO and CFO, we conducted an evaluation of the effectiveness of our internal control over financial reporting based on the framework in "Internal Control — Integrated Framework" issued by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO"). Based on our evaluation under the framework in "Internal Control — Integrated Framework," our management concluded that our internal control over financial reporting was effective as of December 31, 2008.

The effectiveness of our internal control over financial reporting as of December 31, 2008, has been audited by Grant Thornton LLP, the independent registered public accounting firm who also has audited our consolidated financial statements as of and for the year ended December 31, 2008, included in this Form 10-K. Grant Thornton's attestation report on the effectiveness of our internal control over financial reporting appears on page F-2 of this Form 10-K.

Changes in Internal Control Over Financial Reporting

There have been no changes in our internal control over financial reporting (as defined in Rule 13a-15(f) under the Exchange Act) during the fiscal quarter ended December 31, 2008 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

ITEM 9B. OTHER INFORMATION

None.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

See Item 1 of this Form 10-K for certain information regarding our executive officers.

Reference is made to information contained under the headings "Proposal 1 - Election of Directors," "Committees of the Board of Directors and Attendance," "Nominations," and "Section 16(a) Beneficial Ownership Reporting Compliance" in our definitive proxy statement for our 2009 Annual Meeting of Shareholders to be filed with the SEC on or before April 30, 2009 (our "2009 Proxy Statement"), which information is incorporated herein.

In 2004, we adopted a Code of Conduct for our employees, including our principal executive officer, principal financial officer and principal accounting officer, which is posted on our website (www.atsmedical.com). We intend to satisfy the disclosure requirement under Item 5.05 of Form 8-K regarding an amendment to, or waiver from, a provision of the Code of Conduct by posting such information on our website at the address specified above.

ITEM 11. EXECUTIVE COMPENSATION

Reference is made to information contained under the headings "Executive Compensation" and "Compensation of Directors" in our 2009 Proxy Statement, which information is incorporated herein.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

Reference is made to information contained under the headings "Security Ownership of Certain Beneficial Owners and Management" in our 2009 Proxy Statement, which information is incorporated herein.

The following table summarizes, as of December 31, 2008, the shares of our common stock subject to outstanding awards or available for future awards under our equity compensation plans and arrangements.

Plan category	Number of securities to be issued upon exercise of outstanding options, warrants and rights	Weighted-average exercise price of outstanding options, warrants and rights	Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in the first column)
Equity compensation plans approved by security holders.....	4,323,393	$ 0.66	4,156,748 (1)
Equity compensation plans not approved by security holders.....	1,503,200	$ 2.77	— (2)
Total	5,826,593	$ 1.21	4,156,748

(1) Includes shares remaining available under the Plan (3,941,761 shares) and the 1998 Employee Stock Purchase Plan (214,987 shares).

(2) Nearly all of the 1,503,200 shares listed consist of individual stock options granted to new executives or employees as an inducement to their employment with us. These options have an exercise price equal to the fair market value of our common stock at the time of the grant, and vest ratably over two to four year periods. Most of the options have a life of 10 years and vesting accelerates upon a change of control of ATS Medical. We intend that these options shall not be incentive stock options governed by the provisions of Section 422 of the Internal Revenue Code.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

Reference is made to information contained under the headings "Director Independence" and "Related Person Transaction Policy" in our 2009 Proxy Statement, which information is incorporated herein.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

Reference is made to information contained under the heading "Independent Registered Public Accounting Firm Fees" in our 2009 Proxy Statement , which information is incorporated herein.

PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

Financial Statements

Our Consolidated Financial Statements and the Independent Registered Public Accounting Firm's Reports thereon are included herein (page numbers refer to pages following the signature page of this Annual Report on Form 10-K):

Financial Statement Schedules

ATS MEDICAL, INC.
SCHEDULE II - VALUATION AND QUALIFYING ACCOUNTS AND RESERVES
(in thousands)

Description	Balance at Beginning of Period	Additions - Charged to Costs and Expenses	Additions - Charged to Other Accounts - Describe		Deductions - Describe		Balance at End of Period
Valuation Accounts:							
Deducted from asset accounts:							
Year ended December 31, 2008:							
Allowance for doubtful accounts	$225	$224	$ -		$ (85)	(1)	$364
Allowance for obsolete inventories	491	669	211	(2)	(594)	(3)	777
Year ended December 31, 2007:							
Allowance for doubtful accounts	537	250	-		(562)	(1)	225
Allowance for obsolete inventories	608	(117)	-		-		491
Year ended December 31, 2006:							
Allowance for doubtful accounts	360	493	11	(6)	(327)	(1)	537
Allowance for obsolete inventories	215	50	436	(5)	(93)	(4)	608

(1) Uncollectible accounts written off, net of recoveries.
(2) Adjustments for standard manufacturing cost increases to keep net carrying value of reserved-for inventories at zero.
(3) Obsolete inventory disposals.
(4) Changes in estimate recovered through a reduction in expenses.
(5) Obsolescence reserve for inventories recorded in connection with the purchase accounting for the 3F acquisition.
(6) Allowance for doubtful accounts recorded in connection with the purchase accounting for the 3F acquisition.

All other schedules have been omitted because of absence of conditions under which they are required or because the required information is included in the financial statements or notes thereto.

Exhibits

Exhibit Number	Description
2.1**	Agreement and Plan of Merger, dated as of January 23, 2006, by and among ATS Medical, Inc., Seabiscuit Acquisition Corp., 3F Therapeutics, Inc. and Boyd D. Cox, as Stockholder Representative (Incorporated by reference to Exhibit 10.1 of the Company's Current Report on Form 8-K filed on January 26, 2006).
2.2	Amendment No. 1 to Agreement and Plan of Merger, dated as of June 13, 2006, by and among ATS Medical, Inc., Seabiscuit Acquisition Corp., 3F Therapeutics, Inc. and Boyd D. Cox, as Stockholder Representative (Incorporated by reference to Exhibit 2.1 to the Company's Current Report on Form 8-K filed on June 19, 2006).
2.3	Amendment No. 2 to Agreement and Plan of Merger, dated as of August 10, 2006, by and among the Company, Seabiscuit Acquisition Corp., 3F Therapeutics, Inc. and Boyd D. Cox, as Stockholder Representative (Incorporated by reference to Exhibit 2.1 to the Company's Current Report on Form 8-K filed on August 15, 2006).
2.4	Escrow Agreement, effective as of September 29, 2006, by and among the Company, Boyd D. Cox, as Stockholder Representative and Wells Fargo Bank, N.A. (Incorporated by reference to Exhibit 2.4 to the Company's Annual Report on Form 10-K for the year ended December 31, 2006).
2.5**	Option and Asset Purchase Agreement, dated as of May 31, 2005, by and among ATS Medical, Inc., em Vascular, Inc., Keith L. March, M.D., John Hauck, Walter L. Sembrowich and James E. Shapland II (Incorporated by reference to Exhibit 2.5 to the Company's Annual Report on Form 10-K for the year ended December 31, 2006).
2.6	Letter Amendment, dated as of November 29, 2006, to the Option and Asset Purchase Agreement, dated as of May 31, 2005, by and among ATS Medical, Inc., em Vascular, Inc., Keith L. March, M.D., John Hauck, Walter L. Sembrowich and James E. Shapland II, (Incorporated by reference to Exhibit 2.6 to the Company's Annual Report on Form 10-K for the year ended December 31, 2006).
2.7**	Asset Purchase Agreement dated June 18, 2007 by and between ATS Medical, Inc. and CryoCath Technologies Inc. (Incorporated by reference to Exhibit 2.1 to the Company's Current Report on Form 8-K filed on June 25, 2007).
3.1	Third Restated Articles of Incorporation of ATS Medical, Inc. (Incorporated by reference to Exhibit 3.1 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 28, 2008 (the "June 2008 Form 10-Q")).
3.2	Bylaws of the Company, as amended February 13, 2007 (Incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed on February 20, 2007).
4.1	Specimen certificate for shares of common stock of the Company (Incorporated by reference to Exhibit 4.1 to the Company's Annual Report on Form 10-K for the year ended December 31, 1997 (the "1997 Form 10-K")).
4.2	Indenture, dated as of October 7, 2005, between ATS Medical, Inc. and Wells Fargo Bank, National Association, as Trustee (Incorporated by reference to Exhibit 4.1 of the Company's Current Report on Form 8-K filed on October 12, 2005 (the "October 12, 2005 Form 8-K")).
4.3	First Supplemental Indenture, dated October 13, 2005, to the Indenture dated as of October 7, 2005, by and between ATS Medical, Inc. and Wells Fargo Bank, National Association, as Trustee (Incorporated by reference to Exhibit 4.3 of the Company's October 18, 2005 Form 8-K).
4.4	Form of 6% Convertible Senior Notes due 2025 (Incorporated by reference to Exhibit 4.1 of the Company's Current Report on Form 8-K filed on October 18, 2005 (the "October 18, 2005 Form 8-K")).

4.5	Form of Warrant (Incorporated by reference to Exhibit 4.2 of the Company's October 18, 2005 Form 8-K).
4.6	Form of Warrant (Incorporated by reference to Exhibit 10.3 to the Company's Current Report on Form 8-K filed on March 16, 2007).
4.7	Warrant, dated June 28, 2007, issued by ATS Medical, Inc. to Alta Partners VIII, L.P. (Incorporated by reference to Exhibit 10.4 to the Company's Current Report on Form 8-K filed on July 5, 2007).
4.8	Warrant, dated June 29, 2008, issued to Theodore C. Skokos (Incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed on July 2, 2008 (the "July 2008 Form 8-K")).
4.9	Form of Warrant, dated December 19, 2008, issued by ATS Medical, Inc. to each of the Investors (Incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed on December 23, 2008 (the "December 2008 Form 8-K")).
10.1*	1987 Stock Option and Stock Award Plan, as restated and amended to date (Incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 1997).
10.2*	ATS Medical, Inc. 2000 Stock Incentive Plan, as amended (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on May 13, 2008).
10.3	Lease Agreement between the Company and Crow Plymouth Land Limited Partnership dated December 22, 1987 (Incorporated by reference to Exhibit 10(d) to the Company's Registration Statement on Form S-18, File No. 33-34785-C (the "Form S-18")).
10.4	Amendment No. 1 to Lease Agreement between the Company and Crow Plymouth Land Limited Partnership, dated January 5, 1989 (Incorporated by reference to Exhibit 10(e) to the Form S-18).
10.5	Amendment No. 2 to Lease Agreement between the Company and Crow Plymouth Land Limited Partnership, dated January 1989 (Incorporated by reference to Exhibit 10(f) to the Form S-18).
10.6	Amendment No. 3 to Lease Agreement between the Company and Crow Plymouth Land Limited Partnership, dated June 14, 1989 (Incorporated by reference to Exhibit 10(g) to the Form S-18).
10.7	Amendment No. 4 to Lease Agreement between the Company and Plymouth Business Center Limited Partnership, dated February 10, 1992 (Incorporated by reference to Exhibit 10.8 to the Company's Annual Report on Form 10-K for the year ended December 31, 1996 (the "1996 Form 10-K")).
10.8	O.E.M. Supply Contract dated September 24, 1990, with CarboMedics, Inc. (Incorporated by reference to Exhibit 10.10 to the 1996 Form 10-K).
10.9	License Agreement dated September 24, 1990, with CarboMedics, Inc. (Incorporated by reference to Exhibit 10.11 to the 1996 Form 10-K).
10.10*	Employment Agreement between the Company and Michael D. Dale dated September 18, 2002 (Incorporated by reference to Exhibit 10.12 to the Company's Form 10-K for the year ended 2002 (the "2002 Form 10-K")).
10.11	Reserved.
10.12	Amendment 1 to License Agreement dated December 16, 1993, with CarboMedics, Inc. (Incorporated by reference to Exhibit 10.17 to the Company's Annual Report on Form 10-K for the year ended December 31, 1993 (the "1993 Form 10-K)).

10.13	Amendment 4 to O.E.M. Supply Contract dated December 16, 1993, with CarboMedics, Inc. (Incorporated by reference to Exhibit 10.18 to the 1993 Form 10-K).
10.14	Amendment 5 to O.E.M. Supply Contract dated September 1, 1994, with CarboMedics, Inc. (Incorporated by reference to Exhibit 10.19 to the Company's Annual Report on Form 10-K for the year ended December 31, 1994 (the "1994 Form 10-K)).
10.15	Letter Agreement between the Company and Sulzer CarboMedics, Inc., dated June 27, 2002 (Incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 20, 2002).
10.16	Form of International Distributor Agreement (Incorporated by reference to Exhibit 10.22 to the 1994 Form 10-K).
10.17	Amendment No. 5 to Lease Agreement between the Company and St. Paul Properties, Inc., dated May 30, 1996 (Incorporated by reference to Exhibit 10.22 to the 1996 Form 10-K).
10.18	Amendment No. 6 to Lease Agreement between the Company and St. Paul Properties, Inc., dated November 25, 1997 (Incorporated by reference to Exhibit 10.23 to the 1997 Form 10-K).
10.19	1998 Employee Stock Purchase Plan, as amended through September 25, 2006 (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on September 29, 2006).
10.20	Carbon Agreement by and between Sulzer CarboMedics, Inc. and ATS Medical, Inc., dated December 29, 1999 (Incorporated by reference to Exhibit 99.1 to the Current Report on Form 8-K filed on January 13, 2000 (the "January 2000 Form 8-K").
10.21	Amendment 7 to OEM Supply Contract by and between Sulzer CarboMedics, Inc. and ATS Medical, Inc., dated December 29, 1999 (Incorporated by reference to Exhibit 99.2 to the January 2000 Form 8-K).
10.22	Amendment 2 to License Agreement by and between Sulzer CarboMedics, Inc. and ATS Medical, Inc., dated December 29, 1999 (Incorporated by reference to Exhibit 99.3 to the January 2000 Form 8-K).
10.23	Amendment No. 7 to Lease Agreement between the Company and St. Paul Properties, Inc., dated May 18, 2000 (Incorporated by reference to Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2000).
10.24	Lease Agreement between the Company and St. Paul Properties, Inc., dated April 29, 2000 (Incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2000).
10.25	Amendment No. 8 to Lease Agreement between the Company and St. Paul Properties, Inc., dated December 14, 2000 (Incorporated by reference to Exhibit 10.32 to the Company's Annual Report on Form 10-K for the year ended December 31, 2000 (the "2000 Form 10-K")).
10.26	Amendment 8 to OEM Supply Contract by and between Sulzer CarboMedics, Inc. and ATS Medical, Inc., dated November 3, 2000 (Incorporated by reference to Exhibit 10.33 to the 2000 Form 10-K).
10.27	Form of U.S. Distribution Agreement (Incorporated by reference to Exhibit 10.34 to the 2002 Form 10-K).
10.28	Amendment No. 9 to Lease Agreement between the Company and St. Paul Properties, Inc., dated September 8, 2003 (Incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2003).
10.29*	Form of Employee Stock Option Agreement under the company's 2000 Stock Incentive Plan (Incorporated by reference to Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2004 (the "September 2004 Form 10-Q")).

10.30*	Form of Non-Qualified Stock Option Agreement under the Company's 2000 Stock Incentive Plan (Incorporated by reference to Exhibit 10.3 to the Company's September 2004 Form 10-Q).
10.31*	Form of Non-Plan Non-Qualified Stock Option Agreement (Incorporated by reference to Exhibit 10.4 to the Company's September 2004 Form 10-Q).
10.32	Reserved.
10.33	Credit Agreement between Silicon Valley Bank and the Company, dated July 28, 2004 (Incorporated by reference to Exhibit 10.1 to the Company's September 2004 Form 10-Q).
10.34	Amendment No. 10 to Lease Agreement between the Company and St. Paul Properties, Inc. dated as of October 1, 2004 (Incorporated by reference to Exhibit 10.40 to the Company's Annual Report on Form 10-K for the year ended December 31, 2004 (the "2004 Form 10-K")).
10.35	Letter Agreement between the Company and Centerpulse USA Holding Co. dated July 9, 2003 (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on September 26, 2003).
10.36	Reserved.
10.37	Reserved.
10.38	Exclusive Development, Supply and Distribution Agreement with Genesee BioMedical, Inc., dated June 23, 2005 (Incorporated by reference to Exhibit 10.44 of the 2005 Form 10-K).
10.39	Amendment Agreement, dated March 24, 2005, to the Credit Agreement between Silicon Valley Bank and the Company, dated July 28, 2004 (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on March 30, 2005).
10.40	Securities Purchase Agreement, dated as of October 6, 2005, by and among ATS Medical, Inc. and the Buyers listed on the Schedule of Buyers attached thereto as Exhibit A (Incorporated by reference to Exhibit 10.1 of the Company's October 12, 2005 Form 8-K).
10.41	Amendment No. 1, dated October 12, 2005, to the Securities Purchase Agreement by and among ATS Medical, Inc. and the Buyers listed therein, dated as of October 6, 2005 (Incorporated by reference to Exhibit 10.1 of the Company's October 18, 2005 Form 8-K).
10.42	Registration Rights Agreement, dated as of October 7, 2005, by and among ATS Medical, Inc. and the Buyers listed on the Schedule of Buyers attached thereto as Exhibit A (Incorporated by reference to Exhibit 10.2 of the Company's October 12, 2005 Form 8-K).
10.43	Amendment No. 1, dated October 13, 2005, to the Registration Rights Agreement by and among ATS Medical, Inc. and the Buyers, as defined therein, dated as of October 7, 2005 (Incorporated by reference to Exhibit 10.2 of the Company's October 18, 2005 Form 8-K).
10.44	Warrant Agent Agreement, dated as of October 7, 2005, between ATS Medical, Inc. and Wells Fargo Bank, National Association, as Warrant Agent (Incorporated by reference to Exhibit 10.3 of the Company's October 12, 2005 Form 8-K).
10.45*	Form of Lock-Up Agreement with Executive Officers (Incorporated by reference to Exhibit 99.1 of the Company's Current Report on Form 8-K filed on December 29, 2005).
10.46*	Form of Restricted Stock Unit Agreement under the Company's 2000 Stock Incentive Plan (Incorporated by reference to Exhibit 10.53 of the 2005 Form 10-K).
10.47	Amendment, dated March 29, 2006, to the Loan and Security Agreement between Silicon Valley Bank and the Company, dated July 28, 2004 (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on April 3, 2006).
10.48*	Form of Change in Control Agreement executed by executive officers of the Company (Incorporated by reference to Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2006).

10.49	Exclusive Distribution Agreement, effective as of October 1, 2006, by and between the Company and Novare Surgical Systems, Inc. (Incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2006 (the "September 2006 Form 10-Q")).
10.50	Amendment No. 2 dated September 1, 2006, to Original Lease Agreement dated April 29, 2000, by and between the Company and St. Paul Properties, Inc. (Incorporated by reference to Exhibit 10.2 to the Company's September 2006 Form 10-Q).
10.51	Amendment No. 11 dated September 1, 2006, to Original Lease Agreement dated December 22, 1987, by and between the Company and St. Paul Properties, Inc. (Incorporated by reference to Exhibit 10.3 to the Company's September 2006 Form 10-Q).
10.52	Amendment, dated August 15, 2006, to the Loan and Security Agreement between Silicon Valley Bank and the Company, dated July 28, 2004 (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on August 17, 2006).
10.53	Reserved.
10.54	Reserved.
10.55*	Form of Restricted Stock Unit Award Agreement for awards to Non-Employee Directors under 2000 Stock Incentive Plan (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on February 20, 2007).
10.56	Amendment No. 4, dated February 15, 2007, to the Loan and Security Agreement between Silicon Valley Bank and the Company, dated July 28, 2004 (Incorporated by reference to the Company's Current Report on Form 8-K filed on February 23, 2007).
10.57	Securities Purchase Agreement, dated March 15, 2007, between the Company and Certain Investors (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on March 16, 2007).
10.58	Registration Rights Agreement, dated March 15, 2007, between the Company and Certain Investors (Incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed on March 16, 2007).
10.59	Confidential Separation and Release Agreement executed as of March 6, 2007 between Marc R. Sportsman and the Company (Incorporated by reference to Exhibit 10.5 to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2007).
10.60	Letter Agreement, dated June 7, 2007, by and among Endocare, Inc., CryoCath Technologies Inc. and ATS Medical, Inc. (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on June 25, 2007 (the "June 2007 Form 8-K")).
10.61	License Agreement, dated June 28, 2007, by and between ATS Acquisition Corp. and CryoCath Technologies Inc. (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on July 5, 2007 (the "July 2007 Form 8-K")).
10.62	Manufacturing Agreement, dated June 28, 2007, by and between ATS Acquisition Corp. and CryoCath Technologies Inc. (Incorporated by reference to Exhibit 10.2 to the July 2007 Form 8-K).
10.63	Termination Agreement, dated June 28, 2007, by and between ATS Medical, Inc. and CryoCath Technologies Inc. (Incorporated by reference to Exhibit 10.3 to the July 2007 Form 8-K).
10.64	Common Stock and Warrant Purchase Agreement, dated as of June 19, 2007, by and between ATS Medical, Inc. and Alta Partners VIII, L.P. (Incorporated by reference to Exhibit 10.2 to the June 2007 Form 8-K).
10.65	Registration Rights Agreement, dated June 28, 2007, by and between ATS Medical, Inc. and Alta Partners VIII, L.P. (Incorporated by reference to Exhibit 10.5 to the July 2007 Form 8-K).

10.66	Amendment, dated June 18, 2007, to the Loan and Security Agreement between Silicon Valley Bank and the Company dated July 28, 2004 (Incorporated by reference to Exhibit 10.3 to the June 2007 Form 8-K).
10.67*	2007 ATS Medical Management Incentive Compensation Plan (Incorporated by reference to Exhibit 10.9 of the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2007).
10.68	First Amendment, dated February 29, 2008, to the Loan and Security Agreement between Silicon Valley Bank and the Company dated July 28, 2004 (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on March 6, 2008 (the "March 2008 Form 8-K")).
10.69	Second Amendment, dated February 29, 2008, to the Loan and Security Agreement between Silicon Valley Bank and the Company dated July 28, 2004 (Incorporated by reference to Exhibit 10.2 to the March 2008 Form 8-K).
10.70	Unconditional Guaranty, dated February 29, 2008, entered into by 3F Therapeutics and ATS Acquisition Corp., in favor of Silicon Valley Bank (Incorporated by reference to Exhibit 10.3 to the March 2008 Form 8-K).
10.71	Security Agreement, dated February 29, 2008, by and between Silicon Valley Bank, 3F Therapeutics, Inc. and ATS Acquisition Corp. (Incorporated by reference to Exhibit 10.4 to the March 2008 Form 8-K).
10.72	Confidential Separation Agreement and Release, executed as of November 14, 2007, between Richard A. Curtis and ATS Medical, Inc. (Incorporated by reference to Exhibit 10.72 of the Company's Annual Report on Form 10-K for the year ended December 31, 2007).
10.73	Amendment No. 3 dated April 30, 2008, to Original Lease Agreement dated April 29, 2000, by and between the Company and St. Paul Properties, Inc. (Incorporated by reference to Exhibit 10.2 to the Company's June 2008 Form 10-Q).
10.74	2008 ATS Medical Management Incentive Compensation Plan (Incorporated by reference to Exhibit 10.3 to the Company's June 2008 Form 10-Q).
10.75	Subordinated Credit Agreement, dated June 29, 2008, by and between ATS Medical, Inc. and Theodore C. Skokos (Incorporated by reference to Exhibit 10.1 to the July 2008 Form 8-K).
10.76	Amendment, dated June 30, 2008, to the Loan and Security Agreement between Silicon Valley Bank and the Company dated July 28, 2004 (Incorporated by reference to Exhibit 10.3 to the July 2008 Form 8-K).
10.77	Common Stock and Warrant Purchase Agreement, dated December 19, 2008, by and between ATS Medical, Inc. and each of the Investors named therein (Incorporated by reference to Exhibit 10.1 to the December 2008 Form 8-K).
10.78	Registration Rights Agreement, dated December 19, 2008, by and between ATS Medical, Inc. and each of the Investors named therein (Incorporated by reference to Exhibit 10.3 to the December 2008 Form 8-K).
10.79	Amendment to and Consent, dated December 19, 2008, regarding Loan and Security Agreement between Silicon Valley Bank and the Company dated July 28, 2004, filed herewith.
10.80	Confidential Settlement and Mutual Release Agreement dated December 1, 2008, by and between CarboMedics, Inc. and ATS Medical, Inc., filed herewith.
10.81	2009 ATS Medical Management Incentive Compensation Plan (Incorporated by reference to Exhibit 99.2 to the Company's Current Report on Form 8-K filed on February 23, 2009).
21	List of Subsidiaries, filed herewith.

23.1	Consent of Grant Thornton LLP, filed herewith.
31.1	Certification of Chief Executive Officer pursuant to Rule 13a-14(a) and Rule 15d-14(a) of the Securities Exchange Act, filed herewith.
31.2	Certification of Chief Financial Officer pursuant to Rule 13a-14(a) and Rule 15d-14(a) of the Securities Exchange Act, filed herewith.
32.1	Certification of the Chief Executive Officer pursuant to 18 U.S.C. Section 1350 as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, filed herewith.
32.2	Certification of the Chief Financial Officer pursuant to 18 U.S.C. Section 1350 as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, filed herewith.

---

* Represents a management contract or compensatory plan or arrangement required to be filed as an exhibit pursuant to Item 15 of Form 10-K.

** Exhibits and Schedules to the acquisition agreement have been omitted but will be provided supplementally to the Securities and Exchange Commission upon request.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

Dated: March 6, 2009

ATS MEDICAL, INC.

By /s/ Michael D. Dale
Michael D. Dale
Chief Executive Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities indicated on March 6, 2009.

Signature	**Title**
/s/ Michael D. Dale Michael D. Dale	Chief Executive Officer, President and Chairman of the Board (principal executive officer)
/s/ Michael R. Kramer Michael R. Kramer	Chief Financial Officer (principal financial and accounting officer)
/s/ Steven M. Anderson Steven M. Anderson	Director
/s/ Robert E. Munzenrider Robert E. Munzenrider	Director
/s/ Guy P. Nohra Guy P. Nohra	Director
/s/ Eric W. Sivertson Eric W. Sivertson	Director
/s/ Theodore C. Skokos Theodore C. Skokos	Director
/s/ Martin P. Sutter Martin P. Sutter	Director

Report of Independent Registered Public Accounting Firm

Board of Directors and Shareholders
ATS Medical, Inc.

We have audited the accompanying consolidated balance sheets of ATS Medical, Inc. and subsidiaries (the "Company") as of December 31, 2008 and 2007, and the related consolidated statements of operations, changes in shareholders' equity, and cash flows for each of the three years in the period ended December 31, 2008. Our audits of the basic consolidated financial statements included the financial statement schedule listed in the index appearing under Item 15. These financial statements and financial statement schedule are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements and financial statement schedule based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the consolidated financial position of ATS Medical, Inc. and subsidiaries as of December 31, 2008 and 2007, and the consolidated results of their operations and their cash flows for each of the three years in the period ended December 31, 2008 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the related financial statement schedule, when considered in relation to the basic consolidated financial statements taken as a whole, presents fairly, in all material respects, the information set forth therein.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), ATS Medical, Inc. and subsidiaries' internal control over financial reporting as of December 31, 2008, based on criteria established in Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) and our report dated March 3, 2009 expressed an unqualified opinion on the effectiveness of the Company's internal control over financial reporting.

/s/ GRANT THORNTON LLP

Minneapolis, Minnesota
March 3, 2009

Report of Independent Registered Public Accounting Firm

Board of Directors and Shareholders
ATS Medical, Inc.

We have audited ATS Medical, Inc. and subsidiaries' (the "Company") internal control over financial reporting as of December 31, 2008, based on criteria established in Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

In our opinion, ATS Medical, Inc. and subsidiaries maintained, in all material respects, effective internal control over financial reporting as of December 31, 2008, based on criteria established in Internal Control—Integrated Framework issued by COSO.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated balance sheet of ATS Medical, Inc. and subsidiaries as of December 31, 2008 and 2007, and related consolidated statements of operations, changes in shareholders' equity, and cash flows and financial statement schedule for each of the three years in the period ended December 31, 2008, and our report dated March 3, 2009 expressed an unqualified opinion on those financial statements and financial statement schedule.

/s/ GRANT THORNTON LLP

Minneapolis, Minnesota
March 3, 2009

ATS Medical, Inc.

Consolidated Balance Sheets

(In Thousands, Except Share and Per Share Data)

	December 31	
	2008	2007
Assets		
Current assets:		
Cash and cash equivalents	**$ 20,895**	$ 10,480
Short-term investments	**-**	4,189
Accounts receivable, less allowance of $364 in 2008 and $225 in 2007	**14,532**	11,186
Inventories, net	**20,208**	18,743
Prepaid expenses	**958**	1,143
Total current assets	**56,593**	45,741
Leasehold improvements, furniture, and equipment, net	**7,031**	7,739
Goodwill	**17,016**	15,175
Other intangible assets	**32,115**	35,604
Other assets	**2,226**	1,638
Total assets	**$114,981**	$105,897
Liabilities and shareholders' equity		
Current liabilities:		
Current maturities of notes payable	**$ 2,646**	$ 2,457
Accounts payable	**4,054**	4,794
Accrued compensation	**3,537**	2,361
Warrant liability	**-**	3,913
Payable to CryoCath Technologies, Inc.	**1,910**	-
Payable to CarboMedics, Inc.	**4,500**	-
Other accrued liabilities	**2,257**	2,095
Total current liabilities	**18,904**	15,620
Convertible senior notes payable, net of unamortized discounts and bifurcated derivatives of $4,867 in 2008 and $4,964 in 2007	**17,533**	17,436
Payable to CryoCath Technologies, Inc.	**-**	1,742
Bank notes payable	**3,969**	6,143
Shareholders' equity:		
Common stock, $0.01 par value:		
Authorized shares – 150,000,000 in 2008 and 100,000,000 in 2007		
Issued and outstanding shares – 71,077,458 in 2008 and 59,512,085 in 2007	**711**	595
Additional paid-in capital	**225,657**	196,108
Accumulated deficit	**(151,916)**	(132,577)
Accumulated other comprehensive income	**123**	830
Total shareholders' equity	**74,575**	64,956
Total liabilities and shareholders' equity	**$114,981**	$105,897

The accompanying notes are an integral part of the consolidated financial statements.

ATS Medical, Inc.

Consolidated Statements of Operations

(In Thousands, Except Per Share Amounts)

	Year Ended December 31		
	2008	**2007**	**2006**
Net sales	**$ 65,821**	$ 49,587	$ 40,449
Cost of goods sold	**25,267**	21,348	19,568
Gross profit	**40,554**	28,239	20,881
Operating expenses:			
Sales and marketing	**27,373**	24,633	21,008
Research and development	**8,215**	7,546	3,381
Acquired in-process research and development	**–**	3,500	14,400
General and administrative	**10,509**	10,417	8,786
Litigation settlement	**7,500**	–	–
Amortization of intangibles	**3,489**	2,516	106
Intangible asset impairment	**–**	755	–
Distributor termination expense	**–**	–	733
Total operating expenses	**57,086**	49,367	48,414
Operating loss	**(16,532)**	(21,128)	(27,533)
Interest income	**184**	720	725
Interest expense	**(2,923)**	(2,542)	(2,394)
Other income, net	**413**	61	1,528
Net loss before income tax expense	**(18,858)**	(22,889)	(27,674)
Income tax expense	**481**	119	–
Net loss	**$(19,339)**	$(23,008)	$(27,674)
Net loss per share:			
Basic and diluted	**$ (0.31)**	$ (0.44)	$ (0.83)
Weighted average number of shares outstanding:			
Basic and diluted	**61,440**	52,589	33,537

The accompanying notes are an integral part of the consolidated financial statements.

ATS Medical, Inc.

Consolidated Statement of Changes in Shareholders' Equity

(In Thousands)

	Common Stock Shares	Common Stock Amount	Additional Paid-In Capital	Accumulated Deficit	Accumulated Other Comprehensive Income (Loss)	Unearned Compensation	Total
Balance at December 31, 2005	31,114	$ 311	$139,743	$ (81,895)	$ (64)	$(566)	$ 57,529
Stock issued under the Employee Stock Purchase Plan	104	1	217	–	–	–	218
Stock options exercised	48	–	44	–	–	–	44
Restricted stock units issued	54	1	(95)	–	–	–	(94)
Stock issued in connection with the acquisition of 3F Therapeutics	9,000	90	26,010	–	–	–	26,100
Stock compensation expense	–	–	1,103	–	–	–	1,103
Stock issuance costs	–	–	(45)	–	–	–	(45)
Reclassification of unearned compensation in accordance with the adoption of SFAS 123R	–	–	(566)	–	–	566	–
Comprehensive loss:							
Change in foreign currency translation	–	–	–	–	709	–	709
Net loss for the year	–	–	–	(27,674)	–	–	(27,674)
Comprehensive loss							(26,965)
Balance at December 31, 2006	40,320	403	166,411	(109,569)	645	–	57,890
Stock issued under the Employee Stock Purchase Plan	130	2	208	–	–	–	210
Stock options exercised	524	5	475	–	–	–	480
Restricted stock units issued	389	4	(59)	–	–	–	(55)
Stock issued in private placement sales, net of offering costs	17,925	179	30,382	–	–	–	30,561
Stock issued for purchase of intangible assets	224	2	498	–	–	–	500
Warrant issued in connection with private placement stock sale	–	–	(3,261)	–	–	–	(3,261)
Stock compensation expense	–	–	1,454	–	–	–	1,454
Comprehensive loss:							
Change in foreign currency translation	–	–	–	–	185	–	185
Net loss for the year	–	–	–	(23,008)	–	–	(23,008)
Comprehensive loss							(22,823)
Balance at December 31, 2007	59,512	595	196,108	(132,577)	830	–	64,956
Stock issued under the Employee Stock Purchase Plan	**123**	**2**	**202**	–	–	–	**204**
Stock options exercised	**103**	**1**	**132**	–	–	–	**133**
Restricted stock units issued	**600**	**6**	**(6)**	–	–	–	–
Stock issued in private placement sales, net of offering costs	**8,511**	**85**	**19,739**	–	–	–	**19,824**
Exercise of common stock warrants	**2,205**	**22**	**3,712**	–	–	–	**3,734**
Stock issued for services rendered	**23**	**–**	**48**	–	–	–	**48**
Transfer of private placement warrant liability	–	–	**3,670**	–	–	–	**3,670**
Credit facility warrants issued	–	–	**376**	–	–	–	**376**
Stock compensation expense	–	–	**1,676**	–	–	–	**1,676**
Comprehensive loss:							
Change in foreign currency translation	–	–	–	–	**(707)**	–	**(707)**
Net loss for the year	–	–	–	**(19,339)**	–	–	**(19,339)**
Comprehensive loss							**(20,046)**
Balance at December 31, 2008	**71,077**	**$ 711**	**$225,657**	**$ (151,916)**	**$ 123**	**$ –**	**$ 74,575**

The accompanying notes are an integral part of the consolidated financial statements.

ATS Medical, Inc.

Consolidated Statements of Cash Flows

(In Thousands)

	Year Ended December 31		
	2008	**2007**	**2006**
Operating activities:			
Net loss	**$(19,339)**	$(23,008)	$(27,674)
Adjustments to reconcile net loss to net cash used in operating activities:			
Depreciation and amortization	**5,623**	4,622	1,924
Loss on disposal of equipment	**–**	–	26
Non-cash interest expense	**743**	546	463
Stock based compensation expense	**1,676**	1,454	1,103
Change in value of warrant liability and derivative liability bifurcated from convertible senior notes	**(294)**	554	(1,528)
In-process research and development related to acquisitions	**–**	3,500	14,400
Impairment of intangibles	**–**	755	–
Deferred income taxes	**192**	95	–
Changes in operating assets and liabilities, net of acquisition:			
Accounts receivable	**(3,446)**	1,117	1,010
Inventories	**(2,500)**	669	2,845
Accounts payable and accrued expenses	**4,782**	121	(2,075)
Other	**159**	32	(324)
Net cash used in operating activities	**(12,404)**	(9,543)	(9,830)
Investing activities:			
Purchases of short-term investments	**(938)**	(4,140)	(10,326)
Maturities of short-term investments	**5,127**	6,043	9,336
Payments for business acquisitions	**(2,000)**	(21,074)	–
Business acquisition costs, net of cash acquired	**–**	(1,791)	(717)
Payments for other intangibles	**–**	(277)	(521)
Purchases of leasehold improvements, furniture, and equipment	**(1,440)**	(748)	(1,208)
Other	**–**	(36)	–
Net cash provided by (used in) investing activities	**749**	(22,023)	(3,436)
Financing activities:			
Advances on bank notes payable	**–**	8,600	1,500
Payments on bank notes payable	**(1,985)**	(2,327)	(909)
Net proceeds from issuance of common stock	**23,943**	31,196	123
Other	**162**	168	–
Net cash provided by financing activities	**22,120**	37,637	714
Effect of exchange rate changes	**(50)**	(203)	544
Increase (decrease) in cash and cash equivalents	**10,415**	5,868	(12,008)
Cash and cash equivalents at beginning of year	**10,480**	4,612	16,620
Cash and cash equivalents at end of year	**$ 20,895**	$ 10,480	$ 4,612
Supplemental cash flow information:			
Net cash paid during the year for interest	**$ 2,139**	$ 2,241	$ 1,642
Significant non-cash transactions:			
Transfer of warrant liability to additional paid-in capital	**$ 3,670**	–	–
Credit facility warrants issued	**376**	–	–
Issuance of common stock for acquisition of intangible assets	**–**	$ 500	–
Assumption of liabilities in connection with asset acquisition	**–**	2,429	–
License agreement intangible asset tendered in asset acquisition	**–**	1,765	–
Reclassification of unearned compensation to additional paid-in capital in accordance with the adoption of SFAS 123R	**–**	–	$ 566
Reclassification of convertible note derivative liability against related discount	**–**	–	(1,627)
Stock issued for acquisition	**–**	–	26,100

The accompanying notes are an integral part of the consolidated financial statements.

1. Summary of Significant Accounting Policies

Business Activity

ATS Medical, Inc. (the "Company") develops, manufactures, and markets medical devices for the treatment of structural heart disease. The Company operates in one business segment and its interest lies with devices used by cardiovascular surgeons in the cardiac surgery operating theater. Currently, the Company participates in the markets for mechanical and tissue replacement heart valves, heart valve repair, the surgical treatment of atrial fibrillation, and other cardiac surgery devices, tools and accessories.

Principles of Consolidation

The consolidated financial statements include the accounts of the Company and wholly owned sales and distribution subsidiaries in France, Germany, Austria and Belgium (since its inception in July 2008), after elimination of intercompany accounts and transactions.

Cash Equivalents

The Company considers all highly liquid investments with maturities of three months or less at the time of purchase to be cash equivalents. Cash equivalents are carried at cost which approximates market value and includes $1.1 million and $1.5 million in primarily Euro-denominated balances in foreign banks at December 31, 2008 and 2007, respectively.

Short-Term Investments

Short-term investments are comprised of debt securities and are classified as available-for-sale. Available-for-sale securities are carried at cost, which approximates fair value.

Accounts Receivable

Credit is extended based on evaluation of a customer's financial condition and, generally, collateral is not required. Accounts receivable are generally due within 30-180 days and are stated at amounts due from customers net of an allowance for doubtful accounts. Accounts receivable outstanding longer than the contractual payment terms are considered past due. The Company determines its allowance by considering a number of factors, including the length of time trade accounts receivable are past due, the Company's previous loss history, the customer's current ability to pay its obligation to the Company, and the condition of the general economy and the industry as a whole. The Company writes off accounts receivable when they become uncollectible, and payments subsequently received on such receivables are credited to the allowance for doubtful accounts.

Inventories

The Company carries and relieves inventories at the lower of manufacturing cost (first-in, first-out basis) or market (net realizable value). At December 31, 2008 and 2007, inventories consisted of the following (in thousands):

	2008	2007
Raw materials	**$ 4,712**	$ 3,655
Work-in-process	**4,880**	2,920
Finished goods	**11,416**	12,168
Total inventories	**21,008**	18,743
Less: non-current inventories	**(800)**	-
Inventories, net	**$20,208**	$18,743

At December 31, 2008, a portion of the Company's finished goods inventories was in excess of its current requirements based on the historical and anticipated level of sales. Management believes that these excess quantities will be utilized over the next two to three years. The Company therefore included $0.8 million of inventories in non-current other assets on the balance sheet at December 31, 2008.

Other Assets

Included in other assets are deferred financing costs (unamortized balance of $0.9 million at December 31, 2008) in connection with the 6% Convertible Senior Notes and Subordinated Credit Agreement, both disclosed in Note 7 below, which are being amortized to interest expense over five years and two years, respectively. Amortization of deferred financing costs will be approximately $0.5 million and $0.4 million for 2009 and 2010, respectively.

Leasehold Improvements, Furniture, and Equipment

Leasehold improvements, furniture, and equipment are stated at cost. Depreciation is provided using the straight-line method over the estimated useful lives of the assets as follows:

Furniture and fixtures	7 years
Equipment	5 to 17 years
Computers	2 years

Leasehold improvements are amortized over the remaining related lease term or estimated useful life, whichever is shorter.

Indefinite-Lived Intangible Assets

Indefinite-lived intangible assets include technology licenses and agreements and goodwill (see Note 6) and are carried at cost. The Company applies Statement of Financial Accounting Standard ("SFAS") No. 142, *Goodwill and Other Intangible Assets,* to its intangible assets, which prohibits the amortization of intangible assets with indefinite useful lives and requires that these assets be reviewed for impairment at least annually. Management reviews indefinite-lived intangible assets for impairment annually as of the last day of the second quarter, or more frequently if a change in circumstances or occurrence of events suggests the remaining value may not be recoverable. The test for impairment requires management to make estimates about fair-value which are based either on the expected undiscounted future cash flows or on other measures of value such as the market capitalization of the Company. If the carrying amount of the assets is greater than the measures of fair value, impairment is considered to have occurred and a write-down of the asset is recorded. Management completed the annual impairment tests as of the end of the second quarter of 2008 and determined that the Company's intangible assets were not impaired. In addition, no interim impairment has been indicated since the completion of the 2008 annual impairment testing.

Revenue Recognition

A significant portion of the Company's revenue in the United States and direct European countries is generated from consigned inventory maintained at hospitals or with field representatives. In these situations, revenue is recognized at the time that the product has been implanted or used. In all other instances, revenue is recognized, net of any applicable sales and VAT taxes invoiced, at the time product is shipped. Certain independent distributors in select international markets receive rebates against invoiced sales amounts. In these situations, the Company accrues for these rebates at the time of the original sale. These accrued rebates are treated as a reduction of revenue and in recent years have not been significant.

The Company includes shipping and handling costs, net of shipping charges invoiced to customers, in cost of goods sold.

Use of Estimates

The preparation of consolidated financial statements in conformity with accounting principles generally accepted in the United States requires management to make estimates and assumptions that affect the amounts reported in the consolidated financial statements and accompanying notes. Actual results could differ from those estimates.

Advertising and Promotional Costs

Advertising and promotional costs are charged to operations in the year incurred. Advertising and promotional costs charged to operations during 2008, 2007 and 2006 were $0.1 million, $0.1 million and $0.2 million, respectively.

Foreign Currency Translation

The financial statements for the Company's European operations are maintained in Euros. All assets and liabilities of the Company's international subsidiaries are translated to U.S. dollars at year-end exchange rates, while the statement of operations is translated at average exchange rates in effect during the year. Translation adjustments arising from the use of differing exchange rates are included in accumulated other comprehensive income (loss) in shareholders' equity. Net gains on foreign currency transactions were $0.1 million in 2008, $0.6 million in 2007 and were not significant in 2006. Foreign currency transaction gain/loss includes gains and losses on the portion of intercompany payables (denominated in U.S. dollars) determined to be short-term in nature, while gain and losses on the long-term portion of intercompany payables are recognized in accumulated other comprehensive income (loss).

The Company has reclassified foreign exchange transaction gains originally recorded as a reduction of sales and marketing expenses in the first, second and third quarters of 2007 to other income. These reclassifications totaled $0.2 million and had no impact on 2007 quarterly net losses as previously reported.

Income Taxes

The Company accounts for income taxes under SFAS No. 109, *Accounting for Income Taxes*. Deferred taxes are provided on the asset and liability method whereby deferred tax assets are recognized for deductible temporary differences and operating loss and tax credit carry forwards and deferred tax liabilities are recognized for taxable temporary differences. Temporary differences are the differences between the amounts of assets and liabilities recorded for income tax and financial reporting purposes. Deferred tax assets are reduced by a valuation allowance when, in the opinion of management, it is more likely than not that some portion or all of the deferred tax assets will not be realized. Deferred tax assets and liabilities are adjusted for the effects of changes in tax laws and rates on the date of enactment.

The Company adopted the provisions of Financial Accounting Standards Board ("FASB") Interpretation No. 48, *Accounting for Uncertainty in Income Taxes* ("FIN 48"), on January 1, 2007. Previously, the Company had accounted for tax contingencies in accordance with SFAS No. 5, *Accounting for Contingencies*. As required by FIN 48, which clarifies SFAS No. 109, *Accounting for Income Taxes*, the Company recognizes the financial statement benefit of a tax position only after determining that the relevant tax authority would more likely than not sustain the position. For tax positions meeting the more likely than not threshold, the amount recognized in the financial statements is the largest benefit that has a greater than 50 percent likelihood of being realized upon ultimate settlement with the relevant tax authority. At the adoption date, the Company applied FIN 48 to all tax positions for which the statute of limitations remained open.

Warranties

The Company adheres to FASB Interpretation No. 45, *Guarantor's Accounting and Disclosure Requirements for Guarantees, Including Indirect Indebtedness to Others* ("FIN 45"). FIN 45 requires disclosures concerning the Company's obligations under certain guarantees. The Company sells service agreements on cryoablation consoles, for which it defers the related service revenue and recognizes over the service period. Revenue and warranty costs under these service agreements has not been significant.

Stock-Based Compensation

The Company has stock-based employee compensation plans, which are described more fully in Note 9. The Company accounts for its stock-based employee compensation plans under the recognition and measurement principles of SFAS No. 123 (Revised 2004), *Share-Based Payment*, which requires all share-based payments to be recognized in the income statement based on their fair values.

Net Loss Per Share

Basic net loss per share is computed by dividing net loss by the weighted average shares outstanding and excludes any dilutive effects of restricted stock units, options, warrants, and convertible securities. For all periods presented, diluted net loss per share is equal to basic net loss per share because the effect of including potential common shares for stock options outstanding would have been anti-dilutive. Had net income been achieved, approximately 490,000, 620,000, and 860,000 shares of common stock equivalents would have been included in the computation of diluted net income per share for the years ended December 31, 2008, 2007 and 2006, respectively.

Convertible Debt and Derivative Instruments

The Company accounts for embedded derivatives related to its convertible senior notes and certain common stock warrants under SFAS No. 133, *Accounting for Derivative Instruments and Hedging Activities,* and related Emerging Issues Task Force ("EITF") and Securities and Exchange Commission ("SEC") rules, which require certain embedded derivative financial instruments to be bifurcated from the debt or equity agreement and accounted for as a liability. The Company determines the value of these derivatives under SFAS No. 157, *Fair Value Measurements* (discussed more fully in Note 16 below), by making judgments and estimates of the probability that future conditions giving rise to such derivatives may occur.

2. Acquisitions

Acquisition of Surgical Cryoablation Business from CryoCath Technologies, Inc.

In June 2007, the Company completed the acquisition of the cryoablation surgical device business of CryoCath Technologies, Inc. ("CryoCath"). Pursuant to the Asset Purchase Agreement between the Company and CryoCath, the Company paid CryoCath $22.0 million at closing and agreed to pay an additional $2.0 million 24 months after closing. The Company also agreed to pay up to an additional $6.0 million in contingent payments, $2.0 million of which is contingent on the successful transition of manufacturing from CryoCath to the Company and $4.0 million of which is contingent upon the Company reaching certain levels of sales in 2009 and 2010 of SurgiFrost® XL, a product line in development. The contingent payment due upon the successful transition of manufacturing operations from CryoCath to the Company was paid in June 2008 ($1.0 million) and August 2008 ($1.0 million). These payments were recorded as additional goodwill. The $2.0 million payment due 24 months after closing was discounted to present value and is shown on the balance sheet as Payable to CryoCath Technologies, Inc. The increase in present value of this payment ($0.2 million in 2008 and $0.1 million in 2007) was charged to interest expense.

The Company and CryoCath also entered into 1) a License Agreement, which provides the Company with an exclusive, perpetual, royalty-free, worldwide license to use CryoCath's intellectual property related to the cryoablation surgical device business, 2) a Manufacturing Agreement, pursuant to which CryoCath agreed to manufacture, assemble and supply products relating to the cryoablation surgical business to the Company for a period of up to one year, and 3) a Termination Agreement, which terminated the Distribution Agreement and Agent Agreement, each dated November 9, 2004, between the Company and CryoCath.

Purchase Price. The Company has accounted for the acquisition of the surgical cryoablation business of CryoCath as a purchase under U.S. generally accepted accounting principles. Under the purchase method of accounting, the assets and liabilities acquired were recorded as of the acquisition date, at their respective fair values, and consolidated with those of the Company. The purchase price allocation is based upon estimates and valuations of the fair value of assets acquired and liabilities assumed. The valuations

required the use of significant assumptions and estimates. Critical estimates included, but were not limited to, future expected cash flows and the applicable discount rates. These estimates were based on assumptions that the Company believes to be reasonable. However, actual results may differ from these estimates.

The purchase price was as follows (amounts in thousands):

Cash paid (includes $0.9 million post-closing purchase price reduction and $2.0 million manufacturing transition payments)	$23,074
License payments made under prior Distribution and Agent Agreements	1,765
Non-contingent cash payment to be made (discounted to present value using discount rate of 9.25%)	1,663
Acquisition-related costs	1,791
Total purchase price	$28,293

Purchase Price Allocation. The following table summarizes the purchase price allocation for the acquisition of the surgical cryoablation business of CryoCath (amounts in thousands):

Current assets	$ 951
Fixed assets	761
Definite-lived intangible assets subject to amortization	11,800
Goodwill	11,888
Acquired in-process research and development	3,500
Current liabilities	(607)
Total purchase price allocation	$28,293

The excess of the purchase price over the fair value of net tangible assets acquired was allocated to specific intangible asset categories and in-process research and development as follows:

(in thousands)	Amount Assigned	Weighted Average Amortization Period
Definite-lived intangible assets:		
Existing technology – core	$ 4,400	16 years
Existing technology – developed	5,600	5 years
Distributor relationships	1,500	12 years
Product trademarks	300	10 years
Total definite-lived intangible assets	$11,800	10 years
Goodwill	$11,888	
Acquired in-process research and development	$ 3,500	

The Company believes the intangible assets as determined represent the fair value at the date of acquisition. The Company used the income approach to determine the fair value of the amortizable intangible assets. The product trademarks amortization period was subsequently reduced to 15 months in the fourth quarter of 2007, due to changing product trade names and trademarks.

The $3.5 million acquired in-process research and development ("IPR&D") associated with the acquisition relates to SurgiFrost XL, a product line in development to enable less invasive stand alone or sole therapy solutions to treat atrial fibrillation. This IPR&D was recorded as a non-recurring charge to operations in the second quarter of 2007. The Company used the income approach to determine the fair value of IPR&D, applying a risk adjusted discount rate of 30% to the development project's projected cash flows. While the Company is not currently working on the SurgiFrost XL product iteration, it is working on procedural development with its existing related products to enable less invasive ablation surgery.

Acquisition of 3F Therapeutics, Inc.

In September 2006, the Company completed the acquisition of all the voting and non-voting stock of 3F Therapeutics, Inc. ("3F"), a privately-held medical device company specializing in manufacturing heart tissue valve replacement components. The Company views the acquisition of 3F as a significant step in executing its vision of obtaining a leadership position in all segments of the cardiac surgery market.

The acquisition was consummated pursuant to a January 2006 agreement and plan of merger, as amended (the "Merger Agreement"). Under the terms of the Merger Agreement, upon closing, the Company paid each 3F stockholder its pro-rata portion of an initial payment of 9 million shares of the Company's common stock, subject to certain adjustments. The Company deposited 1,425,000 shares of the closing payment in escrow to be held for at least 18 months ("escrow period") after closing of the merger to cover potential indemnification claims and certain contingencies. At the conclusion of the escrow period, the balance of the escrow account would be distributed pro-rata to the former holders of 3F capital stock. In February 2008, the Company notified 3F stockholders that the escrow shares would not be distributed at the end of the escrow period and would remain in escrow pending the final outcome of certain shareholder litigation involving 3F (see "Abbey Litigation" in Note 18 of these Notes to Consolidated Financial Statements). In addition to the initial closing payment, the Company is obligated to make additional contingent payments to 3F stockholders of up to 10 million shares of the Company's common stock with 5 million shares issuable upon obtaining each of the CE mark and FDA approval of certain key products on or prior to December 31, 2013. Milestone share payments may be accelerated upon completion of certain transactions involving these key products. These contingent payments are subject to certain rights of offset for indemnification claims and certain other events.

Purchase Price. The Company accounted for the acquisition of 3F as a purchase under U.S. generally accepted accounting principles. Under the purchase method of accounting, the assets and liabilities of 3F were recorded as of the acquisition date, at their respective fair values, and consolidated with those of the Company. The purchase price allocation was based upon estimates of the fair value of assets acquired and liabilities assumed. These valuations require the use of significant assumptions and estimates. Critical estimates included, but were not limited to, future expected cash flows and related applicable discount rates. These estimates were based on assumptions that the Company believes to be reasonable. However, actual results may differ from these estimates.

The purchase price for the acquisition of 3F was as follows (amounts in thousands):

Fair value of ATS common stock	$26,100
Other estimated acquisition-related costs	3,316
Total purchase price	$29,416

Purchase Price Allocation. The following table summarizes the purchase price allocation for the 3F acquisition (amounts in thousands):

Cash	$ 2,599
Other current assets	2,530
Intangible assets subject to amortization	7,150
Goodwill	5,128
Other long-term assets	519
Acquired in-process research and development	14,400
Current liabilities	(2,910)
Total purchase price allocation	$29,416

The excess of the purchase price over the fair value of net tangible assets acquired was allocated to specific intangible asset categories and in-process research and development as follows:

(in thousands)	Amount Assigned	Weighted Average Amortization Period
Definite-lived intangible assets:		
Technology – core	$ 5,200	20 years
Technology – developed	700	9 years
Tradenames and trademarks	1,200	15 years
Other	50	7 years
Total definite-lived intangible assets	$ 7,150	18 years
Goodwill	$ 5,128	
Acquired in-process research and development	$14,400	

The Company believes that the intangible assets so determined represent the fair value at the date of acquisition. The Company used the income approach to determine the fair value of the amortizable intangible assets.

The $14.4 million acquired IPR&D associated with the acquisition relates to the Enable sutureless tissue valve product line and has been recorded as a non-recurring charge to operations for the year ended December 31, 2006. The Company used the income approach to determine the fair value of IPR&D, applying a risk adjusted discount rate of 37% to the development project's projected cash flows. Enable clinical trials have begun in Europe. European market approval is anticipated in 2009. The development effort is subject to risks associated with the ultimate clinical efficacy of the Enable product line as well as the results and high costs of the clinical trials.

The results of 3F's operations since the acquisition have been included in the Company's consolidated financial statements.

Pro Forma Results of Operations

The following unaudited pro forma financial information presents a summary of consolidated results of operations of the Company as if the acquisitions of CryoCath's surgical cryoablation business and of 3F had occurred at the beginning of the earliest period presented. The historical consolidated financial information has been adjusted to give effect to pro forma events that are directly attributable to the acquisitions and are factually supportable. The unaudited pro forma condensed consolidated financial information is presented for informational purposes only. The pro forma information is not necessarily indicative of what the results of operations actually would have been had the acquisitions been completed at the dates indicated. In addition, the unaudited pro forma condensed consolidated financial information does not purport to project the future operating results of the Company after completion of the acquisitions.

For the year ended December 31, 2008, the CryoCath and 3F acquisitions were included in the Company's consolidated results of operations; consequently, no pro forma financial information for this period is presented. For purposes of preparing the unaudited pro forma financial information for the year ended December 31, 2007, CryoCath's surgical cryoablation business unaudited Statement of Sales and Direct Operating Expenses for the six-month period ended March 31, 2007 was combined with the Company's consolidated Statement of Operations for the year ended December 31, 2007, which includes six months of post-CryoCath asset acquisition operating results and a full year of post-3F acquisition operating results. For the year ended December 31, 2006, CryoCath's surgical cryoablation business audited Statement of Sales and Direct Operating Expenses for the fiscal year ended September 30, 2006 was combined with the unaudited pro forma combined condensed statement of operations of the Company and 3F for the year ended December 31, 2006, which includes three months of post-3F acquisition operating results. All periods used in preparing the unaudited pro forma financial information represent the most recent financial information available for each entity. The CryoCath financial statements referenced above have been summarized in a format similar to the financial statements of the Company and translated to U.S. dollars in accordance with U.S. generally accepted accounting principles.

(Unaudited pro forma data in thousands, except per share data)	Year Ended December 31, 2007	2006
Net sales	$ 53,951	$ 48,383
License revenue	-	11,031
Total revenue	$ 53,951	$ 59,414
Net loss	$(19,238)	$(16,456)
Net loss per share – basic and diluted	$ (0.37)	$ (0.33)

License revenue relates to license, supply and training agreements that 3F had with Edwards Lifesciences (Edwards). The Edwards agreements were terminated in the fourth quarter of 2006 and no additional license revenue was recognized.

The unaudited pro forma net losses include 1) amortization of purchased intangible assets acquired in both acquisitions, 2) an increase in depreciation expense related to the step-up of fixed assets to fair value, 3) adjustments to eliminate intercompany sales, commission and distribution rights income and commission expense resulting from sales of CryoCath products, 4) the elimination of certain license amortization recorded by the surgical cryoablation division of Cryocath which does not apply to the combined entity, 5) the estimated impact of the ongoing supply arrangement between CryoCath and ATS and 6) estimated additional interest expense on a pro forma basis due to the additional bank borrowing completed to finance the CryoCath asset acquisition.

The unaudited pro forma financial information excludes non-recurring IPR&D charges of $3.5 million recorded in 2007 in connection with the CryoCath asset acquisition and $14.4 million recorded in 2006 in connection with the acquisition of 3F.

3. Short-Term Investments

The Company had no short-term investments at December 31, 2008. At December 31, 2007, the Company held short-term investments of $4.2 million (at cost), which consisted of commercial paper, had maturity dates of approximately one year or less, and which approximated fair value.

4. Leasehold Improvements, Furniture, and Equipment, net

At December 31, 2008 and 2007, leasehold improvements, furniture, and equipment consisted of the following (in thousands):

	2008	**2007**
Furniture and fixtures	**$ 599**	$ 608
Equipment	**13,604**	12,310
Leasehold improvements	**3,678**	3,491
Construction in progress	**556**	632
	18,437	17,041
Less accumulated depreciation	**11,406**	9,302
	$ 7,031	$ 7,739

5. Private Placements of Common Stock

In December 2008, the Company sold 8,510,639 shares of its common stock to Essex Woodlands Health Ventures ("Essex") at $2.35 per share and received $19.8 million, net of offering costs. In connection with the financing, the Company issued to Essex warrants to purchase 2,533,192 shares of common stock at an exercise price of $2.475 per share during the first year after the closing, $2.85 per share during the second year, and $3.10 thereafter. The warrants expire on December 19, 2015. In connection with the stock sale, a co-founder and managing director of Essex was appointed to the Company's Board of Directors.

In June 2007, the Company sold to Alta Partners VIII, L.P. ("Alta") 9,800,000 shares of its common stock and a seven-year warrant to purchase up to 1,960,000 shares of common stock at an exercise price of $1.65

per share. The Company received $15.3 million, net of offering costs. In connection with the stock sale, a founder and one of three managing directors of the general partner of Alta was appointed to the Company's Board of Directors.

The Company was required to treat the Alta warrant as a liability pending approval of its shareholders at the Company's 2008 annual meeting of shareholders (or any subsequent annual meeting) to issue shares of common stock to Alta upon exercise of the warrant. Accordingly, the fair value of the warrant was recorded as a liability on the date of issuance and marked-to-market at each quarter-end. At the Company's annual meeting of shareholders in May 2008, the Company received shareholder approval to issue shares of common stock upon exercise of the warrant. Consequently, the liability was marked-to-market through the date of shareholder approval, with the remaining warrant liability balance of $3.7 million credited to additional paid-in capital. The following table summarizes Alta warrant liability activity:

	Year ended December 31,	
(in thousands)	**2008**	2007
Warrant liability balance at beginning of period	**$ 3,913**	$ -
Valuation of warrants upon issuance	**-**	3,261
Total losses (gains) included in other expense (income):		
First quarter	**(1,521)**	-
Second quarter	**1,278**	279
Third quarter	**-**	(408)
Fourth quarter	**-**	781
Transfer to additional-paid-in-capital	**(3,670)**	-
Warrant liability balance at end of period	**$ -**	$3,913

In June 2008, Alta exercised the warrant on all 1,960,000 shares of common stock. The Company received $3.2 million as a result of the exercise.

In March 2007, the Company sold 8,125,000 shares of its common stock to certain institutional investors and received $15.3 million, net of offering costs. The private placement included the issuance of warrants to purchase 3,250,000 shares of the Company's common stock at an exercise price of $2.40 per share, subject to adjustment upon certain events. The warrants became exercisable in September 2007 and expire on March 15, 2012.

6. Goodwill and Other Intangible Assets

Goodwill and intangible asset balances are summarized as follows (in thousands):

	Assets Subject to Amortization					Assets Not Subject to Amortization		
	3F Technology and Trademarks	CryoCath Technology and Trademarks	Carbon Technology License	Other Technology, Development and Licensing Agreements	Total	3F Goodwill	CryoCath Goodwill	Total Goodwill
Balance at December 31, 2007:								
Gross carrying amount (cost)	$7,150	$11,800	$18,500	$777	$38,227	$5,128	$10,047	$15,175
Accumulated amortization	(531)	(841)	(1,233)	(18)	(2,623)	-	-	-
Net carrying amount	$6,619	$10,959	$17,267	$759	$35,604	$5,128	$10,047	$15,175
Balance at December 31, 2008:								
Gross carrying amount (cost)	**$7,150**	**$11,800**	**$18,500**	**$777**	**$38,227**	**$5,128**	**$11,888**	**$17,016**
Accumulated amortization	**(956)**	**(2,580)**	**(2,467)**	**(109)**	**(6,112)**	-	-	-
Net carrying amount	**$6,194**	**$ 9,220**	**$16,033**	**$668**	**$32,115**	**$5,128**	**$11,888**	**$17,016**

Goodwill and intangible assets activity is summarized as follows (in thousands):

	Assets Subject to Amortization					Assets Not Subject to Amortization	
	3F Technology and Trademarks	CryoCath Technology and Trademarks	Carbon Technology License	Other Technology, Development and Licensing Agreements	Total	CryoCath Agency & Distribution Agreements	Goodwill
Balance at December 31, 2006	$7,044	-	$18,500	$754	$26,298	$ 1,765	$ 5,092
Acquisition of CryoCath surgical cryoablation business	-	$11,800	-	-	11,800	(1,765)	10,047
Cash Payments	-	-	-	277	277	-	36
Stock Payments	-	-	-	500	500	-	-
Amortization	(425)	(841)	(1,233)	(17)	(2,516)	-	-
Asset impairment write-off	-	-	-	(755)	(755)	-	-
Balance at December 31, 2007	6,619	10,959	17,267	759	35,604	-	15,175
Acquisition of CryoCath surgical cryoablation business	-	-	-	-	-	-	**2,000**
CryoCath acquisition adjustments	-	-	-	-	-	-	**(159)**
Amortization	**(425)**	**(1,739)**	**(1,234)**	**(91)**	**(3,489)**	-	-
Balance at December 31, 2008	**$6,194**	**$ 9,220**	**$16,033**	**$668**	**$32,115**	**$ -**	**$17,016**

Aggregate amortization of intangible assets over the next five years is as follows (in thousands):

2009	$ 3,225
2010	3,234
2011	3,189
2012	2,629
2013	2,067
	$14,344

Intangible Asset Purchases

As disclosed in Note 2 above, the Company acquired goodwill and certain other intangible assets in connection with the June 2007 acquisition of the surgical cryoablation business of CryoCath and the September 2006 acquisition of 3F.

In January 2007, the Company issued 224,416 shares of its common stock pursuant to the exercise of its option to purchase certain assets of EM Vascular, Inc. ("EM Vascular"), under a May 2005 Option and Asset Purchase Agreement ("Option Agreement"). The payment in shares was at the option of the Company and was in lieu of a $0.5 million cash payment. The most significant asset acquired as part of this purchase is technology that may potentially allow for a non-invasive, non-pharma therapy for the treatment of such disorders as atherosclerotic plaque and blood hyper-cholesterolemia. Under the terms of the Option Agreement, the Company will also be obligated to make additional contingent payments to EM Vascular of up to $2.2 million in the form of ATS common stock upon the attainment of certain milestone events and to pay royalties on applicable product sales.

In September 2007, the Company acquired a fully paid-up license for $0.2 million related to a thoracic port surgical device which the Company has been selling and for which the Company had previously been paying royalties based on product sales.

In October 2007, the Company acquired certain patent rights and intellectual property related to a heart valve holder, a heart valve folding and delivery device, and other ancillary devices. The Company paid an up-front license fee of $0.1 million and will be obligated to make royalty payments on future sales of products related to certain of the patent rights transferred.

Intangible Asset Impairment

The Company made licensing fee and development milestone payments to ErySave AB ("ErySave"), a Swedish research firm, under an exclusive development and licensing agreement, executed in 2004, for worldwide rights to ErySave's PARSUS filtration technology for cardiac surgery procedures. In July 2007, the Company was informed that ErySave was in the process of declaring bankruptcy and they could not continue development work. Accordingly, the $0.8 million ErySave license payments intangible asset was written off during the year ended December 31, 2007.

Change in Status of Indefinite-lived Intangible Asset

The Company holds an exclusive, worldwide right and license to use CarboMedics, Inc.'s ("CarboMedics", f/k/a Sulzer CarboMedics) pyrolytic carbon technology. The license was originally obtained in 1999 and had a carrying value of $18.5 million at December 31, 2006. Based on the Company's periodic review of its indefinite-lived intangibles, the Company determined that this carbon technology license has a finite life and began amortizing this asset over a 15-year life commencing January 1, 2007. The Company expects amortization expense on this technology license to be approximately $1.2 million per year through 2021.

Agency & Distribution Agreements Tendered in Acquisition

In November 2004, the Company signed an exclusive agency agreement and a distribution agreement with CryoCath. The agreements granted the Company co-promotion rights in the United States as well as exclusive distribution rights in the rest of the world including Europe and Asia for CryoCath's cryotherapy products. The Company made $1.8 million in agency and distribution license fee payments to CryoCath during 2005 and 2006. In connection with the June 2007 acquisition of the cryoablation surgical device business of CryoCath discussed in Note 2 above, these agency and distribution license fee payments were tendered and included as a part of the purchase price.

Goodwill

The goodwill acquired in the CryoCath and 3F acquisitions is not subject to amortization, but must be analyzed for impairment on an annual basis. The goodwill recognized in connection with the CryoCath asset acquisition is tax deductible over a 15-year period, while the goodwill recognized in connection with the 3F acquisition is not tax deductible.

7. Long-Term Debt

Convertible Notes Payable

In 2005, the Company sold a combined $22.4 million aggregate principal amount of 6% Convertible Senior Notes due 2025 ("Notes"), warrants to purchase 1,344,000 shares of the Company's common stock ("Warrants"), and embedded derivatives. Interest is payable under the Notes each April and October.

The Warrants are exercisable at $4.40 per share and expire in 2010. The Company has reserved 105% of the shares necessary for the exercise of the warrants. The Warrants were valued at $1.13 per share using the Black-Scholes valuation model. The total value of the Warrants on the date of issuance was $1.5 million and was recorded as a discount on the Notes and is being amortized to interest expense over the 20 year life of the Notes using the effective interest method.

The Notes are convertible into common stock at any time at a fixed conversion price of $4.20 per share, subject to adjustment under certain circumstances including, but not limited to, the payment of cash dividends on common stock. If fully converted, the Notes would convert into 5,333,334 shares of the Company's common stock. At the date of issuance of the Notes, the Company had only 19,222 authorized shares of its common stock available for the Note holders if conversion was elected. This shortfall in authorized shares resulted in the Company having to recognize an embedded derivative as explained further in this note.

The Note holders have the right to require the Company to repurchase the Notes at 100% of the principal amount plus accrued and unpaid interest on October 15 in 2010, 2015 and 2020 or in connection with certain corporate change of control transactions. If the Note holders elect to convert the Notes prior to October 15, 2010 in connection with certain corporate change of control transactions, the Company will increase the conversion rate for the Notes surrendered for conversion by a number of additional shares based on the stock price of the Company on the date of the change of control.

The Company has the right to redeem the Notes at 100% of the principal amount plus accrued and unpaid interest at any time on or after October 20, 2008. At any time prior to maturity, the Company may also elect to automatically convert some or all of the Notes into shares of its common stock if the closing price of the common stock exceeds $6.40 for a period as specified in the indenture.

The Company agreed to file a Registration Statement on Form S-3 covering the resale of all of the shares of the Company's common stock issuable upon conversion of the Notes and exercise of the Warrants using its best efforts to have the Registration Statement declared effective within 120 days of the closing. Depending on the length of time after this 120 day period for the Registration Statement to be declared effective, a penalty ranging from .8% to 1.2% of the principal amount of the Notes and Warrants would accrue to the Note holders. The Registration Statement on Form S-3 was declared effective by the SEC on February 13, 2007; consequently, the Company incurred and recorded approximately $0.4 million in Registration Statement penalties in 2006 and 2007.

The Company analyzed all of the above provisions in the Notes and related agreements for embedded derivatives under SFAS No. 133, *Accounting for Derivative Instruments and Hedging Activities,* and related EITF interpretations and SEC rules. The Company has determined that four such provisions in the convertible debt agreement are considered derivatives under SFAS No. 133:

- The embedded written option relating to the common stock that may be potentially issuable upon conversion ("conversion feature derivative")
- The option for Note holders to put back debt to the Company in connection with certain corporate change of control transactions
- The provision relating to an additional payment in connection with the automatic conversion of the Notes prior to October 15, 2008
- The provision to increase the conversion rate in the event of a change in control transaction

The Company prepared valuations of each of the above derivatives and recorded a $5.5 million liability on the date of issuance of the Notes, with an offsetting discount on the Notes. The discount is being amortized to interest expense over the 20 year life of the Notes, using the effective interest method.

At its annual shareholder meeting held on September 25, 2006, the Company received approval from its shareholders to increase its authorized shares to 100,000,000, eliminating the previous deficiency in authorized shares. Since the Company then had sufficient authorized shares to settle the Notes if converted, the conversion feature derivative no longer was required to be accounted for as an embedded derivative under SFAS No. 133. The remaining conversion feature derivative balance of $1.4 million was reclassified against the discount on the Notes for the year ended December 31, 2006.

The derivative liability is adjusted to fair value on a quarterly basis, resulting in $0.1 million, $0.1 million and $1.5 million change in valuation credits to other income for the years ended December 31, 2008, 2007 and 2006, respectively. The remaining liability was $0.1 million at December 31, 2008. The derivative liability is presented in the balance sheet within the same line as the Convertible Senior Notes payable.

Bank Notes Payable

In 2004, the Company entered into a Loan and Security Agreement ("Loan Agreement") with Silicon Valley Bank ("Bank"), establishing a secured revolving credit facility for $8.5 million consisting of a $2.5 million three-year term loan as well as a two-year $6.0 million line of credit. In 2006, the Bank agreed to provide for additional advances of up to $1.5 million, which the Company could use to finance or refinance eligible equipment purchased between June 2005 and May 2006. The Company fully drew down both the $2.5 million term loan and the $1.5 million advance amount, which were being repaid over 36 and 60 month periods, respectively. The Company did not draw or have any outstanding balance on the $6.0 million line of credit. All Company assets are pledged as collateral under the Loan Agreement. The Loan Agreement also restricts the Company from declaring or paying dividends.

The Company was subject to certain financial covenants under the Loan Agreement, as amended, to maintain a liquidity ratio of not less than 2.0 to 1.0 and a net tangible net worth of at least $40 million. In February 2007, the Company entered into an Amendment to the Loan Agreement ("February 2007 Amendment") whereby the liquidity ratio was decreased to be equal to or greater than 1.6 to 1.0 and the tangible net worth requirement was eliminated. The February 2007 Amendment also terminated the line of credit.

In June 2007, the Company entered into an Amendment to the Loan Agreement ("June 2007 Amendment") whereby the Bank consented to (i) the Company's purchase of the cryoablation surgical device business of CryoCath ("CryoCath Assets") and (ii) certain agreements related to the acquisition of the CryoCath Assets. The June 2007 Amendment also provided for an $8.6 million term loan ("Term Loan") to the Company, which was used to repay the outstanding term loan and advances to the Company from the Bank under the Loan Agreement and to purchase the CryoCath Assets.

Under the Term Loan, as amended, the Company made monthly payments of interest only from July 2007 until March 2008, and began making 39 monthly payments of principal plus interest effective April 1, 2008 and continuing on the first day of each successive month until June 1, 2011. The Company also has the right to prepay all, but not less than all, of the outstanding Term Loan at any time so long as no event of default has occurred. Interest on the Term Loan accrues at a fixed rate per annum of 9.5%, equal to 1.25% above the Prime Rate in effect as of the funding date of the Term Loan.

The June 2007 Amendment also made certain changes to the liquidity ratio covenant set forth in the Loan Agreement, as amended. The liquidity ratio was changed to require that the Company maintain, at all times, on a consolidated basis, a ratio of (a) the sum of 1) unrestricted cash (and equivalents) of the Company on deposit with the Bank plus 2) 50% of the Company's accounts receivable arising form the sale or lease of goods, or provision of services, in the ordinary course of business, divided by (b) the indebtedness of the Company to the Bank for borrowed money, of equal to or greater than 1.4 to 1.0. On June 30, 2008, the Company entered into an Amendment to the Loan Agreement whereby, for the balance of 2008, the 1.4 to 1.0 required liquidity ratio was reduced to 1.1 to 1.0 for intra-quarter months only. The liquidity ratio remained at 1.4 to 1.0 for quarter-end months and would revert to 1.4 to 1.0 for all months beginning in 2009. On December 19, 2008, the Company entered into an Amendment to the Loan

Agreement ("December 2008 Amendment") whereby the liquidity ratio was raised to 2.0 to 1.0 until the payment of a $4.5 million litigation settlement payment is made to CarboMedics on April 30, 2009, and a related security interest granted to CarboMedics is released (see Note 18 below). Upon such payment, the Bank has agreed to return the liquidity ratio requirement to 1.4 to 1.0. In addition, the December 2008 Amendment requires the Company to maintain at least $4.5 million on deposit with the Bank at all times until the litigation settlement payment of $4.5 million is made in April 2009. As of December 31, 2008, the Company was in compliance with the financial covenants as set forth in the Loan Agreement, as amended.

Future maturities of bank notes payable are as follows (in thousands):

2009	$2,646
2010	2,646
2011	1,323
	$6,615

Subordinated Credit Agreement

On June 29, 2008, the Company entered into a Subordinated Credit Agreement ("Credit Agreement") with Theodore C. Skokos, a member of the Company's Board of Directors, for a two-year, $5 million Revolving Credit Facility ("Credit Facility"). Advances under the Credit Facility will carry interest at 15% per annum payable quarterly. The Credit Facility also carries an annual commitment fee of 1% of the average unused Revolving Commitment Amount, payable annually. At December 31, 2008, all $5 million was available for borrowing under the Credit Facility.

The Company's obligations to Mr. Skokos under the Credit Agreement have been made subordinate to (1) the Company's obligations to the holders of its 6% Convertible Senior Notes and (2) the Company's obligations to Silicon Valley Bank as provided in a Subordination Agreement dated June 29, 2008, by and between the Bank and Mr. Skokos. All Company assets are pledged as collateral on the Credit Facility.

In connection with the execution of the Credit Agreement, the Company issued to Mr. Skokos a warrant to purchase 245,098 shares of common stock of the Company at $2.04 per share until June 29, 2015 ("Effective Date Warrant"). On July 24, 2008, Mr. Skokos exercised the Effective Date Warrant in full and the Company received $0.5 million from the exercise. The Company is obligated to issue additional seven-year warrants to Mr. Skokos in the future based on the total amount of advances under the Credit Facility. If the aggregate unpaid principal amount of all advances ("Total Outstanding Revolver Amount") under the Credit Facility, after giving effect to the new advance, is greater than the amount of the highest Total Outstanding Revolver Amount at any time prior to the date of any such advance ("Maximum Total Outstanding Revolver Amount"), then the Company shall issue a warrant to Mr. Skokos for a number of shares of common stock equal to 20% of (a) the difference between (1) such Total Outstanding Revolver Amount less (2) the Maximum Total Outstanding Revolver Amount, (b) divided by the warrant exercise price of $2.04 per share. The maximum number of additional shares issuable pursuant to warrants issued under the Credit Facility is 490,196 shares (not including the Effective Date Warrant issued upon execution of the Credit Agreement), which represents 20% of the maximum amount of advances under the $5 million Credit Facility divided by the $2.04 warrant exercise price.

8. Employee Stock Purchase Plan

The Company maintains an Employee Stock Purchase Plan. Under the terms of the plan, employees are eligible to purchase common stock of the Company on a quarterly basis. Employees can purchase common stock at 85% of the lesser of the market price of the common stock on the first day of the quarter or the last day of the quarter. The Employee Stock Purchase Plan is deemed to be a compensatory plan under Statement No. 123(R) and the related expense is included in stock compensation expense.

The following table summarizes the shares issued and issuance prices under the Plan:

Fiscal Year	Number of Shares	Price Range
2008	123,278	$1.40 – $2.25
2007	129,449	$1.50 – $1.84
2006	103,947	$1.95 – $2.38

9. Stock-Based Compensation and Equity Plans

Stock-Based Compensation

The Company accounts for its stock-based employee compensation plans under the recognition and measurement principles of SFAS No. 123 (Revised 2004), *Share-Based Payment* ("Statement 123(R)"), which requires all share-based payments to be recognized in the income statement based on their fair values.

Fair Value. The Company uses the Black-Scholes option pricing model as its method for determining fair value of stock option grants. The weighted average per share fair value of these option grants is shown below for 2008 and 2006 (there were no options granted in 2007) and was estimated at the date of grant using the Black-Scholes model with the following weighted average assumptions:

Assumptions used:	2008	2006
Expected volatility	1.06	0.83
Risk-free interest rate	2.8%	4.8%
Expected life	5 years	5 years
Dividend yield	0%	0%
Weighted average per share fair value of options granted	$1.22	$2.03

The expected volatility is a measure of the amount by which the Company's stock price is expected to fluctuate during the expected term of options granted. The Company determines the expected volatility solely based upon the historical volatility of the Company's common stock over a period commensurate with the option's expected life. The Company does not believe the future volatility of its common stock over an option's expected life is likely to differ significantly from the past. The risk-free interest rate is the implied yield available on U.S. Treasury issues with a remaining term equal to the option's expected life on the grant date. The expected life of options granted represents the period of time for which options are expected to be outstanding and is derived from the Company's historical stock option exercise experience and option expiration data. For purposes of estimating the expected life, the Company has aggregated all individual option awards into one group as the Company does not expect substantial differences in exercise behavior among its employees. The dividend yield is zero since the Company has never declared or paid any cash dividends on its common stock and does not expect to do so in the foreseeable future.

The fair value of restricted stock unit awards ("RSUs") is determined based on the closing market price on the award date.

Stock Compensation Expense. The Company uses the single option (i.e. straight-line) method of attributing the value of stock-based compensation expense for all stock option grants and RSU awards. Stock compensation expense for all stock-based grants and awards is recognized over the service or vesting period of each grant or award.

The following table summarizes stock compensation expense recognized in the statements of operations for the years ended December 31, 2008, 2007 and 2006:

(in thousands, except per share data)	2008	2007	2006
Stock compensation expense included in:			
Sales and marketing expenses	**$ 973**	$ 805	$ 649
General and administrative expenses	**703**	649	454
Total stock compensation expense	**$1,676**	$1,454	$1,103
Stock compensation expense per share	**$ 0.03**	$ 0.03	$ 0.03

Because the Company maintained a full valuation allowance on its U.S. deferred tax assets, the Company did not recognize any net tax benefit related to its stock-based compensation expense for the years ended December 31, 2008, 2007 and 2006.

Forfeitures. Statement 123(R) requires forfeitures to be estimated at the time of grant and revised, if necessary, in subsequent periods if actual forfeitures differ from those estimates in order to derive the Company's best estimate of awards ultimately expected to vest. Forfeitures represent only the unvested portion of a surrendered option or RSU and are typically estimated based on historical experience. Based on an analysis of the Company's historical data, the Company applied average forfeiture rates of 10.79%, 8.95% and 10.37% for the years ended December 31, 2008, 2007 and 2006, respectively, to stock options and RSUs outstanding in determining its stock compensation expense, which it believes are reasonable forfeiture estimates for these periods.

Equity Plans

The Company has a Stock Incentive Plan (the "Plan") under which stock options to purchase common stock of the Company may be granted or RSUs may be awarded to employees and non-employees of the Company. Stock options may be granted under the Plan as incentive stock options ("ISO") or as non-qualified stock options ("non-ISO"). The Company also has stock options outstanding from a previous equity compensation plan as well as free-standing options not under any plan. In addition, the Company has an Employee Stock Purchase Plan ("ESPP") under which employees are eligible to purchase common stock of the Company on a quarterly basis at 85% of the lesser of the market price of the common stock on the first day of the quarter or the last day of the quarter. All stock issued under options exercised, RSUs awarded or ESPP shares purchased are new shares of the Company's common stock. Option grants generally carry contractual terms of up to ten years. RSU awards generally carry contractual terms of up to five years.

The Company had a total of 9,768,354 shares of common stock reserved for stock option grants and RSU awards at December 31, 2008, of which 3,941,761 shares were available for future grants or awards under the Plan.

Stock Options. The following table summarizes the changes in stock options outstanding under the Company's stock-based compensation plans:

	Stock Options Outstanding Under the Plans				Weighted Average Option Exercise Price Per Share
	ISO	Non-ISO	Non-Plan Options	Total	
Outstanding at December 31, 2005	1,006,700	350,000	2,897,902	4,254,602	$3.09
Options granted	-	5,000	-	5,000	2.95
Options exercised	(7,625)	-	(40,202)	(47,827)	0.92
Options canceled	(81,450)	(56,000)	(325,000)	(462,450)	4.57
Outstanding at December 31, 2006	917,625	299,000	2,532,700	3,749,325	2.94
Options granted	-	-	-	-	-
Options exercised	(21,500)	-	(502,000)	(523,500)	0.92
Options canceled	(226,250)	-	(333,750)	(560,000)	4.44
Outstanding at December 31, 2007	669,875	299,000	1,696,950	2,665,825	3.02
Options granted	**125,900**	-	-	**125,900**	**1.57**
Options exercised	**(24,750)**	-	**(78,750)**	**(103,500)**	**1.28**
Options canceled	**(128,375)**	-	**(125,000)**	**(253,375)**	**4.29**
Outstanding at December 31, 2008	**642,650**	**299,000**	**1,493,200**	**2,434,850**	**$2.89**

The following table summarizes the ranges of exercise prices for outstanding and exercisable stock options as of December 31, 2008:

	Options Outstanding at December 31, 2008			Options Exercisable at December 31, 2008	
Range of Exercise Prices	Number Outstanding	Weighted Average Remaining Contractual Life	Weighted Average Exercise Price	Number Exercisable	Weighted Average Exercise Price
$0.37 – $0.46	505,000	3.88 years	$0.40	505,000	$0.40
0.51 – 2.51	504,650	4.71 years	1.90	387,250	2.00
2.70 – 3.46	424,200	4.56 years	3.21	424,200	3.21
3.60 – 3.80	637,500	5.02 years	3.71	637,500	3.71
3.99 – 8.50	343,500	3.58 years	5.66	343,500	5.66
9.88	20,000	1.34 years	9.88	20,000	9.88
$0.37 – $9.88	2,434,850	4.40 years	$2.89	2,317,450	$2.95

As of December 31, 2008, the aggregate intrinsic value of options outstanding and exercisable was approximately $1.6 million and $1.5 million, respectively. The aggregate intrinsic value of options exercised for the years ended December 31, 2008, 2007 and 2006 was approximately $0.2 million, $0.7 million and $0.1 million, respectively. The aggregate intrinsic value represents the total pre-tax intrinsic value (the difference between the closing price of the Company's common stock on December 31, 2008, 2007 and 2006 ($2.78, $2.21 and $2.07 per share, respectively) and the exercise price of each-in-the-money option that would have been received by the option holders had all option holders exercised their options on those dates). As of December 31, 2008, the Company had $0.1 million of total unrecognized compensation expense, net of estimated forfeitures, related to stock options that will be recognized over a weighted average period of four years.

Restricted Stock Units. The following table summarizes RSU awards activity under the Company's stock-based compensation plans:

	Number of Shares	Weighted Average Award Date Fair Value	Weighted Average Remaining Contractual Term
Unvested at December 31, 2005	348,000	$3.25	1.53 years
Awards granted	967,272	2.73	
Awards vested	(87,000)	3.38	
Awards forfeited	(58,750)	3.11	
Unvested at December 31, 2006	1,169,522	2.83	2.03 years
Awards granted	1,537,184	1.74	
Awards vested	(419,055)	2.75	
Awards forfeited	(250,113)	2.51	
Unvested at December 31, 2007	2,037,538	2.06	2.09 years
Awards granted	**2,158,634**	**2.02**	
Awards vested	**(600,166)**	**2.27**	
Awards forfeited	**(204,263)**	**2.09**	
Unvested at December 31, 2008	**3,391,743**	**$2.00**	**2.14 years**

As of December 31, 2008, the aggregate intrinsic value of RSU awards outstanding was $9.4 million. The aggregate intrinsic value represents the total pre-tax value of common stock that RSU holders would have received (based on the closing price of the Company's common stock on December 31, 2008 of $2.78 per share) had all RSUs vested and common stock been issued to the RSU holders on December 31, 2008. As of December 31, 2008, the Company had approximately $4.2 million of total unrecognized compensation expense, net of estimated forfeitures, related to RSU awards that will be recognized over a weighted average period of approximately four years.

10. Leases

The Company has operating leases for its facilities. These leases expire at various dates through July 2010. Future minimum lease payments under these agreements are as follows (in thousands):

Year ending December 31:	
2009	$ 827,000
2010	331,000
	$1,158,000

Rent expense was $1.0 million, $1.0 million, and $0.7 million for 2008, 2007 and 2006, respectively.

11. Income Taxes

At December 31, 2008, the Company had federal net operating loss carryforwards of approximately $161 million ($57 million related to 3F) and credits for increasing research and development costs of approximately $1 million ($0.9 million related to 3F). The Company also had state net operating loss carryforwards of approximately $87.9 million ($47.7 million related to 3F) and research and development credits of approximately $0.9 million ($0.8 million related to 3F). The net operating loss carryforwards are available to offset future taxable income or reduce taxes payable through 2028. These loss carryforwards will begin expiring in 2009. The credits continue to expire in 2011 through 2028.

Included as part of the Company's net operating loss carryforwards are approximately $3.4 million in tax deductions that resulted from the exercise of stock options. Should these loss carryforwards be realized, the corresponding change in valuation allowance will be recorded as additional paid-in capital.

The Company's ability to utilize a portion of its net operating loss carryforwards and research and development credits to offset future taxable income are subject to certain limitations under Section 382 and 383 of the Internal Revenue Code due to changes in the equity ownership of the Company. In addition, 3F's net operating loss carryforwards may also be limited by separate return limitation year rules.

In addition to the U.S. tax attributes discussed above, the Company had net operating loss carryforwards outside the U.S. totaling $1 million. These international net operating loss carryforwards do not expire.

Components of deferred tax assets and liabilities are as follows (in thousands):

	December 31	
	2008	**2007**
Current deferred tax assets	**$989**	$ 576
Long-term deferred tax assets (liabilities):		
Net operating loss carryforwards	**59,376**	56,260
Foreign net operating loss carryforwards	**319**	419
Research and development credits	**1,605**	1,507
Alternative minimum tax credits	**54**	54
Depreciation	**1,188**	1,020
Compensation accruals and reserves	**540**	467
Deferred financing costs	**286**	194
Technology license amortization	**(1,857)**	(1,534)
Other intangible assets and goodwill	**(934)**	(1,016)
Other	**766**	835
Net long-term deferred tax assets	**61,343**	58,206
Net deferred tax assets before valuation allowance	**62,332**	58,782
Less valuation allowance	**(62,639)**	(58,877)
Net deferred tax liability	**$ (307)**	$ (95)

The net deferred tax liability shown above has been included in other accrued liabilities on the balance sheet. The valuation allowance shown above includes 3F net deferred tax assets (primarily net operating loss carryforwards) of $21.3 million. If realized, 3F tax assets will be recorded first as reductions to goodwill and intangible assets ($18.8 million at December 31, 2008), and then as income tax benefits ($2.5 million at December 31, 2008). The Company has determined that a full valuation allowance is appropriate given the uncertainty of the Company's ability to utilize the deferred tax assets.

Reconciliation of the statutory federal income tax rate to the Company's effective tax rate is as follows:

	2008	2007	2006
Tax at statutory rate	**(34.0)%**	(34.0)%	(34.0)%
State income taxes	**(2.0)**	(4.0)	(4.0)
Permanent differences	**1.0**	(3.8)	-
Other (including foreign taxes)	**1.0**	(1.4)	-
FIN 48	**0.7**	-	-
Acquired in-process research and development	**-**	-	17.7
Impact of changes in valuation allowance	**35.8**	43.7	20.3
	2.5%	0.5%	-%

The Company adopted the provisions of FIN 48, *Accounting for Uncertainty in Income Taxes*, on January 1, 2007. Previously, the Company had accounted for tax contingencies in accordance with SFAS No. 5, *Accounting for Contingencies*. As required by FIN 48, which clarifies SFAS No. 109, *Accounting for Income Taxes*, the Company recognizes the financial statement benefit of a tax position only after determining that the relevant tax authority would more likely than not sustain the position. For tax positions meeting the more likely than not threshold, the amount recognized in the financial statements is the largest benefit that has a greater than 50 percent likelihood of being realized upon ultimate settlement with the relevant tax authority. At the adoption date, the Company applied FIN 48 to all tax positions for which the statute of limitations remained open.

As a result of the implementation of FIN 48, the Company identified approximately $0.5 million of unrecognized tax benefits. The total gross amount of unrecognized tax benefits as of December 31, 2008 and 2007 was approximately $0.8 million and $0.5 million, respectively. If recognized in 2008, the unrecognized tax benefits would have decreased the effective tax rate by approximately 0.9%. A reconciliation of the beginning and ending amount of unrecognized tax benefits is as follows (in thousands):

Balance at January 1, 2007	$540
Additions for tax positions of prior periods	13
Reductions for tax positions related to the current period	(23)
Balance at December 31, 2007	530
Additions for tax positions of prior periods	**166**
Additions for tax positions related to the current period	**120**
Balance at December 31, 2008	**$816**

It is the Company's practice to recognize penalties and/or interest related to income tax matters in interest and penalties expense. As of December 31, 2008, the Company had no accrued interest and penalties.

The Company is subject to income taxes in the U.S. federal jurisdiction, foreign jurisdictions and various states jurisdictions. Tax regulations within each jurisdiction are subject to the interpretation of the related tax laws and regulations and require significant judgment to apply. With few exceptions, the Company is no longer subject to U.S. federal, foreign, state or local income tax examinations by tax authorities for the years before 2005.

The Company is currently under examination by the French taxing authorities for the 2005-2007 tax years. The Company anticipates a decrease in unrecognized tax benefits ranging between $0.1 million and $0.2 million within the next twelve months as the examination in France concludes.

12. Distributor Termination

In December 2006, the Company and an international distributor in Europe executed agreements providing for the termination of the distributor, the conversion of the distributor to a commissioned sales representative effective January 1, 2007 and the buy-back by the Company of the distributor's remaining inventory stock. The value of the inventory bought back totaled approximately $0.7 million. In addition, termination payments to the distributor totaling approximately $0.7 million were accrued by the Company at December 31, 2006. The termination payments were payable in two equal installments, one of which was paid in the fourth quarter of 2007 and the other of which was paid in first quarter of 2008. The 2008 installment carried interest at 6%.

13. Benefit Plan

The Company has a defined contribution salary deferral plan covering substantially all employees under Section 401(k) of the Internal Revenue Code. Under the plan, the Company contributes an amount equal to 25% of the first 12% of each employee's contribution. The Company recognized expense for contributions to the plan of $0.2 million for each of the three years ended December 31, 2008, 2007 and 2006.

14. Significant Customers and Concentration of Credit Risk

Since its inception, the Company has operated in a single industry segment: developing, manufacturing, and marketing medical devices. As a result, the information disclosed herein materially represents all of the financial information related to the Company's principal operating segment. The Company derived the following percentages of its net sales from the following geographic regions:

	2008	2007	2006
United States	**38%**	38%	38%
Europe	**36%**	33%	28%
Asia Pacific	**21%**	22%	25%
Other Markets	**5%**	7%	9%

The company uses independent distributors to sell its products in many European and all other international markets. Sales to one distributor represented 6%, 8%, and 11% of the Company's net sales for the years ended December 31, 2008, 2007 and 2006, respectively.

The Company had balances owing from two customers that aggregated 15% of its accounts receivable balances at December 31, 2008. The Company had balances owing from two customers that aggregated 12% of its accounts receivable balances at December 31, 2007, and had balances owing from three customers that aggregated 19% of its accounts receivable balances at December 31, 2006.

15. Quarterly Financial Data (Unaudited)

Quarterly data for 2008 and 2007 was as follows (in thousands, except loss per share):

	Quarter			
	First	**Second**	**Third**	**Fourth**
Year ended December 31, 2008				
Net sales	**$ 14,845**	**$16,900**	**$16,044**	**$18,032**
Gross profit	**8,948**	**10,290**	**9,474**	**11,842**
Net loss	**(2,411)**	**(4,669)**	**(3,746)**	**(8,513)**
Net basic and diluted loss per share	**$ (0.04)**	**$ (0.08)**	**$ (0.06)**	**$ (0.13)**
Year ended December 31, 2007				
Net sales	$ 10,796	$12,417	$12,157	$14,217
Gross profit	6,243	6,872	6,844	8,280
Net loss	(4,820)	(8,717)	(3,310)	(6,161)
Net basic and diluted loss per share	$ (0.11)	$ (0.18)	$ (0.06)	$ (0.10)

In connection with the settlement of litigation with CarboMedics discussed in Note 18 below, the Company recorded a $7.5 million litigation settlement charge in the fourth quarter of 2008.

In connection with the acquisition of the surgical cryoablation business of CryoCath discussed in Note 2 above, the Company acquired $3.5 million of IPR&D, recorded as a non-recurring charge to operations in the second quarter of 2007.

Note 16. Fair Value Measurements

Effective January 1, 2008, the Company adopted SFAS No. 157, *Fair Value Measurements.* SFAS No.157 defines fair value, establishes a framework for measuring fair value in accordance with generally accepted accounting principles and expands disclosures about fair value measurements. The adoption of SFAS No. 157 did not have a material impact on the Company's financial condition or results of operations.

SFAS No. 157 defines fair value as the price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. SFAS No. 157 also describes three levels of inputs that may be used to measure fair value:

- Level 1 – quoted prices in active markets for identical assets and liabilities.
- Level 2 – observable inputs other than quoted prices in active markets for identical assets and liabilities.
- Level 3 – unobservable inputs in which there is little or no market data available, which require the reporting entity to develop its own assumptions.

The fair value of the Company's warrant liability (described in Note 5 above) was determined based on Level 2 inputs. The fair value of the Company's convertible debt derivative liability (described in Note 7 above) was determined based on Level 3 inputs using discounted probability cash flow valuation models.

The effective date for certain aspects of SFAS No. 157 was deferred under Financial Accounting Standards Board ('FASB") Staff Position ('FSP") No. 157-2 and is currently being evaluated by the Company. Areas impacted by the deferral relate to nonfinancial assets and liabilities that are measured at fair value, but are recognized or disclosed at fair value on a nonrecurring basis. This deferral applies to such items as nonfinancial long-lived asset groups measured at fair value for an impairment assessment. The effects of these remaining aspects of SFAS No. 157 are to be applied by the Company to fair value measurements prospectively beginning January 1, 2009. The Company does not expect them to have a material impact on its financial condition or results of operations.

Additional guidance in the application of SFAS No. 157 for determining the fair value of a financial asset when the market for that asset is not active was provided by FSP 157-3 The Company is currently evaluating this FSP but does not believe it will have a material impact on its financial condition or results of operations.

Effective January 1, 2008, the Company adopted SFAS No 159, *The Fair Value Option for Financial Assets and Financial Liabilities.* SFAS No. 159 amends SFAS No. 115, *Accounting for Certain Investments in Debt and Equity Securities*, and permits entities to choose to measure many financial instruments and certain other items at fair value. The adoption of SFAS No. 159 did not have a material impact on the Company's financial condition or results of operations.

Note 17. Recently Issued Accounting Pronouncements

In December 2007, the Financial Accounting Standards Board issued SFAS No. 141(R), *Business Combinations* ("SFAS No. 141(R)"), which establishes principles and requirements for how an acquirer recognizes and measures in its financial statements the identifiable assets acquired, the liabilities assumed, and any non-controlling interest in the acquired company and the goodwill acquired. Among the changes in SFAS No. 141(R) are: transaction-related costs will be expensed; restructuring costs that the acquirer expects but is not obligated (as of the acquisition date) to incur will not be included in the measurement of the acquisition cost; and research and development assets will be capitalized. SFAS No. 141(R) also

establishes disclosure requirements to enable the evaluation of the nature and financial effects of the business combination. SFAS No. 141(R) replaces SFAS No. 141, is effective as of the beginning of an entity's fiscal year that begins after December 15, 2008, and will be adopted by the Company in the first quarter of 2009.

18. Litigation

Abbey Litigation

On January 23, 2006, following execution of the Merger Agreement between the Company and 3F, 3F was informed of a summons and complaint dated January 19, 2006, which was filed in the U.S. District Court in the Southern District of New York by Arthur N. Abbey ("Abbey") against 3F Partners Limited Partnership II (a major stockholder of 3F, "3F Partners II"), Theodore C. Skokos (the then chairman of the board and a stockholder of 3F), 3F Management II, LLC (the general partner of 3F Partners II), and 3F (collectively, the "Defendants") (the "Abbey I Litigation"). The summons and complaint alleges that the Defendants committed fraud under federal securities laws, common law fraud and negligent misrepresentation in connection with the purchase by Abbey of certain securities of 3F Partners II. In particular, Abbey claims that the Defendants induced Abbey to invest $4 million in 3F Partners II, which, in turn, invested $6 million in certain preferred stock of 3F, by allegedly causing Abbey to believe, among other things, that such investment would be short-term. Pursuant to the complaint, Abbey is seeking rescission of his purchase of his limited partnership interest in 3F Partners II and return of the amount paid therefor (together with pre-and post-judgment interest), compensatory damages for the alleged lost principal of his investment (together with interest thereon and additional general, consequential and incidental damages), general damages for all alleged injuries resulting from the alleged fraud in an amount to be determined at trial and such other legal and equitable relief as the court may deem just and proper. Abbey did not purchase any securities directly from 3F and is not a stockholder of 3F. On March 23, 2006, 3F filed a motion to dismiss the complaint. On August 6, 2007, the Court granted 3F's motion to dismiss the complaint based on plaintiff's failure to state a claim upon which relief may be granted and ordered the Clerk of the Court to close the case. On August 30, 2007, Abbey filed a Notice of Appeal with the United States Court of Appeals for the Second Circuit seeking to reverse the District Court's August 6, 2007 Order dismissing the case. On December 18, 2008, The Second Circuit issued a Summary Order that affirmed the District Court's judgment of dismissal finding that Abbey failed to state a claim against 3F. However, the Second Circuit remanded the case to the District Court to allow Abbey a chance to replead his claims. On February 13, 2009, Abbey filed an Amended Complaint in the District Court. 3F's response to the amended complaint is due on March 31, 2009.

On or about June 14, 2006, Abbey commenced a second civil action in the Court of Chancery in the State of Delaware by serving 3F with a complaint naming both 3F and Mr. Skokos as defendants (the "Abbey II Litigation"). The complaint alleges, among other things, fraud and breach of fiduciary duties in connection with the purchase by Abbey of his partnership interest in 3F Partners II. The Delaware action seeks: (1) a declaration that (a) for purposes of the merger, Abbey was a record stockholder of 3F and was thus entitled to withhold his consent to the merger and seek appraisal rights after the merger was consummated and (b) the irrevocable stockholder consent submitted by 3F Partners II to approve the merger be voided as unenforceable; and (2) damages based upon allegations that 3F aided and abetted Mr. Skokos in breaching Mr. Skokos's fiduciary duties of loyalty and faith to Abbey. On July 17, 2006, 3F filed a motion to dismiss the complaint in the Abbey II Litigation, or, alternatively, to stay the action pending adjudication of the Abbey I Litigation. On October 10, 2006, the Delaware Chancery Court entered an order staying the Delaware action pending the outcome of the Abbey I litigation. On or about August 17, 2007, the parties informed the Delaware Chancery Court that they would consent to the continued stay of the Delaware action pending the outcome of Abbey's appeal of the Abbey I Litigation.

3F has been notified by its director and officer insurance carrier that such carrier will defend and cover all defense costs as to 3F and Mr. Skokos in the Abbey I Litigation and Abbey II Litigation, subject to policy terms and full reservation of rights. In addition, under the merger agreement, 3F and the 3F stockholder representative have agreed that the Abbey I Litigation and Abbey II Litigation are matters for which express indemnification is provided. As a result, the escrow shares and milestone shares, if any, may be used by ATS to satisfy, in part, ATS's set-off rights and indemnification claims for damages and losses incurred by 3F or ATS, and their directors, officers and affiliates, that are not otherwise covered by applicable insurance arising from the Abbey I Litigation and Abbey II Litigation. See Note 2 above for a

description of the escrow and milestone shares. The Company believes the Abbey I Litigation and Abbey II Litigation will not have a material impact on the Company's financial position or operating results.

CarboMedics Litigation

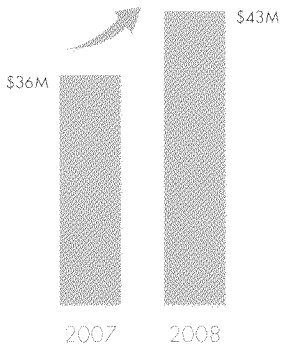
On November 22, 2006, CarboMedics filed a complaint against the Company in the U.S. District Court in the District of Minnesota. The complaint alleged that the Company breached certain contractual obligations, including an alleged obligation to purchase $22 million of mechanical heart valve carbon components under a long-term supply agreement with CarboMedics.

CarboMedics initially sought specific performance and claimed damages of more than $20 million. On February 16, 2007, the Company filed its answer and counterclaims to the complaint. CarboMedics subsequently withdrew its request for specific performance and revised its damages estimate to $12.5 million before accounting for attorney fees and costs.

On May 30, 2008, the court entered a formal stay to permit the parties to pursue alternative dispute resolution. The parties were unable to reach an agreement and the stay was lifted on September 17, 2008. On the same date, the court denied both parties' dispositive motions.

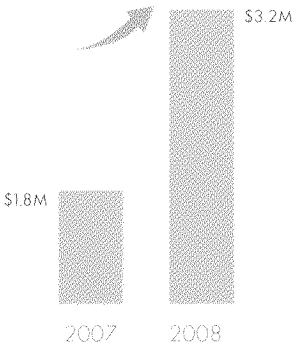
On December 22, 2008, the Company announced that the parties had executed a settlement agreement. CarboMedics agreed to release all claims that were or could have been asserted in the case. In exchange, the Company agreed to pay CarboMedics $7.5 million and to release its claims. The Company paid $3 million in December 2008 and will pay an additional $4.5 million by April 30, 2009. The Company granted a security interest to CarboMedics on its inventories to secure its settlement payment obligation. Satisfaction of the settlement terms will conclude all related matters with CarboMedics and preclude any future litigation on the matter in question.

+20%



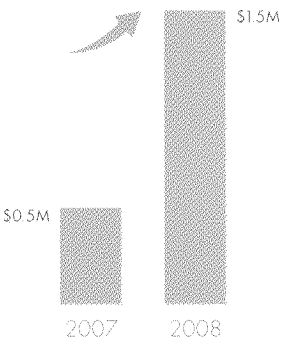
ATS Open Pivot™
Heart Valve

+80%



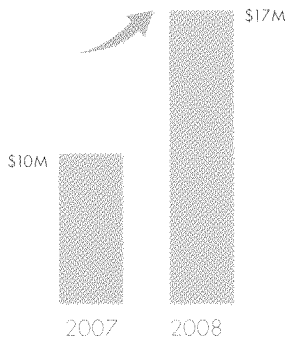
ATS Simulus™
Annuloplasty Ring/Band

+173%



ATS 3f™
Aortic Bioprosthesis

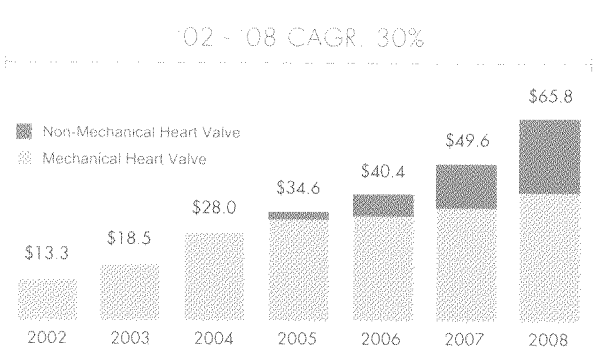
+74%



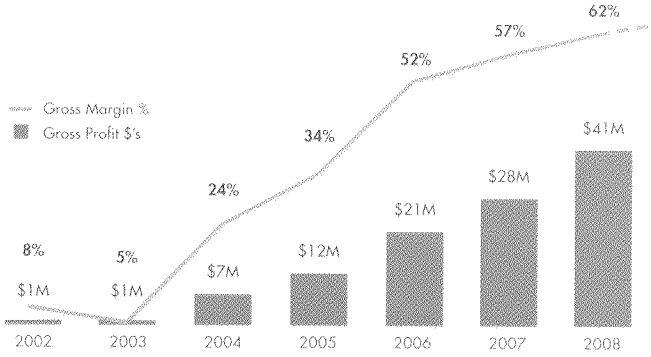
ATS CryoMaze™
Surgical Ablation System

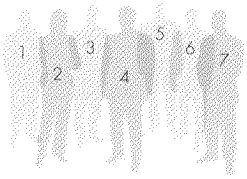
Up, up, up in '08. By investing in high growth platforms and delivering differentiated performance, share and revenue results are moving up for every ATS Medical offering. We fully expect the upward trend to continue in 2009 and beyond.

Revenue Growth History



Gross Margin History





1. David Elizondo
2. Astrid Berthe
3. Thad Coffindaffer
4. Michael Dale
5. James Cox, M.D.
6. Craig Swandal
7. Michael Kramer

Leading the Way. A dedicated focus to cardiac surgery has led to strong, steady growth for ATS Medical. Holding steady the helm of meaningful differentiation, the ATS Medical management team is confident the best is yet to come.

INVESTOR INFORMATION

Independent Auditors
Grant Thornton LLP
Minneapolis, Minnesota

Legal Counsel
Dorsey & Whitney LLP

Patent Counsel
Haugen Law Firm LLP
Oppenheimer Wolff and
Donnelly LLP

Transfer Agent and Registrar
Wells Fargo Shareowner Services
161 N. Concord Exchange
South St. Paul, Minnesota 55075-1139

Form 10-K
A copy of the Company's annual report to the Securities and Exchange Commission will be provided without charge to any shareholder upon written request to the Corporate Secretary at the corporate headquarters.

BOARD OF DIRECTORS

Michael D. Dale
President and
Chief Executive Officer,
Chairman of the Board
ATS Medical, Inc.

Steven M. Anderson
President
Acorn Cardiovascular, Inc.

Robert E. Munzenrider
Former CFO
St. Jude Medical, Inc.

Guy P. Nohra
Co-founder and
Managing Director
Alta Partners

Eric W. Sivertson
President
Dymedix Corporation

Theodore C. Skokos
Former Chairman of the
Board, 3f Therapeutics

Martin P. Sutter
Co-founder and
Managing Director
Essex Woodlands
Health Ventures

EXECUTIVE OFFICERS AND SENIOR MANAGEMENT

Michael D. Dale
President and
Chief Executive Officer,
Chairman of the Board

Astrid M. Berthe
Vice President,
Regulatory Affairs
and Quality Assurance

Thad Coffindaffer
Vice President, Sales

James L. Cox, M.D.
Medical Director

David R. Elizondo
Vice President,
Research, Development
and Clinical Affairs

Michael R. Kramer
Chief Financial Officer

Craig A. Swandal
Vice President,
Operations

ATS Medical, Inc.
3905 Annapolis Lane
Minneapolis, MN 55447 (USA)
(763) 553-7736
(866) 287-6331
www.atsmedical.com

ATS MEDICAL
Focused right
on cardiac surgery.