UTHR 2008

United Therapeutics Corporation

Identify the corridors of indifference and run like hell down them.

Walter D. Fackler, 1968
Dean, Graduate School of Business
The University of Chicago

Corporate Profile

United Therapeutics Corporation is a biotechnology company focused on the development and commercialization of unique products to address the unmet medical needs of patients with chronic and life-threatening cardiovascular and infectious diseases and cancer.

At United Therapeutics, we derive tremendous inspiration and satisfaction from our work. Quality of life for our patients is our utmost therapeutic goal. Currently, our revenue-generating products are all in the field of cardiovascular medicine. While building business value in the cardiovascular field, we are also laying important foundations for future franchises in the treatment of cancer and infectious diseases.

Remodulin, a prostacyclin analog

Our lead product is Remodulin® (treprostinil sodium) Injection, a stable, synthetic analogue of prostacyclin, a molecule produced by the body that has powerful effects on blood-vessel health and function. Remodulin is currently approved for subcutaneous and intravenous administration to treat pulmonary arterial hypertension (PAH), a life-threatening disease that affects the blood vessels in the lungs. We have successfully completed a Phase 3 clinical trial of an inhaled version of treprostinil, the active ingredient in Remodulin, and our New Drug Application (NDA) for inhaled treprostinil is currently under review by the US Food and Drug Administration (FDA). We are also in the process of completing clinical trials of a tablet version of treprostinil to be administered orally. Our goal is to constantly improve upon and find new ways to administer treprostinil, providing patients and physicians with more and better therapeutic options. We are also in the early stages of studying our formulations of treprostinil in other diseases, such as peripheral artery disease.

Tadalafil, a phosphodiesterase 5 inhibitor

Pending regulatory approval, we licensed the exclusive rights from Eli Lilly and Company (Lilly) to commercialize a once-daily dose of tadalafil for the treatment of pulmonary hypertension. Tadalafil is also the active pharmaceutical ingredient in Cialis®, which is exclusively marketed by Lilly for the treatment of erectile dysfunction. Lilly conducted a successful Phase 3 clinical trial of tadalafil for pulmonary hypertension, and the FDA is currently reviewing the related NDA.

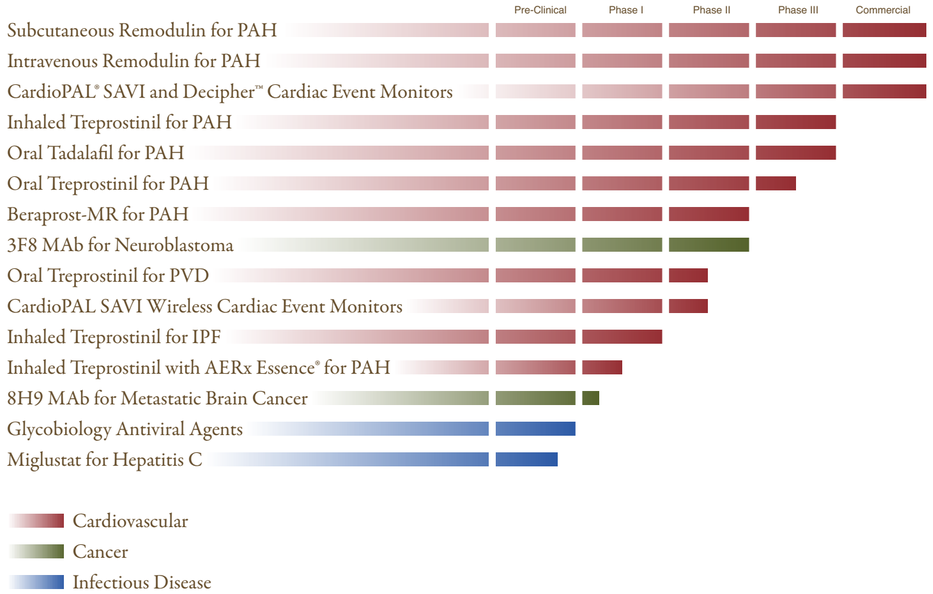
Monoclonal Antibodies, cancer therapies

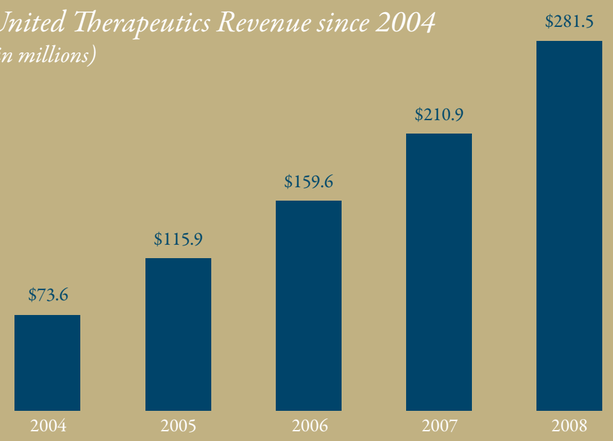
We are developing two monoclonal antibodies which we licensed from Memorial Sloan-Kettering Cancer Center for the treatment of neuroblastoma and metastatic brain cancer. Mainly affecting children, neuroblastoma is a rare cancer of the sympathetic nervous system. It is the most common extracranial solid cancer in children and the most common cancer in infants. Metastatic brain cancer develops in the brain from the spread of cancers from other tissues in the body and prognosis is very poor. In the US, about 100,000 cases of metastatic brain cancer are diagnosed each year.

Iminosugars, glycobiology antiviral agents

We have exclusive rights to a class of therapeutic iminosugars discovered by the field's founder, Professor Raymond Dwek of the University of Oxford. These small molecule synthetic sugars target hepatitis C virus and other infectious diseases with a novel mechanism of action that interferes with viral replication.

Product Pipeline





**Earnings before non-cash charges is a non-GAAP financial measure defined as net income (loss) before non-cash income taxes, non-cash license fee expenses, depreciation, amortization, impairment charges and share-based compensation (stock option and share tracking award expense). We incurred a net loss in 2008 of $42.8 million, compared with net income of $19.9 million for 2007. See "Earnings Before Non-Cash Charges" on the Selected Financial Results page of this Annual Report for information regarding the use of non-GAAP financial information and a reconciliation of earnings before non-cash charges to net income (loss).*

Shareholder Letter

If a company meets or exceeds three out of four of its corporate goals for a year, is that good or bad news? A reasonable person might reply, "It depends on the importance of the three goals that were met as compared to the one that was missed." In 2008 we knocked the cloth off the ball for our three biggest goals, and we stumbled over a fourth, which we viewed as much less important. I believe that makes 2008 a very good year overall for United Therapeutics.

Our goals for 2008 were:

- To grow revenues and cash profits by 30%;
- To file applications for marketing approval of inhaled treprostinil in the US and the European Union (EU);
- To expand our cardiovascular product portfolio beyond treprostinil; and
- To successfully complete our FREEDOM-C study of oral treprostinil.

The first three goals directly affect our near-term revenues and profits, and we easily achieved them. Our fourth goal was medium-term in its anticipated effect. We barely missed the mark on this goal because the FREEDOM-C trial almost achieved statistical significance, and we already have plans underway to address the dose-related tolerability issues we encountered during the trial.

Of the three front-line goals that we achieved, perhaps none is more important than growing our Remodulin revenues. Careful budget management coupled with strong physician and patient demand, resulted in 33% revenue growth in 2008 as compared with 2007, and 46% growth in earnings before non-cash charges.* These statistics are well above our targets, and place us comfortably in the top quintile of all US biotech companies in terms of growth. While we incurred a net loss in 2008 for the first year since 2003, this was primarily driven by a one-time upfront payment of $150 million to Lilly for the rights to commercialize tadalafil for pulmonary hypertension, pending regulatory approval, as discussed below.

Second in importance was to parlay our excellent clinical trial results for inhaled treprostinil into applications in the US and the EU. We submitted both applications this year and we expect to receive decisions within twelve months. Obtaining marketing approval for inhaled treprostinil in the US and EU is a very important goal for us because we expect inhaled treprostinil to contribute significantly to our revenues in 2010 and beyond. We also believe it will provide physicians and patients with an attractive option among the many marketed PAH therapies.

Our third major goal was to expand our product offerings beyond treprostinil. We achieved this goal big-time by licensing from Lilly the exclusive rights to market tadalafil, the active ingredient in Cialis, for pulmonary hypertension in the US. Lilly's NDA for tadalafil for pulmonary hypertension is currently under review by the FDA, with an anticipated action date of May 24, 2009. Once approved by the FDA, we expect that tadalafil will likely contribute to our performance in the near term.

Because we are fortunate enough to have achieved record revenues and earnings before non-cash charges*, and positioned ourselves for two possible product launches in 2009, the near miss of our FREEDOM-C trial for PAH should not color the year. Nevertheless, in the traumatized state of the world's financial markets, the announcement of the FREEDOM-C results precipitated a huge sell-off in our common stock, causing the price to drop 41% in the week following the announcement. Although we believe it is illogical to focus on our one medium-term stumble rather than on our three near-term achievements, we may have to exercise some patience before we see our stock price reflect this year's outstanding business growth.

In 2008, two scientific papers were published that underline the importance of our mission. One reported the results of a three-year study that followed 821 pulmonary hypertension patients who were started on Tracleer®, the best-selling oral medication in the pulmonary hypertension field. At the end of the study period, 23% of the patients had died, and, of those patients, 90% had never been advanced beyond oral treatment. We believe this study indicates that the market for Remodulin is far from saturated. In fact, we have a great deal more work to do to make physicians aware of the benefits of our medicine.

The second paper reported the results of a one-year, open-label extension trial of the patients who had completed our TRIUMPH-1 trial of inhaled treprostinil and elected to remain in the trial for an additional year. Remarkably, after one year in this open-label extension study, over 90% of the patients required no additional medicines. This is notable because most patients with PAH require additional therapies after less than one year on medication. This data is a direct reflection of our mission to develop the best medicines possible from our intellectual property. Less than a decade after licensing treprostinil from Glaxo Wellcome for infusion, we turned it into an easier-to-use inhalation therapy. Subject to FDA and EMEA approval in 2009, we are hopeful that this development will improve quality of life for thousands of PAH patients.

As we wrap up 2008, we all feel a great sense of pride in the accomplishments of the Unither Family of Companies. While this letter has focused on our material achievements, please be assured that we are also working hard to build an even more impressive biotechnology company in the next five to ten years. The profits we earn from our current products are put right back into creating new products. The new medicines we create and market give us tremendous encouragement to do more and more and more. Most of all, we love the fact that we are helping people by giving them "medicines for life." That's our motto. That's our credo.

Onwards,

Senior Management

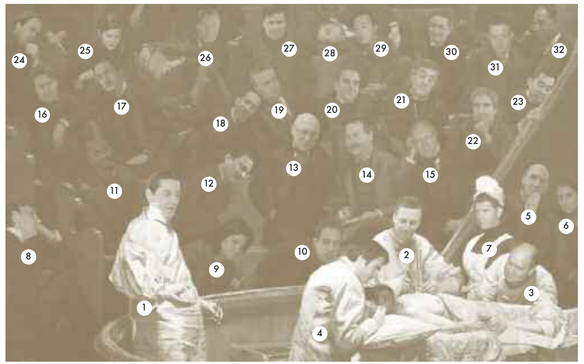
We have great respect for medical science and medical education. It is only through the brilliant and creative efforts of scientists and clinicians that our work is possible. This is why, with permission from the Philadelphia Museum of Art, we were inspired by Thomas Eakins' painting, *The Agnew Clinic* (1889), to portray our own scientists and management team in this year's annual report. Thomas Eakins (1844–1916) was a painter, photographer, sculptor, and fine arts educator. He was one of the greatest American painters of his time, an innovative teacher, and an uncompromising realist.

Eakins was commissioned by the University of Pennsylvania School of Medicine Class of 1889 to paint a portrait of Dr. David Hayes Agnew to commemorate his exemplary career there as a physician and teacher. Dr. Agnew was acclaimed as "the most experienced surgeon, the clearest writer and teacher, the most venerated and beloved man", a tribute that Eakins carved on the finished work's frame. Author of the three-volume *Treatise on the Principles and Practice of Surgery*, Dr. Agnew became an expert in gunshot wounds during the Civil War. When President Garfield was shot by an assassin in 1881, Dr. Agnew acted as the chief surgeon. Students revered him.

What was originally proposed as a three-quarter portrait of the retiring professor quickly became an enormous 6 x 11 ft. painting – the largest of Eakins' career – depicting an operating theater with Dr. Agnew assuming the role of both surgeon and educator. To research the painting, Eakins regularly visited the medical school to watch Dr. Agnew in action, completing the painting in three months. At the presentation of the painting, Dr. Agnew was overwhelmed by his students' applause and admiration. *The Agnew Clinic* was first widely seen at the World's Columbian Exhibition in Chicago in 1893. It is considered to be one of the two most important American paintings on the subject of medicine.

We take the "United" in our name very seriously. Although located in nine offices in five states and four countries, our 360 employees are united in pursuing our corporate strategic objectives to achieve our mission for all of our stakeholders, and to do so with the highest level of ethical conduct. Many individuals occupy key senior and executive management roles at United Therapeutics, and many more employees provide crucial support in a wide variety of positions. The managers included on these pages represent a critical cross-section of those responsible for making the clinical, financial, commercial, strategic and legal decisions for our business.

Senior Management Legend



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Chief Financial Officer & Treasurer

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Executive Vice President, Strategic Planning & General Counsel

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Chief Medical Officer, Lung Rx, Inc.

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Vice President, Finance

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Senior Vice President, Investor Relations & Deputy General Counsel

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9 Alyssa Friedrich
Vice President, Human Resources & Community Relations

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11 Shola Oyewole
Chief Information Officer

12 Raju Penmasta, PhD
Vice President, Research & Process Development

13 David Walsh, PhD
Executive Vice President, Operations & Medical Chemistry

14 Dean Bunce
Executive Vice President, Regulatory Affairs & Compliance

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Senior Vice President, Marketing & Sales

17 Daniel Balda, MD
President & Chief Operating Officer, Medicomp, Inc.

18 Larry Somerville
Senior Vice President, Sales & Marketing, Lung Rx, Inc.

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Vice President, Strategic Operations & Logistics

20 Ken Phares, PhD
Senior Director, Pharmaceutical Development

21 Theodore Staub
Head of Research & Development, Lung Rx, Inc.

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Vice President, Product Development

23 Liang Guo, PhD
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Corporate Controller

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Director, Product Development

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29 Yu-Lun Lin
Director, Business Development & Commercial Informatics

30 Michael Wade, PhD
Senior Vice President, Product Development & Medical Affairs

31 Carl Arneson
Director, Biostatistics & Data Management

32 Ravi Mehra, PhD, CQA
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Remodulin

Advancing New Routes of Delivery Through Innovative Approaches

We focus much of our research and development activity on expanding the ways in which our lead product, Remodulin (treprostinil sodium) Injection, may be delivered to patients. We believe that offering a variety of routes of administration for treprostinil will enable physicians to select the optimal therapy for each PAH patient's needs. In addition, we believe that developing multiple routes of administration for treprostinil may create new possibilities to treat a number of other diseases. We are firmly committed to developing the best medicines possible from the intellectual property we have.

Subcutaneous Remodulin

Remodulin first gained commercial approval in the US in May 2002 as a subcutaneous therapy for patients with PAH. A therapy is administered subcutaneously when it is delivered under the skin.

As a subcutaneous therapy, Remodulin is indicated to diminish symptoms associated with exercise in PAH patients with New York Heart Association (NYHA) Class II, III or IV symptoms. Subcutaneous Remodulin is continuously delivered through a mobile, pager-sized pump that patients refill approximately every 72 hours. No ice packs are required since Remodulin is stable at room temperature. Subcutaneous delivery avoids the systemic infection risk associated with an indwelling intravenous catheter.

We have also successfully demonstrated through a clinical study that PAH patients previously managed with another approved intravenous PAH therapy called Flolan® could be safely and effectively transitioned to subcutaneous Remodulin. As a result, subcutaneous Remodulin is also indicated for transition from Flolan.

Intravenous Remodulin

In November 2004, the FDA approved intravenous Remodulin for those PAH patients who are not able to tolerate subcutaneous delivery due to infusion site pain. A therapy is administered intravenously when it is delivered directly into a patient's vein.

Clinical data presented at major scientific meetings demonstrated that intravenous Remodulin could provide long-term benefits to PAH patients who were new to prostacyclin therapy. Additionally, studies demonstrated that rapid transition from Flolan to intravenous Remodulin was possible, without the need to carefully titrate the two drugs independently. Finally, a 12-week multicenter, randomized, double-blind, placebo-controlled trial of the safety and efficacy of intravenous Remodulin -- the first-ever placebo-controlled study of intravenous therapy in PAH patients -- showed that intravenous Remodulin provided a clinically and statistically significant improvement in patients' symptoms when used as front-line therapy.

There have been many advances in the miniaturization of pumps that are used for intravenous delivery of drugs such as Remodulin. Now, patients are able to use pager-sized pumps for intravenous as well as subcutaneous delivery of Remodulin, an important advance in the treatment of PAH.

Inhaled and Oral Treprostinil

Inhaled Treprostinil

Inhaled treprostinil is a new formulation of treprostinil that can be delivered by inhalation directly to the lungs with potentially less risk of systemic side effects than subcutaneously or intravenously administered formulations. Inhaled treprostinil is an investigational drug, meaning that it has not yet been approved for commercial use. A key goal of our inhaled treprostinil development plan was to create a portable therapy to deliver treprostinil via inhalation for one minute just four times per day. Such a therapy might be used to treat PAH patients earlier in the course of the disease. Inhaled treprostinil has been initially developed to be administered using an ultra-sonic nebulizer. Our ultimate goal is to gain approval for administration of inhaled treprostinil with a handheld, pocket-sized metered dose inhaler.

The TRIUMPH-1 (TReprostinil Sodium Inhalation Used in the Management of Pulmonary Arterial Hypertension) clinical trial of inhaled treprostinil was led by two well-known physicians at their respective centers of excellence: Professor Werner Seeger from the University of Giessen, Germany, and Dr. Lewis Rubin from the University of California, San Diego. With the leadership of these two centers, more than 200 patients with various forms of PAH completed the TRIUMPH-1 clinical trial. On November 1, 2007, we announced that the TRIUMPH-1 clinical trial robustly met its primary endpoint, an increase in exercise capacity measured by a six-minute walk distance test, and that inhaled treprostinil was generally well-tolerated by patients in the trial. We filed an NDA seeking FDA approval for inhaled treprostinil for PAH in June 2008, and we anticipate FDA action on the filing in the second quarter of 2009. We also filed a Marketing Authorization Application for approval in the EU via the centralized filing process.

Oral Treprostinil

The next, and perhaps final, step in the search for the most convenient and effective formulation of treprostinil is our program to commercialize an oral formulation. We have developed a new tablet form of treprostinil that provides sustained release of the drug over approximately 10-12 hours following a single dose, suggesting that twice-a-day dosing may be a viable treatment option.

In October 2006, we commenced two Phase 3 clinical trials of oral treprostinil in patients with PAH to study both dosing and efficacy. The FREEDOM-C trial was a 16-week study of patients currently on an approved background therapy. The FREEDOM-M trial was a 12-week study of patients not on any background therapy. Both trials have been conducted at approximately 60 centers throughout the US and the rest of the world. The FREEDOM-C trial results, announced in November 2008, showed that the study did not achieve statistical significance. Analyses suggest that the inability to dose titrate using higher tablet strengths was a limiting factor that muted the overall treatment effect. Plans are underway to modify the ongoing FREEDOM-M trial to address dose-related tolerability issues by extending enrollment in that study and providing newly enrolled patients with the tablet strength that was best-tolerated by patients in FREEDOM-C. We believe that the development of oral treprostinil will be successful if these dose-related tolerability issues can be resolved. There are currently no approved oral prostacyclin therapies available to patients in the US or the EU. If we are successful in developing oral treprostinil, patients and physicians may be encouraged to use prostacyclin therapy earlier in the PAH disease continuum and for the treatment of other diseases.

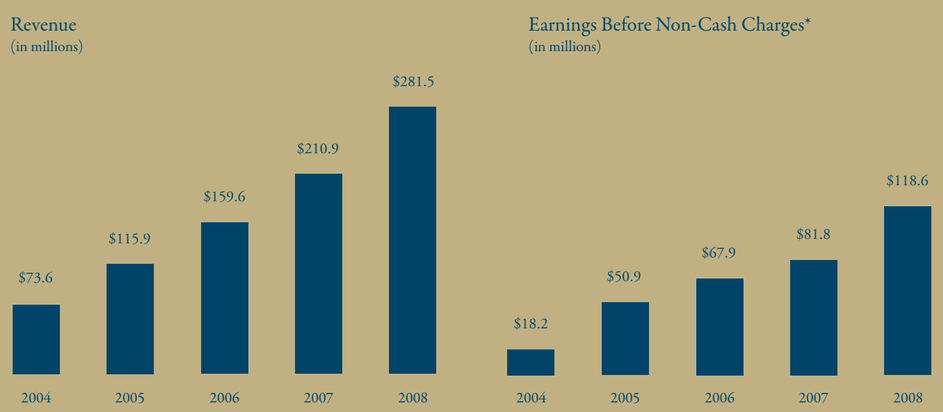
Tadalafil

Our Newest Therapy for Pulmonary Hypertension

In December 2008, Eli Lilly and Company granted us an exclusive license for the right to develop, market, promote and commercialize tadalafil for pulmonary hypertension. Tadalafil is a phosphodiesterase 5 (PDE5) inhibitor and is also the active pharmaceutical ingredient in Cialis, which is exclusively marketed by Lilly for the treatment of erectile dysfunction. Use of PDE5 inhibitors to increase levels of nitric oxide in the body is an established therapeutic approach in the treatment of pulmonary hypertension.

Lilly conducted a successful Phase 3 clinical trial called the PHIRST-1 Study of once-daily tadalafil in PAH patients. The study results showed that a 40 mg dose of tadalafil, administered once daily, achieved clinically important functional improvements and was generally well tolerated in patients with pulmonary hypertension. An NDA for tadalafil for the treatment of pulmonary hypertension was submitted to the FDA in July 2008 and has an anticipated action date of May 24, 2009.

If approved by the FDA, we intend to use our existing sales and marketing team to promote and sell tadalafil for pulmonary hypertension. We expect that the prescribers of tadalafil will include many of the same health care practitioners that are called on by our sales force in connection with our Remodulin marketing activities.



At United Therapeutics, health is our business. And in order to help our patients improve their health, we must ourselves be healthy. We believe that the way to achieve and remain in great corporate health is to do our best to achieve our strategic corporate objectives.

Revenues, Net Income, and Earnings Before Non-Cash Charges

In 2008, United Therapeutics' revenue grew by 33% to $281.5 million and earnings before non-cash charges grew by 46%. Notwithstanding this growth, United Therapeutics realized a net loss of $42.8 million in 2008 for the first year since 2003, primarily driven by a one-time, upfront payment of $150 million to Lilly for the rights to commercialize tadalafil.

Unrestricted Cash and Investments

United Therapeutics had unrestricted cash, cash equivalents and marketable investments totaling $336.3 million as of December 31, 2008.

Earnings Before Non-Cash Charges*

*A reconciliation of net income (loss) to earnings before non-cash charges is presented below (in thousands):

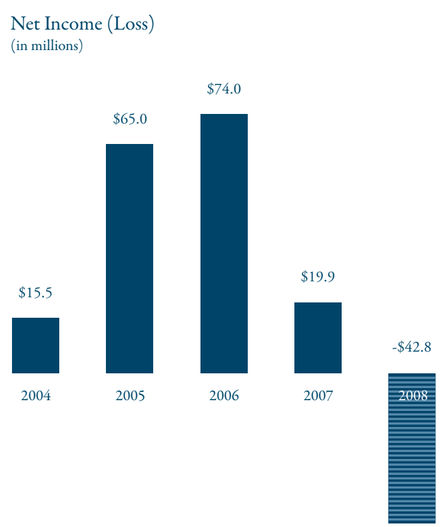
	2004	2005	2006	2007	2008
Net Income (loss) as reported	$ 15,449	$ 65,016	$ 73,965	$ 19,859	$ (42,789)
Add (subtract) non-cash and one-time charges					
Income tax expense (non-cash)	0	(17,679)	(34,361)	(4,831)	(31,137)
License fees	0	0	0	11,013[1]	150,000[2]
Depreciation and amortization	2,381	2,534	2,713	3,427	4,536
Impairment	0	0	2,024	3,582	1,595
Share-based compensation	329	983	23,513	48,766	36,393
Earnings before non-cash charges	$ 18,159	$ 50,854	$ 67,854	$ 81,816	$ 118,598

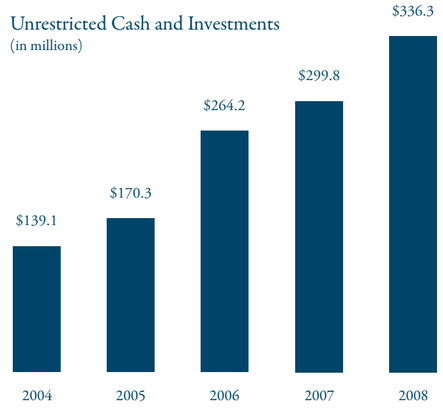
[1] During the year ended December 31, 2007, we issued 200,000 shares of our common stock to Toray Industries, Inc. Based on the closing price of our common stock, the fair value of the shares issued was expensed as research and development.

[2] During the year ended December 31, 2008, we made a one-time payment of $150.0 million to Lilly related to our agreements to commercialize tadalafil. We also issued approximately 3.2 million shares of our common stock to Lilly for $150.0 million under a related stock purchase agreement. Since there was no net impact on our cash flows associated with these transactions, we have presented related up-front fees as an adjustment to net loss.

Earnings before non-cash charges is a non-GAAP financial measure. We use earnings before non-cash charges internally for operating, budgeting and financial planning purposes and as a metric to determine the efficiency of our operations. We believe our investors' understanding of our performance is enhanced by disclosing this measure. The presentation of this non-GAAP financial measure is not to be considered in isolation or as a substitute for our financial results prepared in accordance with GAAP.

Selected Financial Results

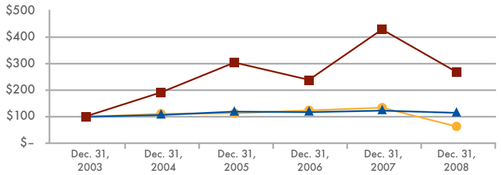




Stock Price Performance

The following graph and table set forth United Therapeutics' total cumulative stockholder return over the past five years as compared to the cumulative returns of the NASDAQ US Stock Market Index and the NASDAQ Pharmaceutical Stocks Index. Total stockholder return assumes $100.00 invested at the beginning of the period in United Therapeutics common stock, the stocks represented in the NASDAQ US Stock Market Index and the stocks represented in the NASDAQ Pharmaceutical Stocks Index, respectively.

Comparison of the Five-Year Cumulative Total Return



	12/31/03	12/31/04	12/31/05	12/31/06	12/31/07	12/31/08
United Therapeutics Corporation	$100.00	$196.73	$301.18	$236.91	$425.49	$272.55
NASDAQ US Stock Market Index	$100.00	$108.84	$111.16	$122.11	$132.42	$63.80
NASDAQ Pharmaceutical Stocks Index	$100.00	$106.51	$117.29	$114.81	$120.74	$112.34

Corporate Information

MANAGEMENT
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Roger Jeffs, Ph.D.
President and Chief Operating Officer

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Chief Financial Officer and Treasurer

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* United Therapeutics' Management

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INVESTOR RELATIONS
Andrew Fisher, J.D.
Senior Vice President,
Investor Relations and
Deputy General Counsel

TRANSFER AGENT AND REGISTRAR
BNY Mellon Shareowner Services
480 Washington Boulevard
Jersey City, New Jersey 07310
(800) 522-6645
From outside the US and Canada:
(201) 680-6578
TDD: (800) 231-5469
http://www.bnymellon.com/shareowner/isd

ATTORNEYS
Gibson Dunn & Crutcher LLP
1050 Connecticut Avenue N.W.
Washington, D.C. 20036
Tel: (202) 955-8500
Fax: (202) 467-0539

AUDITORS
Ernst & Young LLP
8484 Westpark Drive
McLean, Virginia 22102
Tel. (703) 747-1000
Fax. (703) 747-0100

CORPORATE HEADQUARTERS
1110 Spring Street
Silver Spring, Maryland 20910
Tel. (301) 608-9292
Fax. (301) 608-9291

RESEARCH AND DEVELOPMENT
55 T.W. Alexander Drive
P.O. Box 14186
Research Triangle Park, North Carolina 27709
Tel. (919) 485-8350
Fax. (919) 485-8352

LEGAL AND GOVERNMENTAL AFFAIRS
1735 Connecticut Avenue N.W.
Washington, D.C. 20009
Tel. (202) 483-7000
Fax. (202) 483-4005

About the Artist

The works displayed throughout this annual report are abstract paintings by Judy Perry. Judy Perry has been exhibiting her work in the US for twenty years. Her boldly colored oil paintings are based in nature and reflect the power of the natural world, its vibrancy and beauty. Each painting is a subtle reminder that relationship and connection are fundamental to building and nourishing our lives. She lives in a small farmhouse in Maine near the Penobscot Bay. For more information about Judy Perry and her artwork, please visit: http://www.judyperrystudio.com

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Medicomp, Inc.
7845 Ellis Road
Melbourne, Florida 32904
Tel. (321) 676-0010
Fax. (321) 676-2282
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Silver Spring, MD 20910
Phone: (301) 608-9292
Fax: (301) 608-1139
www.lungrx.com

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United Therapeutics Europe, Ltd.
Unither House
Curfew Bell Road
Chertsey, Surrey KT16 9BA
United Kingdom
Tel. +44.1483.207780
Fax. +44.1483.207781

United Therapeutics
EUROPE · LIMITED

Unither Biothèque Inc.
101, rue Du Moulin bureau 202-B
Magog, Quebec J1X 4A1
Canada
Tel. (819) 843-9138
Fax. (819) 843-4287

Unither Biothèque
www.unither.com

Unither Virology, LLC
1733 Connecticut Avenue N.W.
Washington, DC 20009
Tel. (202) 986-2342
Fax. (202) 986-2342

Unither Virology
www.unither.com

Unither Neurosciences, Inc.
82 Pearl Street
Burlington, VT 05402
Tel. (802) 651-0147
Fax. (802) 651-1057

Unither Neurosciences
www.unither.com

Unither Therapeutik GmbH
Kreuzfeldring 17
63820 Elsenfeld
Germany
Tel.: (+49) (0) 6022-610 620
Fax: (+49) (0) 6022-610 6299

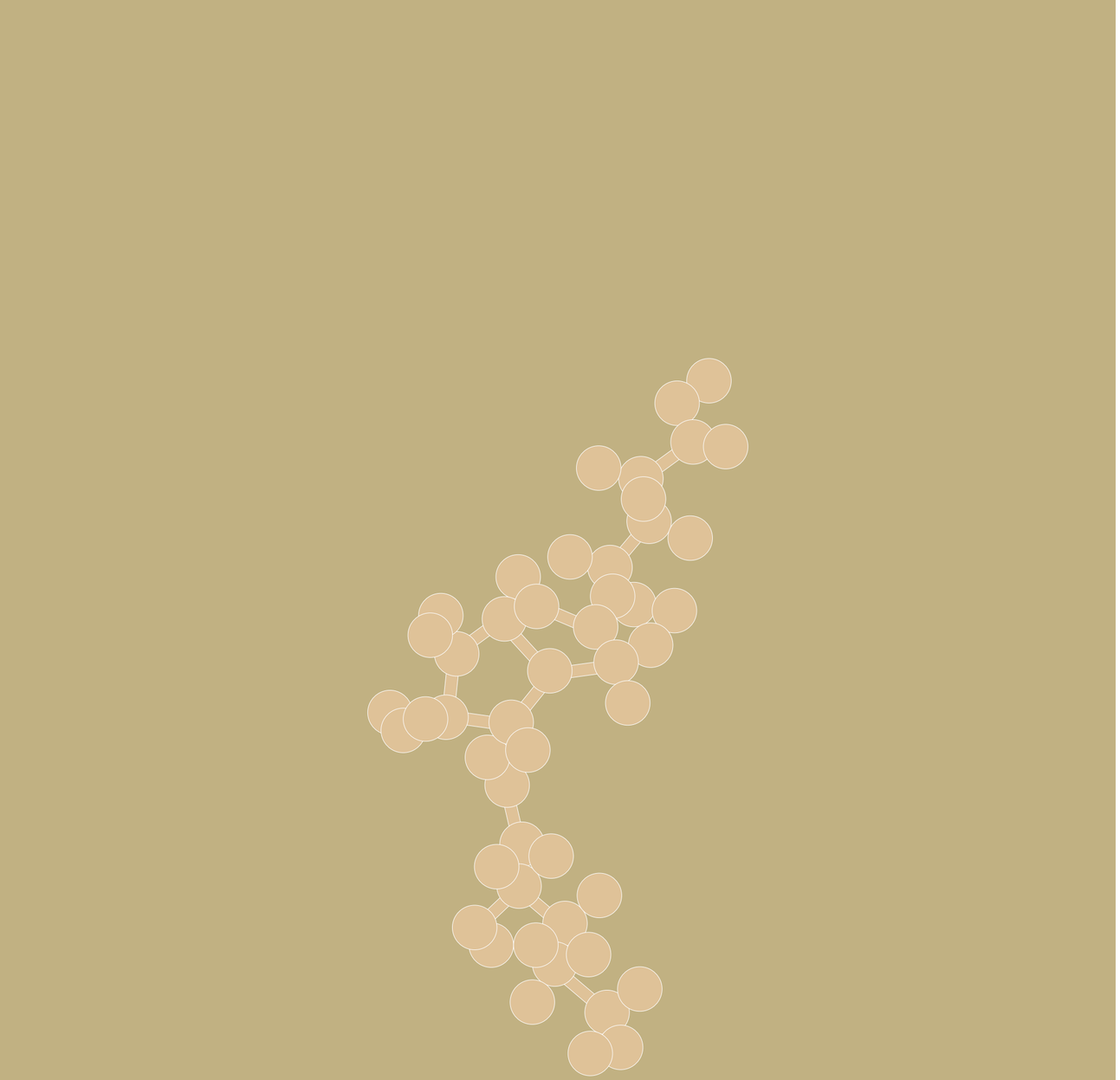
Unither Therapeutik GmbH

COMMON STOCK
Listed on the NASDAQ Global Select
Market under trading symbol "UTHR"

ANNUAL MEETING
June 26, 2009

CORPORATE WEBSITE
www.unither.com

GRAPHIC DESIGN
GB Design • (949) 548-3021
gbdesign@ca.rr.com



UNITED
SECURITIES AND EXC
WASHINGTO

FORM

(Mark One)

☒ **ANNUAL REPORT PURSUANT TO
SECURITIES EXCHANGE ACT O**

For the fiscal year end

O

☐ **TRANSITION REPORT PURSUAN
SECURITIES EXCHANGE ACT O**

For the transition period from

Commission file

United Therapeu

(Exact Name of Registrant

Delaware
(State or Other Jurisdiction of
Incorporation or Organization)

1110 Spring Street, Silver Spring, MD
(Address of Principal Executive Offices)

(301) 6
Registrant's Telephone Nu

Securities registered pursuant

Title of each class
Common Stock, par value $.01 per share and associated preferred stock purchase rights

Securities registered pursuant

No
(Title o

Indicate by check mark if the registrant is a well-known season
Act. Yes ☒ No ☐

Indicate by check mark if the registrant is not required to file
Act. Yes ☐ No ☒

Indicate by check mark whether the registrant (1) has filed all
Exchange Act of 1934 during the preceding 12 months (or for such s
and (2) has been subject to such filing requirements for the past 90

Indicate by check mark if disclosure of delinquent filers pursua
contained herein, and will not be contained, to the best of registrant
incorporated by reference in Part III of this Form 10-K or any amen

Indicate by check mark whether the registrant is a large accele
reporting company. See definitions of "large accelerated filer," "acce
the Exchange Act. (Check one):

Large accelerated filer ☒ Accelerated filer ☐ Non-accelerated
(Do not check if a
reporting comp

Indicate by check mark whether the registrant is a shell compa

The aggregate market value of the Common Stock held by nor
2008, as reported by the NASDAQ National Market was approximat

**The number of shares outstanding of the issuer's common stoc
26,435,865**

DOCUMENTS INCORPO

Portions of the registrant's definitive proxy statement for the re
on June 26, 2009, are incorporated by reference in Part III of this Fo

TABLE OF CONTENTS

Unless the context requires otherwise or unless otherwise noted, all references in this Annual Report on Form 10-K to "United Therapeutics" and to the "company", "we", "us" or "our" are to United Therapeutics Corporation and its subsidiaries.

Our Products

Our product portfolio includes the following as of December 31, 2008:

Product	Mode of Delivery	Indication/Market	Current Status	Our Territory
Remodulin	Continuous subcutaneous	Pulmonary arterial hypertension	Commercial in the U.S., most of Europe*, Canada, Israel, Australia, Mexico, Argentina and Peru; MAA filed with EMEA	Worldwide
Remodulin	Continuous intravenous	Pulmonary arterial hypertension	Commercial in the U.S., Canada, Israel, Mexico, Argentina and Peru; MAA filed with EMEA	Worldwide
CardioPAL® SAVI and Decipher Cardiac Monitors	Telemedicine	Cardiac arrhythmias and ischemic heart disease	Commercial	Worldwide
Inhaled Treprostinil	Inhaled	Pulmonary arterial hypertension	NDA filed with FDA; MAA filed with EMEA	Worldwide
Oral Tadalafil	Oral	Pulmonary hypertension	NDA filed with FDA	United States
Oral Treprostinil	Oral	Pulmonary arterial hypertension	Phase III	Worldwide
Beraprost-MR	Oral	Pulmonary arterial hypertension	Phase II	North America/Europe
3F8 MAb	Intravenous	Neuroblastoma	Phase II	Worldwide
Oral Treprostinil	Oral	Peripheral vascular disease	Phase II	Worldwide
CardioPAL SAVI Wireless Cardiac Event Monitors	Telemedicine	Cardiac arrhythmias and ischemic heart disease	Phase II	Worldwide
Inhaled Treprostinil	Inhaled	Pulmonary arterial hypertension associated with Idiopathic pulmonary fibrosis	Phase I	Worldwide
Inhaled Treprostinil with AERx Essence®	Inhaled	Pulmonary hypertension	Phase I	Worldwide
8H9 MAb	Intravenous	Metastatic brain cancer	Phase I	Worldwide
Celgosivir	Oral	Hepatitis C	Phase I	Worldwide
Miglustat	Oral	Hepatitis C	Pre-Clinical	Worldwide
Glycobiology Antiviral Agents	Oral	Hepatitis C and other infectious diseases	Pre-Clinical	Worldwide

* We have obtained approval in 23 member countries of the European Union (EU), as well as European countries that are not members of the EU. We have received formal approval letters and pricing approval in most of these countries.

A long-term outcome study published in the *European Respiratory Journal* (vol. 28, Number 6; December 2006) demonstrated improved survival with Remodulin therapy when compared to predicted survival (NIH registry formula) over a four-year period. One-, two-, three- and four-year survival was 87%, 78%, 71%, and 68%, respectively, for all 860 patients in the study (including 130 patients who received Remodulin in combination with other PAH therapies) and 88%, 79%, 73%, and 70%, respectively, for 730 of the patients in the study who received only Remodulin. In patients with idiopathic PAH for whom baseline hemodynamics (measurement of bloodflow and pressures) were available (332 patients), survival was 91%, 82%, 76%, and 72% at years one through four, respectively. This compares to respective predicted survival estimates of 69%, 56%, 46%, and 38% over the four-year period based on the NIH registry formula.

Flolan, the first FDA-approved prostacyclin analogue for PAH, is delivered continuously through a surgically implanted intravenous catheter connected to an external pump. Flolan is approved for the treatment of patients with certain subsets of late-stage PAH. We believe Remodulin provides patients with a less invasive alternative to Flolan. In contrast to Flolan, Remodulin is stable at room temperature and lasts significantly longer inside the human body. These attributes allow for safer and more convenient drug delivery to patients. Unlike Flolan, Remodulin can be delivered by subcutaneous infusion with a pager-sized miniature pump device. Subcutaneous delivery of Remodulin also eliminates the risk of central venous catheter infection and the hospitalization required to begin intravenous infusion. Remodulin's extended presence in the body may also reduce the risk of rebound PAH, and possibly death, if treatment is abruptly interrupted. The stability of Remodulin also allows it to be packaged as an aqueous solution, so patients do not have to mix the drug, as they do with Flolan. Remodulin can be continuously infused for up to 48 hours before refilling the infusion pump, unlike Flolan, which must be mixed and refilled every 24 hours. Treprostinil sodium, the active ingredient in Remodulin, is highly soluble in an aqueous solution and therefore Remodulin can be manufactured at highly concentrated solutions. This allows therapeutic concentrations of Remodulin to be delivered at low flow rates via miniaturized infusion pumps for both subcutaneous and intravenous infusion. Lastly, Remodulin does not require the patient to continuously keep the drug cool even during infusion. This eliminates the need for cooling packs or refrigeration to keep it stable, as is required with Flolan due to Flolan's chemical instability at room temperature. In June 2008, the FDA approved a generic version of Flolan, developed by GeneraMedix, Inc., that is stable at room temperature, but still shares all of Flolan's other inconvenient attributes including, but not limited to, risk of central venous catheter infection, required hospitalization at the start of treatment, shorter half-life increasing risk of rebound PAH, mixing, greater frequency of pump refills and larger pump size.

There are noteworthy adverse events associated with Remodulin infusion. When infused subcutaneously, Remodulin causes infusion site pain and reaction (redness and swelling) in most patients to varying degrees. Patients who cannot tolerate subcutaneous Remodulin may instead use it intravenously. Intravenous Remodulin is delivered continuously by an external pump through a surgically implanted central venous catheter, similar to Flolan. When delivered intravenously, Remodulin bears the risk of a serious bloodstream infection known as sepsis, as does Flolan.

FDA Review of Subcutaneous Remodulin

In March 2000, we completed an international, randomized, placebo-controlled, double-blind study of subcutaneous Remodulin involving a total of 470 patients with PAH. Half of the patients received Remodulin subcutaneously for 12 weeks, while the other half received a placebo. The study data showed that patients who received Remodulin had significant improvement in important clinical endpoints. These clinical endpoints included a composite index that measured exercise capacity and shortness of breath, cardiopulmonary hemodynamics and the signs and symptoms of the disease. Based on the favorable results of this study, we filed an NDA with the FDA in late 2000. In May 2002, the FDA approved Remodulin, under Subpart H regulations, as a continuous subcutaneous infusion for the treatment of PAH in patients with NYHA class II-IV symptoms to diminish symptoms associated with

inquiry at seven centers into a report of increased blood stream infections (sepsis), particularly gram-negative blood stream infections, among PAH patients treated with intravenous Remodulin as compared to intravenous Flolan. The SLC guidelines noted that the CDC observations were hypothesis-generating and did not permit definitive or specific conclusions. The SLC reminded physicians of the need to be aware of the range of possible gram-negative and gram-positive infectious organisms in patients with long-term central venous catheters and to treat them appropriately. The risk of sepsis was already noted in the Remodulin package insert. In February 2008, the FDA approved a revised package insert for Remodulin that more fully described the associated infection risk and appropriate techniques to be practiced when preparing and administering Remodulin for intravenous infusion.

International Regulatory Review of Subcutaneous and Intravenous Remodulin

Remodulin for subcutaneous use is approved in countries throughout the world. We used the mutual recognition process to obtain approval of subcutaneous Remodulin in the EU. The mutual recognition process is described more fully in the section entitled *Governmental Regulation* below. The mutual recognition process for subcutaneous Remodulin was completed in August 2005, with positive decisions received from most EU member countries. We withdrew our applications in Ireland, Spain and the United Kingdom following a request for additional documentation from these countries. We anticipate resubmitting these applications following approval of intravenous Remodulin in the EU. Licenses and pricing approvals have been received in most EU member countries. In addition, we have submitted a variation of the license for approval of intravenous Remodulin in the EU through the mutual recognition process, as we are required to follow the same approval process used for the approval of subcutaneous Remodulin. The license variation for intravenous Remodulin is currently under review by the host nation, France, which has notified us that it is not currently satisfied with our application. We are working to address their concerns and believe that we will eventually receive commercial approval for intravenous Remodulin in at least some EU member countries. In the meantime, we will continue to sell (but not market) Remodulin under the named-patient system in EU member countries where we are not approved. Under the named-patient system, we are permitted to import Remodulin into EU member countries for sale to hospitals for use in treating specifically identified patients.

Sales and Marketing

Our marketing strategy for Remodulin is to use our sales and marketing teams to educate the prescriber community to increase PAH awareness and awareness of our products. The sales and marketing team consisted of approximately 80 employees as of December 31, 2008, up from approximately 65 employees as of December 31, 2007. We anticipate continued growth in our sales force in the near-term as we position our business for further expansion. We divide our domestic sales force into two teams. One sales team is primarily responsible for medical practice accounts that are historical Remodulin prescribers. The other sales team is primarily responsible for medical practice accounts that have not historically prescribed Remodulin. The efforts of our sales and marketing teams are supplemented by our specialty pharmaceutical distributors. For additional information about our agreements with our distributors, see the next section entitled *Domestic Distribution of Remodulin*. Our distributors are experienced in all aspects of using and administering chronic therapies, as well as patient care, the sale and distribution of these medicines and reimbursement from insurance companies and other payers. Outside of the United States, we have entered into exclusive distribution agreements covering most of Europe, South America, Israel, and parts of Asia. Sales in Canada are currently conducted under the management of our wholly-owned subsidiary, Unither Biotech Inc., through a national specialty pharmaceutical wholesaler. We are working with our current distributors to expand Remodulin sales into other countries in which they have distribution rights.

in four daily inhalation sessions with a maximum dose of approximately 54 micrograms per session. The primary endpoint of the trial was the peak six-minute walk distance (6MWD) improvement test, which is a typical benchmark test of cardiovascular health. The 6MWD test measures the distance a patient walks in six minutes on a treadmill at the start of the trial as compared to additional pre-specified points in time during the trial in order to detect any improvement in the distance the patient is able to walk. This trial, TRIUMPH-1 (**TR**eprostinil Sodium **I**nhalation **U**sed in the **M**anagement of **P**ulmonary Arterial **H**ypertension), was conducted at approximately 36 centers in the United States and Europe.

In November 2007, we announced the completion of our TRIUMPH-1 trial. The study population consisted of 235 patients. Ninety-eight percent of patients were classified as New York Heart Association (NYHA) Class III. Patients in the trial were affected by PAH of varied etiologies, including idiopathic or familial PAH (~55%), collagen vascular disease associated PAH (~35%), and PAH associated with HIV, anorexigens (appetite suppressants) or other associated conditions (~10%). Mean baseline 6MWD was approximately 350 meters.

The primary efficacy endpoint of the trial was the 6MWD at 12 weeks measured at peak exposure, defined by the trial protocol as 10-60 minutes after inhalation of treprostinil, relative to baseline. Analysis of the TRIUMPH-1 results demonstrated an improvement in median 6MWD of approximately 20 meters ($p<0.0005$, using the Hodges-Lehmann estimate and non-parametric analysis of covariance in accordance with the trial's pre-specified statistical analysis plan), in patients receiving inhaled treprostinil as compared to patients receiving placebo.

At trough exposure, which was defined by the trial protocol as a minimum of four hours after inhalation of treprostinil, the treatment-related change in 6MWD at week 12 relative to baseline was also significantly improved, with an increase in median 6MWD of approximately 14 meters ($p<0.01$). Additionally, the 6MWD at week six measured at peak exposure relative to baseline was significantly improved, with an increase in median 6MWD of approximately 18 meters ($p<0.0005$). Quality of life was assessed using the Minnesota Living with Heart Failure Questionnaire. Both the Global Score ($p<0.03$) and the physical score ($p<0.04$) were significantly improved. NT-Pro BNP, a biomarker correlated with right ventricular function, also improved significantly at week 12 ($p<0.002$).

Analysis of other secondary endpoints, including change in Borg Dyspnea Scale rating (shortness of breath test), NYHA functional class, time to clinical worsening (as defined by death, transplant, the need for atrial septostomy (surgical opening of the septum), hospitalization due to PAH, or initiation of another approved PAH therapy, and the 6MWD at treatment day one, did not differ significantly between the inhaled treprostinil and placebo groups ($p>0.05$).

Inhaled treprostinil was generally well tolerated in the trial and adverse events appeared to be similar to those previously reported for treprostinil or due to administration by inhalation. The most common adverse events seen in the trial were transient cough, headache, nausea, dizziness and flushing. All patients in the trial had the option to continue receiving inhaled treprostinil in an open-label continuation study after completion of the 12-week study period. Of the 212 patients who completed the 12-week study period, approximately 200 patients entered the open-label continuation study. Approximately 125 patients continue to be treated with inhaled treprostinil, with the longest duration of treatment exceeding two years.

In June 2008, we submitted an NDA to obtain FDA approval to market inhaled treprostinil for the treatment of PAH in the United States with an expected action date of April 30, 2009. The Optineb® nebulizer (the ultra-sonic nebulizer that was exclusively used for administration of inhaled treprostinil in the TRIUMPH-1 trial) was submitted for approval as part of this filing. The Optineb is manufactured by NEBU-TEC International Med Products Eike Kern GmbH (NEBU-TEC), a German company. The Optineb is CE-marked in Europe, which means that NEBU-TEC asserts that the device conforms to EU health and safety requirements. In December 2008 we filed an MAA for inhaled treprostinil in the EU using the centralized filing process. The standard time for review of an NDA by the FDA and of an MAA by the EMEA is generally 10 to 12 months. See the section entitled *Governmental Regulation* below for further discussion on the centralized filing process for the EU.

In October 2006, we commenced two Phase III multi-national, placebo-controlled clinical trials of oral treprostinil in patients with PAH to study both dosing and efficacy. The FREEDOM-C trial was a 16-week study of patients on approved background therapy using a PDE5 inhibitor, such as Revatio, or an ERA, such as Tracleer, or a combination of both. The FREEDOM-M trial is a 12-week study of patients who are not on any background therapy. Both trials have been conducted at approximately 60 centers throughout the United States and the rest of the world. During these trials, patients are administered oral treprostinil or placebo twice a day. The dosage initially began at 1 mg twice daily for both trials but during the trial, 0.5 mg and 0.25 mg tablet doses became available. The maximum dose is set at 16 mg twice daily for the FREEDOM-C trial and 12 mg twice daily for the FREEDOM-M trial, based on symptomatic benefit and tolerability. The primary study endpoint of the trials is 6MWD.

We commenced both trials using a 1 mg tablet, but during the open-label extension trial (and associated pharmacokinetic substudy) we discovered that the treprostinil concentrations were higher in PAH patients than in healthy individuals due to the difference in absorption rate between these two populations. This difference in absorption rate led to a number of discontinuations by patients randomized to receive drug due to tolerability-related side effects, including nausea, jaw-pain and headaches. As a result, we introduced a 0.5 mg tablet in July 2007 to enable more gradual dose titration (increase). The 0.25 mg tablet was introduced into the trials in April 2008.

In mid-November 2008, we announced that the FREEDOM-C trial did not meet statistical significance for its primary endpoint. The study population consisted of 354 patients. The majority (~75%) of patients were World Health Organization (WHO) Class III of varied etiologies, including idiopathic or familial PAH (~65%), collagen vascular disease associated PAH (~25%), and PAH associated with HIV or other associated conditions (~10%). Mean baseline 6MWD was approximately 345 meters.

The placebo-corrected median change in 6MWD at week 16 was 11 meters ($p=0.072$). A statistically significant treatment effect was observed at week 12, with a placebo-corrected median change in 6MWD of 13 meters ($p=0.015$).

Exploratory analyses suggest that the inability to dose titrate was a limiting issue that suppressed the overall treatment effect. Of the 174 patients who received active drug, 25 patients discontinued due to an adverse event and 33 patients completed the trial but were unable to titrate their doses above 1 mg twice daily. Accordingly, 58 (33%) of the patients in the active treatment group were only able to maintain a suboptimal dose of below 1 mg twice daily. Adverse events that led to discontinuation or inability to dose-escalate included headache, nausea and vomiting. Dropouts were most common in patients who only had access to the 1 mg tablets during the study, which was the only size tablet available when the trial began. There were no discontinuations among patients who had access to the 0.25 mg tablet.

Preliminary analysis of other secondary efficacy measures, including change in combined 6MWD, Borg dyspnea score and Dyspnea-Fatigue index demonstrated statistically significant improvements ($p<0.05$) compared to placebo. Other secondary efficacy measures including change in WHO functional class, time to clinical worsening, and PAH signs and symptoms, did not differ significantly between patients administered oral treprostinil versus placebo ($p>0.05$).

Enrollment in FREEDOM-M was closed on October 31, 2008, with 171 patients enrolled in the trial. However, based on what we learned from the FREEDOM-C trial relating to patient tolerability of our three different tablet strengths of oral treprostinil, we submitted a protocol amendment to the FDA on February 20, 2009, seeking to increase the number of patients enrolled in FREEDOM-M by approximately 140 patients. These new patients will start the study on the 0.25 mg tablet, which we know from the FREEDOM-C trial is the best-tolerated tablet strength.

that has the effect of relaxing pulmonary blood vessels, which is also a cause of erectile dysfunction. NO works to relax pulmonary blood vessels by increasing intracellular levels of an intermediary known as cGMP. An established therapeutic approach in the treatment of PAH is to use PDE5 inhibitors to increase levels of NO in patients to inhibit the degradation of cGMP.

Revatio is the only currently approved PDE5 inhibitor for the treatment of PAH, and is marketed by Pfizer. Sildenafil, the active ingredient in Revatio, is also the active ingredient in Viagra®, which is also marketed by Pfizer for erectile dysfunction. Revatio has a three times daily dosing regimen. We expect tadalafil to have a once daily dosing regimen.

The PHIRST Study, which was conducted by Lilly, was a Phase III 16-week, double-blind, placebo-controlled efficacy and safety study of once-daily tadalafil in PAH patients. 405 patients with idiopathic PAH or PAH associated with connective tissue disease, anorexigen use, HIV, atrial septal defect, or surgical repair of congenital left-to-right shunt were randomized to placebo or tadalafil (2.5, 10, 20 or 40 mg) orally once daily as monotherapy or as add on therapy to bosentan, the active ingredient in Tracleer. Demographics, clinical data, and health related quality of life (HRQoL) data were collected at baseline. Clinical and HRQoL data were again collected at weeks 4, 8, 12 and 16. Cardiopulmonary hemodynamics were conducted in a subset of patients (n=93).

The 40mg dose of tadalafil was shown to increase 6MWD compared to placebo ($p<0.001$ +41.1m versus +9.2m). Changes in WHO functional class and Borg dyspnea score did not differ significantly compared to placebo. The 40 mg dose also delayed the time to clinical worsening compared to placebo ($p<0.05$, relative risk reduction 68% less than placebo). Compared with placebo, improvements were observed in patients treated with 40 mg tadalafil-treated patients in six out of the eight SF-36 domains ($p<001$), the EuroQol (EQ-5D) U.S. and U.K. index scores, and for the visual analog scale (VAS) (all $p<0.05$). It was also shown to increase cardiac output (0.6 L/min) and reduced pulmonary artery pressures (−4.3mmHg) and pulmonary vascular resistance (−209dyn.s/cm^5) compared to baseline ($p<0.05$). The most common treatment-related adverse event reported with tadalafil was headache (32% versus 15% with placebo). Discontinuation due to adverse events was low (tadalafil 11% versus placebo 16%). Of the 405 patients in the trial, 189 (47%) were not taking concomitant bosentan (the ERA marketed as Tracleer). In these patients, tadalafil 40mg dose increased 6MWD compared to placebo ($p<0.10$+42.2m versus −2.9m).

Lilly submitted an NDA to the FDA based on these significant trial results with an expected action date of May 24, 2009.

On December 18, 2008, we completed the transactions contemplated by several agreements we entered into with Lilly and one of its subsidiaries on November 14, 2008, including a license agreement, a manufacturing and supply agreement and a stock purchase agreement. Pursuant to the license agreement, Lilly granted us an exclusive license for the right to develop, market, promote and commercialize tadalafil for the treatment of pulmonary hypertension in the United States and Puerto Rico. In connection with the license agreement, we also entered into a stock purchase agreement and a manufacturing and supply agreement. Pursuant to the manufacturing and supply agreement, Lilly agreed to manufacture tadalafil and distribute it via its wholesaler network, in the same manner that it distributes its own pharmaceutical products. In December 2008, upon closing, we made a one-time payment of $125.0 million under the manufacturing and supply agreement and a one-time payment of $25.0 million under the license agreement. Pursuant to the stock purchase agreement, we issued 3,150,837 shares of our common stock to Lilly from treasury for an aggregate purchase price of $150.0 million. See the section entitled *Strategic Licenses and Relationships* below for more details on these agreements.

We intend to use our existing sales and marketing team to promote and sell tadalafil. We expect that the prescribers of tadalafil will include most of the same health care practitioners upon whom our sales force currently focuses on with respect to marketing our other PAH therapies.

These products were being developed by AltaRex to treat various forms of cancer, including ovarian, prostate, lung, breast, multiple myeloma and gastrointestinal cancers. The lead product, OvaRex® MAb for the treatment of advanced ovarian cancer, had completed Phase II studies when we entered into the license agreement.

Ovarian cancer is the deadliest form of women's reproductive cancer and is the fifth leading cause of cancer death among women in the United States. Over 25,000 cases of ovarian cancer are diagnosed in the United States every year, with over 16,000 women dying of the disease annually.

In December 2007, we announced the completion of our two pivotal trials of OvaRex. Analysis of the results demonstrated that the studies failed to reach statistical significance.

The identical studies, known as IMPACT I and II (**IM**munotherapy **P**ivotal ov**A**rian **C**ancer **T**rial), were randomized, double-blind, placebo-controlled trials conducted at over 60 centers across the United States. The studies enrolled 367 ovarian cancer patients and assessed the efficacy of OvaRex mono-immunotherapy during the so-called "watchful waiting" period following front-line carboplatin-paclitaxel based chemotherapy. The program sought to confirm data observed in a subset analysis of a prior randomized Phase II study, which suggested the potential of OvaRex to extend the time to disease relapse among patients who had successfully completed front-line therapy. The studies were well balanced in terms of patient demographics and the safety profile and quality of life were similar between active and control populations. The studies demonstrated no difference between active (standard of care followed by OvaRex) and control (standard of care followed by placebo) populations. The results of IMPACT I and II were consistent with each other.

Based on the results of the IMPACT I and II trials, we decided to terminate our license agreement with AltaRex and cease further development of the entire platform of antibodies licensed thereunder. We have incurred approximately $2.0 million in total closeout costs for this program and do not anticipate significant additional future costs related to this program.

Products to Treat Infectious Diseases—Glycobiology Antiviral Agents

In March 2000, we entered into a license agreement with Synergy Pharmaceuticals, Inc. (Synergy), to obtain the exclusive worldwide rights to certain patents relating to novel antiviral compounds. Synergy was working with the Glycobiology Department at the University of Oxford to develop antiviral compounds, such as miglustat. We have the exclusive right to commercialize miglustat for certain infectious diseases and viruses. In 2003, by mutual consent, we terminated our license agreement with Synergy. We are now working directly with Oxford University on the development of new antiviral compounds. These glycobiology antiviral agents are small molecules that may be effective as oral therapies for the treatment of hepatitis B and C infections, as well as dengue fever, Japanese encephalitis and other infectious diseases. Currently, many of these agents are undergoing laboratory testing, and new agents are also being synthesized.

In January 2009, we entered into a license agreement with MIGENIX, Inc. (MIGENIX), a Canadian company, to obtain the exclusive worldwide rights to develop and commercialize celgosivir for hepatitis C and other viral diseases. Celgosivir is a novel antiviral agent that appears to be a potent inhibitor of alpha-glucosidase I, a host enzyme that is critical to the folding of viral proteins. Inhibition of alpha-glucosidase I leads to improper viral folding, which, in turn, prevents viral replication. This effect has many potential therapeutic applications. The rights to develop and commercialize celgosivir are contingent upon our acceptance of further preclinical studies to be performed by MIGENIX to assess celgosivir's utility in combating the hepatitis C virus. If the results of the studies are acceptable to us, MIGENIX will be entitled to milestone payments based upon the achievement of certain clinical and regulatory events and royalties based on net sales of celgosivir, if commercialized.

Strategic Licenses and Relationships

Northern Therapeutics, Inc.

In December 2000, we formed a new company in Canada, Northern Therapeutics, Inc. (Northern), in conjunction with the inventor of a new form of autologous gene therapy (gene transfer using materials derived from a patient's own body instead of foreign materials such as viruses) for the treatment of PAH and other diseases. Northern is currently conducting a Phase I gene therapy trial in Canada and, until February 2006, was distributing Remodulin in Canada.

In October 2006, Northern agreed to grant us an exclusive license to develop and commercialize the autologous gene therapy in the United States for PAH. Under this license, we are required to make incremental milestone payments to Northern depending on patient enrollment. If the planned 18 patient Phase I trial is successfully enrolled, such payments will total $1.5 million. We did not incur any expenses associated with this agreement during 2008. For the twelve months ended December 31, 2007, we incurred approximately $150,000 of expenses related to Northern. If the Phase I trial is successfully completed, we will assume the development program and related costs for the United States market. Northern will receive royalty payments following commercialization. As part of this agreement, we terminated the Remodulin distribution agreement with Northern for Canada. Our Canadian wholly-owned subsidiary, Unither Biotech Inc., contracts with a specialty distributor to distribute Remodulin in Canada. See the section entitled *Sales and Marketing* above for more information on our distribution arrangements in Canada.

Due to our $5.0 million investment, we currently own approximately 68% of Northern, but only 49% of the voting rights of its common stock. Because minority shareholders possess substantive participating rights as defined under EITF Issue No. 96-16, *Investors Accounting for an Investee when the Investor Has a Majority of the Voting Interest but the Minority Shareholders or Shareholders Have Certain Approval or Veto Rights*, we are precluded from controlling Northern and thus do not consolidate Northern's financial statements with our own.

NEBU-TEC Supply Agreement

In June 2004 and September 2006, we entered into Clinical and Commercial Supply Agreements with NEBU-TEC to provide for the availability of Optineb nebulizers and related supplies for use in our TRIUMPH-1 clinical trial of inhaled treprostinil and for commercial use following regulatory approval. These non-exclusive agreements require NEBU-TEC to sell us Optineb devices and supplies for clinical and commercial use at specified prices and payment terms. These agreements also specify each party's obligations with respect to regulatory approvals. In February and April 2008, we entered into amendments to the September 2006 Clinical and Commercial Supply Agreement under which the term of the agreement was extended to the earlier of the first anniversary of the date of regulatory approval of inhaled treprostinil in the United States or EU. We also agreed to an advance order of Optineb devices and related supplies following satisfactory completion of a testing program in support of our NDA filing. The amendments also clarified certain regulatory obligations of the parties and provided NEBU-TEC with the first opportunity to sell devices in Europe for so long as NEBU-TEC was able to meet market demand.

2000 Agreement, Toray's right to receive the Option Grant was conditioned upon Toray's delivery to us of adequate documentation regarding the use of beraprost-SR in humans and its transfer of clinical trial material to us, neither of which had occurred as of the effective date of the amended agreement. Had the Option Grant been made, the exercise price of the options would have been set at the average closing price of our common stock for the period one month prior to the delivery date. Under the terms of the amended agreement, Toray has the right to request that we repurchase the newly issued 200,000 shares of our common stock upon 30 days prior written notice at the price of $54.41 per share, which was the average closing price of our common stock between January 11, 2007, and February 23, 2007. Based on the average closing price of our common stock for the two trading days prior to and the two trading days after the effective date of the amended agreement (March 16, 2007), we recognized a research and development expense of approximately $11.0 million relating to the issuance of the 200,000 shares, because beraprost-MR had not yet obtained regulatory approval for commercial sales. In accordance with the provisions of SFAS No. 133, *Accounting for Derivative Instruments and Hedging Activities*, EITF 00-19 and EITF Topic No. D-98, *Classification and Measurement of Redeemable Securities*, these shares of our common stock are reflected in mezzanine equity as common stock subject to repurchase valued at the repurchase price. If Toray requests that we repurchase these shares, then an amount equal to the repurchase price will be transferred to a liability account until the repurchase is completed.

The amended agreement also specifies that we make certain milestone payments to Toray during the development period and upon U.S. or EU regulatory approval. Upon execution of the amended agreement, we made a $3.0 million payment to Toray in addition to the issuance of the 200,000 shares of our common stock discussed above. Additional annual milestone payments of $2.0 million are specified in the amended agreement and commenced in the first quarter of 2008, increasing annually in $1.0 million increments through 2011. These payments will be expensed when incurred. These payments are contingent upon the receipt of clinical trial material and commercial drug from Toray that meet all regulatory standards and requirements, including those relating to chemistry, manufacturing and controls, and are documented to the satisfaction of U.S. and EU regulatory authorities. In addition, if Toray elects to terminate production of beraprost-MR, no further payments would be due under the amended agreement. Conversely, if we elect to terminate development of beraprost-MR, then all remaining milestone payments would be due to Toray, unless certain regulatory standards and requirements have not been met, or if material problems have been identified with respect to manufacturing and regulatory compliance.

Lilly Agreements Related to Tadalafil

On December 18, 2008, we completed the transactions contemplated by several agreements we entered into on November 14, 2008 with Lilly, including a license agreement, a manufacturing and supply agreement, and a stock purchase agreement.

License Agreement. Under the terms of the license agreement, Lilly granted us an exclusive license for the right to develop, market, promote and commercialize tadalafil for the treatment of pulmonary hypertension in the United States and Puerto Rico. Tadalafil is also the active pharmaceutical ingredient in Cialis, which is developed and marketed by Lilly for the treatment of erectile dysfunction.

In exchange for the license, we agreed to pay Lilly a one-time fee of $25.0 million, which was expensed upon the effective date of the agreement, December 18, 2008, since tadalafil has not yet received regulatory approval for commercial sales. We also agreed to pay Lilly royalties equal to 5% of our net sales of tadalafil in the United States and Puerto Rico, as a pass through of Lilly's third-party royalty obligations, for so long as Lilly is required to make such payments.

Patents and Proprietary Rights

Our success depends in part on our ability to obtain and maintain patent protection for our products, preserve trade secrets, prevent third parties from infringing upon our proprietary rights and operate without infringing upon the proprietary rights of others in the United States and worldwide.

Glaxo Assignment

In January 1997, Glaxo assigned to us all rights to the use of the stable prostacyclin analogue now known as Remodulin. The patent covering the use of Remodulin for PAH expires in the United States in October 2014 (as extended—see *Patent Term Extensions* below) and on various dates from September 2009 to August 2013 in nine other countries.

Pfizer License

In December 1996, Pharmacia & Upjohn Company (now Pfizer) exclusively licensed to us certain patents, a patent application and know-how for the composition and production of the stable prostacyclin analogue now known as Remodulin. We filed our own United States patent application for a new synthesis and production method for Remodulin in October 1997, and the patent was granted in August 2002. Two additional patents covering this synthesis and production method were granted in March 2003 and August 2004. We believe that our method of synthesis is a substantial improvement over the Pharmacia method and we are using our unique synthesis method rather than the licensed Pharmacia method for the production of Remodulin. We have also registered two patents and have one pending patent application with respect to additional Remodulin synthesis improvements.

Lilly

In November 2008, we entered into a license agreement with Lilly pursuant to which Lilly granted us an exclusive right to develop, market, promote and commercialize tadalafil for the treatment of pulmonary hypertension in the United States and Puerto Rico. In connection with these license rights, we made a one-time, upfront payment to Lilly of $25.0 million. Additionally, we agreed to pay Lilly royalties of 5% of our net sales of tadalafil as a pass through of Lilly's third-party royalty obligations for as long as Lilly is required to make such royalty payments. The term of the license agreement will continue generally until the later of: (1) the expiration or lapse of the last to expire claim within a Lilly patent covering commercialization of tadalafil, or (2) expiration of any government conferred exclusivity rights to tadalafil. In addition, the license agreement may be terminated in the event that a separate brand name for tadalafil is not approved by the FDA, in which case Lilly will refund our $25.0 million payment.

Stanford University and New York Medical College Licenses

In 2000, we acquired the exclusive license to patents from Stanford University and New York Medical College related to arginine-based dietary supplements that work to enhance the level of naturally occurring NO in the vascular system. The licenses cover worldwide territories and are valid for the life of the patents (expiration dates ranging from 2010 to 2018). We will own all rights to any new products derived from these patents.

Supernus Pharmaceutical License

In June 2006, we entered into an exclusive license agreement with Supernus to use certain of its technologies in our sustained release oral treprostinil formulation. Under the agreement, in return for the license, we will pay Supernus certain amounts upon the achievement of specified milestones based on the development of oral treprostinil and its commercial launch. In addition, the agreement provides that we will pay a royalty to Supernus based on net worldwide sales of the initial product. Any such

Research & Development Expenditures

We are engaged in research and development and have incurred substantial expenses for these activities. These expenses generally include the cost of acquiring or inventing new technologies and products, as well as new product development. Research and development expenses during 2008, 2007 and 2006 totaled approximately $239.2 million, $83.4 million and $57.6 million, respectively. See *Item 7—Management's Discussion and Analysis of Financial Condition and Results of Operations—Major Research and Development Projects* for additional information regarding expenditures related to major research and development projects.

Manufacturing and Supply

We made treprostinil sodium, the active ingredient for Remodulin and inhaled treprostinil, and treprostinil diethanolamine, the active ingredient for oral treprostinil, at our manufacturing facility in Chicago, Illinois, until March 2007 at which time we transitioned these activities to our new laboratory facility in Silver Spring, Maryland. In July 2008, we submitted an application to the FDA for approval of the new facility for commercial manufacturing, and we expect to receive approval in the first half of 2009. Until we receive FDA approval, we cannot use or sell commercially any products manufactured in our Silver Spring facility. We currently maintain an inventory of formulated Remodulin that will meet over two years of expected demand.

With the transfer of our manufacturing operations to our Silver Spring facility, we have also changed our internal manufacturing process. When we began, we produced treprostinil sodium starting with basic chemicals and completed the full manufacturing process. Over the last several years, we have been modifying the manufacturing process to begin with advanced intermediate compounds made by outside vendors. We anticipate that, upon commercialization of oral treprostinil, the need for treprostinil diethanolamine will be greater than the need for treprostinil sodium. By beginning the manufacturing process with the advanced intermediate compound, we are able to make treprostinil diethanolamine and then convert that compound to treprostinil sodium as needed. We believe this process will give us the most flexibility and efficiency in meeting future demands for both forms of treprostinil. We have approved three vendors to supply the advanced intermediate compounds in order to reduce the risk of supply shortages.

Baxter Healthcare Corporation (Baxter) formulates the active ingredient we manufacture into Remodulin for us. The term of our initial agreement with Baxter ended in October 2004. The agreement is renewable for successive eighteen-month terms and has been continuously renewed since October 2004. In late 2008, Baxter gave us verbal notice that it does not intend to renew our agreement upon the expiration of its current term in late October 2010. We eventually intend to formulate Remodulin ourselves in the combination office and laboratory facility that we are currently constructing adjacent to our Silver Spring laboratory facility. In the meantime, we intend to engage another third party to formulate Remodulin prior to the termination of our agreement with Baxter to serve as a secondary manufacturer. Also, although we maintain a two-year inventory of Remodulin, we believe that engaging a third-party formulator will mitigate the risk that we might not be able to formulate sufficient quantities of Remodulin to meet patient demand. In addition, we expect to increase contingent inventory levels of formulated Remodulin from an approximate two-year supply to a three-year supply based on projected demand.

We rely on Catalent Pharma Solutions, Inc. (formerly Cardinal Health, Inc.) (Catalent) to conduct stability studies on Remodulin, formulate inhaled treprostinil, formulate oral treprostinil for clinical trials and to analyze other products we develop. We expect to begin manufacturing oral treprostinil in our new manufacturing facility in Research Triangle Park, North Carolina, during the second half of 2009.

- Thelin®. Approved in August 2006 in the EU, Thelin is an oral therapy, which was developed and initially marketed in Europe by Encysive Pharmaceuticals Inc. (Encysive), for the treatment of PAH. Like Tracleer and Letairis, Thelin is an ERA. In June 2008, Pfizer completed its acquisition of Encysive. Pfizer has stated that it plans to conduct a pivotal Phase III clinical trial to support registration of Thelin in the United States and eventually seek FDA approval.

Due to their ease of use, oral therapies, such as Tracleer and Revatio, are generally considered front-line therapies for newly diagnosed PAH patients. Flolan and Remodulin, more complex infusion therapies, are generally considered later-stage therapies for sicker patients. The use of the available oral therapies and Ventavis, either alone or in combination, will delay the need for infusion therapy for many patients. As a result, while we may not currently compete head-to-head with these drugs as front-line therapy, the success of their use affects our commercial operations. As we develop both inhaled and oral treprostinil therapies, we will be expanding our range of therapeutics to include front line and mid-range treatment options. Furthermore, the commercialization of generic forms of other approved PAH therapies may exert downward pressure on the pricing of our products. For further discussion on this risk, see *Item 1A—Risk Factors—We may not successfully compete with established drugs, products and the companies that develop and market them*

Holter and event monitoring analysis services and systems are provided by many local and regional competitors and a few national competitors.

We compete with all of these companies for customers, funding, access to licenses, personnel, third-party collaborators, product development and commercialization. Almost all of these companies have substantially greater financial, marketing, sales, distribution and technical resources, and more experience in research and development, product development and marketing, clinical trials and regulatory matters, than we have.

Governmental Regulation

The research, development, testing, manufacture, promotion, marketing and distribution of pharmaceutical products are extensively regulated by governmental agencies in the United States and in other countries. Drugs are subject to rigorous regulation by the FDA in the United States, the EMEA in the EU and similar regulatory authorities in other countries. The steps ordinarily required before a new drug may be marketed in the United States, which are similar to steps required in most other countries, include:

- Preclinical laboratory tests, preclinical studies in animals, formulation studies and the submission to the FDA of an Investigational New Drug Application (IND) for a new drug;
- Clinical studies in healthy volunteers;
- Adequate and well-controlled clinical trials to establish the safety and efficacy of the drug for each indication;
- The submission of an NDA to the FDA; and
- FDA review and approval of the NDA prior to any commercial sale or shipment of the drug.

Preclinical tests include laboratory evaluation of product chemistry, toxicity and formulation, as well as animal studies. The results of preclinical testing are submitted to the FDA as part of an IND. A 30-day waiting period after the filing of each IND is required prior to the commencement of clinical testing in humans. At any time during this 30-day period or at any time thereafter, the FDA may halt proposed or ongoing clinical trials until it authorizes trials under specified terms. The IND process may be extremely costly and may substantially delay development of our products. Moreover, positive results of preclinical tests will not necessarily indicate positive results in clinical trials.

withdrawal of approval, reformulation of the drug, additional preclinical testing or clinical trials, and changes in labeling of the product.

The Hatch-Waxman Act provides that patent terms may be extended to compensate for some of the patent life that is lost during the FDA regulatory review period for the product. This extension period would generally be one-half the time between the effective date of an IND and the submission date of an NDA, plus all of the time between the submission date of an NDA and its approval, subject to a maximum extension of five years. Similar patent term extensions are available under European laws. Following FDA approval, we filed a patent term extension application with the United States Patent and Trademark Office for our patent covering the method of treating PAH using Remodulin. The application was approved in February 2005, and the patent for Remodulin is currently set to expire on October 6, 2014.

Outside of the United States, our ability to market our products will also be contingent upon receiving marketing authorizations from the appropriate regulatory authorities. The foreign regulatory approval process may include some or all of the risks associated with FDA approval set forth above. The requirements governing the conduct of clinical trials and marketing authorization vary widely from country to country. At present, foreign marketing authorizations are applied for at a national level, although, within Europe, procedures are available to companies wishing to market a product in more than one EU member state.

In the EU, marketing authorizations may be submitted through a centralized body or through a decentralized or a national level process. The centralized procedure is mandatory for the approval of biotechnology products and high technology products and is available at the applicant's option for other products. The centralized procedure provides for the grant of a single marketing authorization that is valid in all EU member countries. The decentralized procedure is available for all medicinal products that are not subject to the centralized procedure. The decentralized procedure provides for mutual recognition of national approval decisions, changes existing procedures for national approvals and establishes procedures for coordinated EU actions on products, suspensions and withdrawals. Under this procedure, the holder of a national marketing authorization for which mutual recognition is sought may submit an application to one or more EU member countries, certify that the dossier is identical to that on which the first approval was based, or explain any differences and certify that identical dossiers are being submitted to all EU member countries for which recognition is sought. Within 90 days of receiving the application and assessment report, each EU member country must decide whether to recognize approval. The procedure encourages member states to work with applicants and other regulatory authorities to resolve disputes concerning mutual recognition. Lack of objection of a given country within 90 days automatically results in approval in that country. Following receipt of marketing authorization in an EU member country, the applicant is then required to engage in pricing discussions and negotiations with a separate prescription pricing authority in that country. Commercial sales are only able to commence in a country once pricing approval has been received.

To secure European regulatory approvals for subcutaneous Remodulin for PAH, we used the mutual recognition process. Under the rules then applicable, centralized filing was not required and we perceived the decentralized procedure to be the most effective means for approval. We filed our first MAA in France in February 2001. Review of our application was completed in 2005. As a result, Remodulin was approved in 23 member countries of the EU under the mutual recognition process described above. We withdrew applications in Spain, the United Kingdom and Ireland with the intent of resubmitting the applications when we file for approval for intravenous Remodulin since these countries required additional information not required by the other European countries. We had to file for approval for intravenous Remodulin using the mutual recognition process since intravenous use of Remodulin is considered a variation to the original license. We filed our application with our reference member state, France, which has notified us that it is not satisfied with our filing. We are working to address France's concerns and believe that we will eventually receive commercial approval for

Employees

We had approximately 360 employees as of January 29, 2009. We also maintain active independent contractor relationships with various individuals, most of whom have month-to-month or annual consulting agreements. We believe our employee relations are excellent.

Industry Segments and Geographic Areas

We operate two business segments: pharmaceuticals and telemedicine. We sell our products in the United States and throughout the rest of the world. The information required by Item 101(b) and 101(d) of Regulation S-K relating to financial information about industry segments and geographical areas, respectively, is contained in Note 19 of the consolidated financial statements included in this Annual Report on Form 10-K.

Corporate Website

Our Internet website address is *http://www.unither.com*. Our filings on Form 10-K, Form 10-Q, Form 3, Form 4, Form 5, Form 8-K and any and all amendments thereto are available free of charge through this internet website as soon as reasonably practicable after they are filed or furnished to the Securities and Exchange Commission (SEC). They are also available through the SEC's EDGAR portal at *http://www.sec.gov/edgar/searchedgar/companysearch.html*.

ITEM 1A. RISK FACTORS

Forward-Looking Statements

This Annual Report on Form 10-K contains forward-looking statements made pursuant to the safe harbor provisions of Section 21E of the Securities Exchange Act of 1934 (the Exchange Act) and the Private Securities Litigation Reform Act of 1995 which are based on our beliefs and expectations as to future outcomes. These statements include, among others, statements relating to the following:

- Expectations of revenues, profitability, and cash flows;
- The timing and outcome of clinical studies and regulatory filings;
- The achievement and maintenance of regulatory approvals;
- The existence and activities of competitors;
- The pricing of Remodulin;
- The expected levels and timing of Remodulin sales;
- The dosing and rate of patient consumption of Remodulin;
- The impact of generic products on Remodulin sales;
- The outcome of potential future regulatory actions from the FDA and international regulatory agencies;
- The adequacy of our intellectual property protections and expiration dates on our patents;
- The ability of third parties to market, distribute and sell our products;
- The current and expected future value of our goodwill and recorded intangible assets;
- The sufficiency of current and future working capital;
- The expectation that our Convertible Senior Notes will be held to maturity;
- The ability to obtain financing or raise cash in the future;
- The value of our common stock;
- The expectation of future repurchases of those shares of our common stock subject to repurchase from Toray Industries, Inc.;
- The timing and expectations of the completion and costs of our building projects;
- The expected impacts of new accounting standards including FSP APB 14-1;
- The expectation of liquidating our investment holdings without significant losses and expectations with respect to future credit market conditions;
- The potential effects of an auction-rate securities settlement offer and our expectations of not exercising our right to borrow under the settlement offer;
- The results of our clinical trials;
- The pace and timing of enrollment of our clinical trials;
- The expectation and timing of regulatory approvals for and the commencement of earning revenues from sales of inhaled treprostinil, oral tadalafil and oral treprostinil;
- The expectation and timing of regulatory approval for our manufacturing and laboratory facility in Silver Spring, Maryland (Phase I Laboratory);

successfully, could cause our revenues to suffer. Because we are very dependent on sales of Remodulin, any reduction in Remodulin sales would cause our results of operations to suffer.

Most of our pharmaceutical products are in clinical development and may never generate profits.

Our only pharmaceutical product currently in commercial distribution is Remodulin for subcutaneous and intravenous administration. Most of our pharmaceutical products are in various stages of clinical development; therefore, many of these products may not become commercially available for a number of years, if at all. We might not maintain or obtain regulatory approvals for our pharmaceutical products and may not be able to sell our pharmaceutical products commercially. Even if we sell our products, we may not be profitable or may not be able to sustain any profitability we achieve.

We may not successfully compete with established and newly-developed drugs, products and the companies that develop and market them.

We compete with established drug companies during product development for, among other things, funding, licenses, expertise, personnel, clinical trial patients, and third-party collaborators. We also compete with these companies following the approval of our products. Most of these competitors have substantially greater financial, marketing, sales, distribution and technical resources than we do. These competitors also possess more experience in research and development, clinical trials, sales and marketing and regulatory matters than we do.

We are aware of existing treatments that compete with our products, especially in the field of PAH. Patients and doctors may perceive these competing products as safer, more effective, more convenient and/or less expensive than Remodulin. Accordingly, sales of Remodulin may not increase, or may decrease if doctors prescribe less Remodulin than they prescribe presently.

For the treatment of PAH, we compete with many approved products in the United States and worldwide, including the following:

- Flolan. The first product approved by the FDA for the treatment of PAH, Flolan is a prostacyclin analogue that is delivered by intravenous infusion. Glaxo began marketing Flolan in the United States in 1996. In 2006, Myogen acquired the marketing rights for Flolan in the United States. In November 2006, Myogen was acquired by Gilead. The generic exclusivity period for Flolan expired in April 2007;
- Generic epoprostenol. In April 2008, Teva announced that the FDA approved its version of generic epoprostenol for treatment of PAH. This is the first approved generic version of Flolan. In June 2008, GeneraMedix Inc. (GeneraMedix) received FDA approval for its version of generic epoprostenol. In February 2009, Actelion announced that it had entered into an agreement with GeneraMedix to acquire its generic epoprostenol product;
- Ventavis. Approved in December 2004 in the United States and in September 2003 in Europe, Ventavis is the only prostacyclin analogue that has been approved for inhalation. Ventavis was initially marketed by CoTherix, in the United States and is marketed by Schering AG in Europe as Iloprost. In January 2007, CoTherix was acquired by Actelion, the manufacturer and distributor of Tracleer;
- Tracleer. The first oral drug to be approved for PAH, Tracleer is also the first drug in its class of ERAs. Tracleer was approved in December 2001 in the United States and in May 2002 in Europe. Tracleer is marketed worldwide by Actelion;

the United States and Puerto Rico, Lilly will retain the rights to commercialize tadalafil for the treatment of pulmonary hypertension outside the United States and Puerto Rico;

- Terguride. In May 2008, Ergonex Pharma announced that the FDA granted orphan drug status to Terguride for the treatment of PAH. Terguride is a serotonin receptor 5-HT2B and 5-HT2A antagonist. Terguride is currently being evaluated for the treatment of PAH in a pivotal Phase II clinical study in Europe;
- Actelion-1. Actelion-1 is a tissue-targeting ERA being developed by Actelion. Actelion is conducting a Phase III study of Actelion-1 to evaluate its safety and efficacy in delaying disease progression and mortality in patients with PAH;
- Gleevec®. An approved oral treatment for chronic myeloid leukemia (a cancer of the blood and bone marrow), Gleevec is currently marketed by Novartis Pharmaceuticals Corporation. A Phase II study presented at the European Respiratory Society showed promising results for Gleevec in the treatment of PAH. Other research is ongoing;
- Aviptadil. An inhaled formulation of a vasoactive intestinal peptide, Aviptadil is being developed by mondoBIOTECH Holding SA for the treatment of PAH. In September 2006, mondoBIOTECH Holding SA announced that it had outlicensed Aviptadil for the treatment of PAH to Biogen Idec Inc. A small study of Aviptadil showed that it tended to improve oxygenation in patients with PAH. Further studies are ongoing;
- PRX-08066. A serotonin receptor 5-HT2B antagonist, PRX-08066 is being developed by Epix Pharmaceuticals, Inc. as an oral tablet for the treatment of PAH. In August 2008, Epix Pharmaceuticals, Inc. announced the initiation of a right-heart catheter study of PRX-08066 in patients with PAH from chronic obstructive pulmonary disease and moderate-to-severe pulmonary hypertension;
- PulmoLAR™. Currently in development by PR Pharmaceuticals, Inc., PulmoLAR is a once-a-month injectible therapy that contains a metabolite of estradiol and has been shown in animal and cell models to address certain processes associated with PAH;
- Fasudil. Oral and inhaled formulations of Fasudil, a rho-kinase inhibitor, may be developed by Actelion for the treatment of PAH. Fasudil is currently approved in Japan as an intravenous drug to treat a disease unrelated to PAH;
- Sorafenib. Originally marketed by Bayer HealthCare AG (Bayer) as Nexavar® for advanced renal cell cancer, Sorafenib is a small molecule that inhibits Raf kinase and may interfere with the thickening of blood vessel walls associated with PAH. On May 20, 2008, the results of a University of Chicago study were released demonstrating that PAH patients taking Nexavar showed improvement in their ability to exercise;
- Recombinant Elafin. Currently being developed by PROTEO Biotech AG, Recombinant Elafin is a synthetic version of a protein that is produced naturally in the body and may inhibit inflammatory reactions. In March 2007, Elafin was granted orphan drug status in the EU for the treatment of PAH and chronic thromboembolic pulmonary hypertension;
- NS-304. A novel orally available prostaglandin I2 receptor agonist, NS-304 is being developed by Nippon Shinyaku and Actelion pursuant to an April 2008 license agreement. Under the terms of the agreement, Actelion will take over a Phase IIa clinical study of NS-304 for PAH being conducted by Nippon Shinyaku in Europe and will be responsible for global development and commercialization of NS-304 outside Japan;
- Cicletanine. Marketed by Navitas Pharma for hypertension in Europe, Cicletanine is an eNOS coupler that works to increase the flexibility of blood vessel linings. In May 2008, Gilead and

Third-party payers may not approve our new products for reimbursement or may not continue to approve Remodulin for reimbursement. Furthermore, third-party payers may reduce the amount of reimbursement for Remodulin based on changes in pricing of other therapies for PAH, including generic formulations of other approved therapies, such as Flolan. If third-party payers do not approve a product of ours for reimbursement or limit the amount of reimbursement, sales will decline, as patients could opt for a competing product that is approved for reimbursement.

The growth of our cardiac monitoring business is dependent upon physicians utilizing our services. If we fail to maintain our current level of physician utilization, our cardiac monitoring revenues may stagnate and our business could be adversely affected.

Our ability to provide our cardiac monitoring services is dependent upon physicians prescribing our diagnostic tests for their patients. Our success in obtaining patients to monitor will be directly influenced by the relationships we develop and maintain with physicians and physician groups in accordance with government regulations affecting such relationships. If we are unable to maintain such relationships and create new relationships, the number of patients using our cardiac monitoring services will decline. This could adversely affect our cardiac monitoring revenues.

If we are unable to educate physicians regarding the benefits of our CardioPAL® SAVI and Decipher Holter monitor systems and fail to achieve sufficient levels of utilization, revenues from our cardiac monitoring services may not grow and could decrease.

Reimbursement for cardiac monitoring services by Medicare is highly regulated and subject to change. The operation of our cardiac monitoring facility is subject to rules and regulations governing Independent Diagnostic Testing Facilities (IDTFs). Failure to comply with these rules could prevent us from receiving reimbursement for our cardiac services from Medicare and some commercial payers.

We receive approximately 15 percent of our cardiac monitoring service revenues from Medicare reimbursements. Reimbursement from Medicare for cardiac monitoring services is subject to statutory and regulatory changes, rate adjustments and administrative rulings. All of these factors could materially affect the range of services covered or the reimbursement rates paid by Medicare for use of our cardiac monitoring services. In 2007, CMS instituted a change in the method for calculating reimbursement under the Physician Fee Schedule that will be implemented over a four-year period. Consequently, CMS has reduced reimbursement for our cardiac monitoring services each year since 2007. Similar reductions are expected through 2010. We cannot predict whether future modifications to Medicare's reimbursement policies could reduce the amounts we receive from Medicare for the services we provide. Additionally, Medicare's reimbursement rates can affect the rate that commercial payers are willing to pay for our products and services.

The Medicare program is administered by CMS. CMS imposes extensive and detailed requirements on medical service providers. These requirements include, but are not limited to, rules that govern how we structure our relationships with physicians, how and when we submit reimbursement claims, how we operate our monitoring facilities and how we provide our cardiac monitors and monitoring services. Our failure to comply with applicable Medicare rules could result in the discontinuance of our reimbursements, the return of funds paid to us, civil monetary penalties, criminal penalties and/or exclusion from the Medicare program.

Additionally, in order for us to receive reimbursement for cardiac monitoring services from Medicare and some commercial payers, we must maintain a call center certified as an IDTF. Certification as an IDTF requires that we follow strict regulations governing how the center operates, such as requirements regarding certifications of the technicians who review data transmitted from our cardiac monitors. If regulations change, we may have to alter operating procedures at our monitoring facilities, which could increase our costs significantly. If we fail to obtain and maintain IDTF

withdrawn for failure to comply with regulatory requirements. Product approvals can also be withdrawn upon the occurrence of adverse events following commercial introduction. In addition, our marketed products and how we manufacture and sell these products are subject to extensive continued regulation and review.

Although we have never experienced product specification failures with respect to Remodulin vials, discovery of previously unknown problems with our marketed products or problems with our manufacturing, regulatory, promotional or commercialization activities could result in regulatory restrictions on our products, including withdrawal of the products from the market. If we fail to comply with applicable regulatory requirements, we could be subject to penalties that may consist of fines, suspensions of regulatory approvals, product recalls, seizure of products and criminal prosecution.

Reports of side effects, such as sepsis, associated with intravenous Remodulin could cause physicians and patients to avoid or discontinue use of Remodulin in favor of alternative treatments.

Sepsis is a serious and potentially life-threatening infection of the bloodstream caused by a wide variety of bacteria. Intravenous prostacyclins are infused continuously through a catheter placed in a large vein in the patient's chest. Sepsis is an expected consequence of this type of delivery. As a result, sepsis is included as a risk in both the Remodulin and Flolan package inserts.

In 2007, the Scientific Leadership Committee (SLC) of the Pulmonary Hypertension Association announced new guidance relating to the treatment of PAH patients on long-term intravenous therapy. The SLC reminded physicians to be aware of the range of possible gram negative and gram-positive infectious organisms in patients with long-term central catheters and to treat them appropriately. We have been informed that the SLC is planning a study to evaluate the risk of sepsis and sepsis sub-types among parenterally-delivered prostanoids. In February 2008, the FDA approved a revised Remodulin package insert that more fully described the known infection risk and appropriate techniques to be practiced when preparing and administering Remodulin intravenously. In May 2008, the SLC issued a statement that it had created catheter maintenance guidelines for intravenous prostacyclin administration to minimize the risks of developing bloodstream infections.

Although a discussion of the risk of sepsis is currently included in the Remodulin label, and the occurrence of sepsis is familiar to physicians who prescribe intravenously administered therapies, concerns about bloodstream infections may adversely affect a physician's prescribing practice of Remodulin. If that occurs, sales of Remodulin and our profitability could suffer.

We have transitioned our manufacturing operations to a new location and if the FDA and other international agencies do not approve our new location for commercial use, our ability to produce treprostinil sodium, the active ingredient in Remodulin, could suffer.

In July 2008, we submitted a supplement to the Remodulin NDA for approval of our Phase I Laboratory. We plan to manufacture treprostinil in our Phase I Laboratory on a larger scale than we did in our facility in Chicago, Illinois, which we closed in May 2007. Until we receive FDA and international approvals of our Phase I Laboratory, we cannot sell products containing compounds manufactured there. We have maintained two years of formulated Remodulin based on anticipated demand. If we experience unexpected delays for approval of our Phase I Laboratory of more than two years, we may encounter a shortage of treprostinil and this could reduce the availability of our commercial products. Consequently, both our commercial sales and our ability to conduct clinical trials would suffer.

distribution of Remodulin and our other products and services, and impede the progress of our clinical trials and commercial launch plans. This would adversely affect our research and development and future sales efforts.

Our manufacturing strategy presents the following risks:

- The manufacturing processes for some of our investigational products have not been tested in quantities necessary for commercial sales;
- We are planning to produce all forms of treprostinil ourselves and have never done so previously;
- Delays in scale-up to commercial quantities and process validation could delay clinical studies, regulatory submissions and commercialization of our investigational products;
- A long lead time is needed to manufacture treprostinil and Remodulin, and the manufacturing process is complex;
- Both we and the manufacturers and formulators of our products are subject to the FDA's Current Good Manufacturing Practices in the United States and similar or more stringent regulatory standards internationally. Although we can control compliance issues with respect to our internal synthesis and manufacturing processes, we do not have control over regulatory compliance by our third-party manufacturers;
- Even if we and the manufacturers and formulators of our products were to comply with domestic and international drug manufacturing regulations, the sterility and quality of the products being manufactured and formulated could be deficient. If this were to occur, such products would not be available for sale or use;
- If we have to replace a manufacturing or formulation contractor for any reason or abandon our own manufacturing operations, the FDA and international drug regulators would require new testing and compliance inspections. Furthermore, a new manufacturer or formulator, including any replacement for Baxter (who intends to discontinue formulating Remodulin in October 2010), would have to be educated in the processes necessary to manufacture and commercially validate our product;
- We may be unable to manufacture or formulate products internally other than Remodulin as planned, or at all;
- We may be unable to obtain manufacturers and formulators for those products that we do not plan to manufacture or formulate internally;
- We may be unable to obtain manufacturers and formulators to serve as additional sources for products that we manufacture or formulate internally;
- The supply of materials and components necessary to manufacture and package Remodulin and our other products may become scarce or interrupted. Disruptions to the supply of these materials could delay the manufacture and subsequent sale of such products. Any products manufactured with substituted materials or components would be subject to approvals from the FDA and international regulatory agencies before they could be sold. The timing of such FDA and international regulatory approval is difficult to predict and may be delayed;
- We may not have sufficient intellectual property rights, or we may have to share intellectual property rights to many of the improvements in the manufacturing processes or to new manufacturing processes for our products; and
- Suppliers may increase the prices at which they are willing to sell materials, components or finished products, and we may be unable to adjust our prices accordingly.

Any of these factors could delay clinical studies or commercialization of our products, entail higher costs, and result in our inability to effectively sell our products.

Our corporate compliance program cannot guarantee that we comply with all potentially applicable federal, state and international regulations.

The development, manufacture, distribution, pricing, sales, marketing, and reimbursement of our products, together with our general operations, are subject to extensive federal, state, local and international regulations. While we have developed and instituted corporate compliance programs, we cannot ensure that our employees or we are or will always be in compliance with these regulations. If we fail to comply with any of these regulations, we could be subject to a range of penalties including but not limited to: the termination of clinical trials, the failure to approve a product candidate, restrictions on our products or manufacturing processes, withdrawal of our products from the market, significant fines, exclusion from government healthcare programs, and other sanctions or litigation.

If the licenses, assignments and alliance agreements we depend on are breached or terminated, we would lose our right to develop and sell the products covered by such agreements.

Our business depends upon the acquisition, assignment and license of drugs and other products that have been discovered and initially developed by others. Related drugs and other products include Remodulin, tadalafil and all other products in our prostacyclin, glycobiology antiviral agents, and monoclonal antibodies platforms. Under our product license agreements, we receive certain rights to existing intellectual property owned by third parties subject to the terms of each license agreement. Our assignment agreements transfer all right, title and interest in and to the intellectual property to us, subject to the terms of each agreement. We also obtain licenses to other third-party technologies to conduct our business. In addition, we may be required to obtain licenses to other third party technologies to commercialize our early-stage products. This dependence contains the following risks:

- We may be unable to obtain future licenses or assignment agreements at a reasonable cost or at all;
- If any of our licenses or assignment agreements are terminated, we will lose our rights to develop and market the products covered by such licenses or assignment agreements;
- Our licenses and assignment agreements generally provide the licensor or assignor the right to terminate in the event we breach such agreements--e.g., we fail to timely pay royalties and other fees;
- If a licensor or assignor fails to maintain the intellectual property licensed or assigned to us as required by most of our licenses and assignment agreements, we may lose our rights to develop and market some or all of our products. In addition, we may be forced to incur substantial costs to maintain the intellectual property ourselves or force the licensor or assignor to do so; and,
- If Lilly is unable to obtain or maintain FDA approval for tadalafil, we will be unable to develop and commercialize tadalafil for the treatment of pulmonary hypertension.

Certain license and assignment agreements relating to our products may restrict our ability to develop products in certain countries and/or for particular diseases and may impose other restrictions on our freedom to develop and market our products.

When we acquire, license, or receive assignments of drugs and other products that have been discovered and initially developed by others, our rights may be limited. For instance, our rights to market tadalafil are limited to the United States and Puerto Rico, unless Lilly decides not to market the drug in another country, at which time we would have the opportunity to negotiate for rights to market the drug in that country.

Provisions in our license and assignment agreements may impose other restrictions that affect the development and marketing of our products. For example, in assigning Remodulin to us, Glaxo retained

appeal of this litigation; however, it is not possible to determine the outcome. An unfavorable final outcome could have a material adverse impact on our license for tadalafil for pulmonary hypertension.

Patents may be issued to others and this could impede the manufacture or sale of our products. We may have to license those patents and pay significant fees or royalties to the owners of those patents in order to keep marketing our products. These added fees could reduce our profits.

To the extent valid third-party patents cover our products or services, we or our strategic collaborators would be required to seek licenses from the holders of these patents in order to manufacture, use, or sell our products and services. Payments under these licenses would reduce our profits from the sale of related products and services. We may be unable to obtain these licenses on acceptable terms, or at all. If we fail to obtain a required license or are unable to alter the design of our technology to avoid infringing a third-party patent, we may be unable to market some of our products and services, which would limit our sales and future growth.

Proposed changes to United States patent law are currently pending in Congress. If these proposed patent reforms become law, it could make it easier for patents to be invalidated and/or could reduce the amount of damages awarded in cases of patent infringement. Because we rely on patents to protect our products, proposed patent reform could negatively impact our business.

Pursuant to our agreements with certain business partners, any new inventions or intellectual properties arising from our activities will be jointly owned by us and these partners. If we do not have rights to new developments or inventions that arise during the terms of these agreements, or we have to share the rights with others, we may lose some or all of the benefit of these new developments or inventions, which may mean a loss of future profits or cost savings.

Our success depends in large part on our ability to operate without infringing third-party patents or other proprietary rights.

If we infringe third-party patents, we may be prevented from commercializing products or may be required to obtain licenses from those third parties. We may be unable to obtain alternative technologies or acquire a license on reasonable terms or at all. If we fail to obtain such licenses or alternative technologies, we may be unable to develop or commercialize some or all of our products.

If our highly qualified management and technical personnel leave us, our business may suffer.

Our success is highly dependent on key members of our management team, including: our founder and Chief Executive Officer, Martine Rothblatt, Ph.D.; our President and Chief Operating Officer, Roger Jeffs, Ph.D.; our Chief Financial Officer and Treasurer, John Ferrari; our Executive Vice President for Strategic Planning and General Counsel, Paul Mahon; our Chief Manufacturing Officer and Executive Vice President for Pharmaceutical Development, David Zaccardelli, Pharm.D.; and our Executive Vice President for Regulatory Affairs and Compliance, Dean Bunce. While these individuals are employed by us pursuant to multi-year employment agreements, such agreements do not ensure their continued retention. We do not maintain key person life insurance on these officers. However, we do incentivize our key personnel to remain employed by us until at least age 60 through our Supplemental Executive Retirement Plan. The success of our business will depend in part on retaining the services of our existing key management personnel and attracting and retaining new highly qualified personnel. Few individuals possess expertise in the field of cardiovascular medicine, infectious disease and oncology. As such, competition for qualified management and personnel is considerable.

may be required to incur significant costs in order to comply with current or future environmental laws and regulations. We may also be subject to substantial fines and penalties for failure to comply with these laws and regulations. While we believe we comply with laws and regulations governing these materials, the risk of accidental contamination or injury from these materials cannot be completely eliminated. Furthermore, once chemical and hazardous materials leave our site, we cannot control what our hazardous waste removal contractors choose to do with these materials. In the event of an accident, we could be liable for substantial civil damages or costs associated with the cleanup of the release of hazardous materials. Any related liability could exceed our resources and could have a materially adverse effect on our business, financial condition and results of operations.

We may encounter substantial difficulties managing our growth.

Several risks are inherent in our business development plans. Achieving our goals will require substantial investments in research and development, sales and marketing, and facilities. For example, we have spent considerable resources building and seeking regulatory approvals for our laboratories and manufacturing facilities. These facilities may be insufficient to meet future demand for our products. Conversely, we may have excess capacity at these facilities if future demand falls short of our expectations. In addition, constructing our facilities is expensive, and our ability to recover our investment will depend on sales of the products manufactured at these facilities in sufficient volume to substantially increase our revenues.

If we experience sales growth, we may have difficulty managing inventory levels. Marketing new therapies is complicated, and gauging future demand is difficult and uncertain.

We invest in auction-rate securities that are subject to market risk and the recent problems in the financial markets could adversely affect the value and liquidity of our investments in these securities.

As of December 31, 2008, our non-current marketable securities included approximately $36.8 million (par value) in auction-rate securities that are currently illiquid. In November 2008, we elected to participate in the court-ordered repurchase program by the investment firm from which we purchased our auction-rate securities. From the period beginning on June 30, 2010 and ending July 2, 2102, we can require the investment firm to repurchase any of our auction-rate securities at par value. Our ability to fully recover the carrying amount of these investments is limited in the near term and may never be fully recoverable if the investment firm fails to perform its obligations under the repurchase program or we cannot sell these securities ourselves under satisfactory terms.

Our ability to recognize the full value of our business tax credits may be limited.

As of December 31, 2008, we had approximately $79.3 million of business tax credit carryforwards. These tax credit carryforwards expire on various dates through 2028. The Internal Revenue Service (IRS) has not yet audited or reviewed these business tax credits since we have not yet utilized them. We have conducted reviews of these business tax credits with the help of outside tax experts, including our independent auditors, Ernst & Young, LLP. Although we have recognized reserves for those business tax credits that we believe may be disallowed upon examination by the IRS, it is possible that the IRS may reduce our business tax credits further. Any reduction of business tax credits will increase our tax expense and shorten the time period before we are required to pay federal income taxes.

In addition, certain business tax credit carryforwards that were generated at various dates prior to December 2007 may be subject to limitations on their use pursuant to Internal Revenue Code Section 382 (Section 382) as a result of ownership changes as defined by Section 382. However, we do not expect that these business tax credits will expire unused. If we are deemed to undergo any further ownership changes in the future, then certain business tax credit carryforwards might be deferred or expire unused.

We may fail to meet third-party projections for our revenue or profits.

Many independent securities analysts publish quarterly and annual projections of our revenues and profits. These projections are developed independently by the securities analysts based on their own analyses. Such estimates are inherently subject to uncertainty, particularly because we do not generally provide forward-looking guidance to the public. As a result, actual revenues and net income may differ from what was projected by securities analysts. Even small variations in reported revenues and profits compared to securities analysts' expectations can lead to significant changes in our stock price.

Sales of shares of our common stock may depress our stock price.

The price of our common stock could decline upon the occurrence of any of the following events: if we issue common stock to raise capital or to acquire a license or business; if our stockholders transfer ownership of our common stock, or sell substantial amounts in the public market; or, if investors become concerned that substantial sales may occur. All of our executive officers and some of our directors have announced their adoption of prearranged trading plans under Rule 10b5-1 of the Exchange Act. In accordance with these plans, our executive officers and directors periodically sell a specified number of shares of our common stock either owned by them or acquired through the exercise of stock options. However, our executive officers and directors may choose to sell additional shares outside of these trading plans and several have done so. A decrease in the price of our common stock could make it difficult for us to raise capital or fund acquisitions through the use of our stock.

The conversion of some or all of the Convertible Senior Notes when the price of our common stock reaches or exceeds $105.67 per share would dilute the ownership interests of our existing stockholders. The Convertible Senior Notes are convertible initially into 3.3 million shares of our common stock. Any sales in the public market of our common stock issued upon such conversion could adversely affect the prevailing market price of our common stock. Furthermore, the existence of the Convertible Senior Notes may encourage short selling by market participants because the conversion of the Convertible Senior Notes could depress the price of our common stock.

To the extent outstanding options are exercised or additional shares of capital stock are issued, existing stockholder ownership may be further diluted.

The fundamental change purchase feature of the Convertible Senior Notes may delay or prevent an otherwise beneficial attempt to take over our company.

The terms of the Convertible Senior Notes require us to purchase them for cash in the event of a fundamental change of ownership. A takeover of our company would trigger the requirement that we purchase the Convertible Senior Notes. This may delay or prevent a takeover of our company that would otherwise be beneficial to our stockholders.

Provisions of Delaware law and our certificate of incorporation, by-laws, shareholder rights plan, and employment and license agreements could prevent or delay a change of control or change in management that may be beneficial to our public stockholders.

Certain provisions of Delaware law and our certificate of incorporation, by-laws and shareholder rights plan may prevent, delay or discourage:

- a merger, tender offer or proxy contest;
- the assumption of control by a holder of a large block of our securities; and
- the replacement or removal of current management by our stockholders.

For example, our certificate of incorporation divides our Board of Directors into three classes. Members of each class are elected for staggered three-year terms. This provision may make it more

North Carolina—We lease office space in Research Triangle Park, North Carolina, for our clinical development and Remodulin commercialization staff. In June 2006, we purchased approximately 54 acres of land in Research Triangle Park, and in February 2009, we completed a new 200,000 square foot manufacturing facility and office building, which is occupied by our clinical research and development and Remodulin commercialization staffs. The manufacturing facility will formulate oral treprostinil.

Other locations—In March 2007, we purchased land and a building adjacent to our leased legal and governmental affairs office in Washington, D.C., which houses our virology-related government contracting operations. Our subsidiary, Unither Neurosciences, Inc., leases office space in Burlington, Vermont. Our subsidiary, United Therapeutics Europe, Ltd., purchased land and a building near London, which will be the headquarters for this subsidiary. It also purchased a building in Oxford, which will serve as laboratory space for our glycobiology projects. In addition, United Therapeutics Europe, Ltd., and LungRx Limited lease office space near London, England. Our Canadian subsidiary, Unither Biotech Inc., leases office space in Magog, Quebec, Canada.

We believe that these facilities are adequate for our current operations and that additional land and facilities for future expansion are reasonably available.

The office space in Melbourne, Florida, is used in our telemedicine segment. All other properties and leased facilities are used in our pharmaceutical segment.

ITEM 3. LEGAL PROCEEDINGS

Currently, and from time to time, we are involved in litigation incidental to the conduct of our business. We are not a party to any lawsuit or proceedings that, in the opinion of our management and based on consultation with legal counsel, is likely to have a material adverse effect on our financial position or results of operations.

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

No matters were submitted to a vote of security holders during the fourth quarter of the fiscal year covered by this report.

ITEM 6. SELECTED FINANCIAL DATA

The following selected consolidated financial data should be read in conjunction with our consolidated financial statements and the notes accompanying the consolidated financial statements and *Item 7—Management's Discussion and Analysis of Financial Condition and Results of Operations* included elsewhere in this Annual Report on Form 10-K. The historical results are not necessarily indicative of results to be expected for future periods. The following information is presented in thousands, except per share data.

	Year Ended December 31,				
	2008	2007	2006	2005	2004
Consolidated Statements of Operations Data:					
Revenues	$281,497	$210,943	$159,632	$115,915	$73,590
Operating expenses:					
Research and development	239,181	83,352	57,570	36,052	30,713
Selling, general and administrative	94,306	99,027	56,052	24,655	21,418
Cost of sales	30,066	22,261	17,028	12,315	8,250
Total operating expenses	363,553	204,640	130,650	73,022	60,381
(Loss) income from operations	(82,056)	6,303	28,982	42,893	13,209
Other income (expense):					
Interest income	11,025	13,602	10,700	5,359	2,986
Interest expense	(16)	(2,175)	(482)	(29)	(4)
Equity loss in affiliate	(226)	(321)	(491)	(754)	(785)
Other, net	(1,025)	(826)	1,199	53	43
Total other income (expense), net	9,758	10,280	10,926	4,629	2,240
Net (loss) income before income tax	(72,298)	16,583	39,908	47,522	15,449
Income tax benefit	29,509	3,276	34,057	17,494	—
Net (loss) income	$(42,789)	$ 19,859	$ 73,965	$ 65,016	$15,449
Net (loss) income per share:					
Basic(1)	$ (1.87)	$ 0.94	$ 3.21	$ 2.85	$ 0.71
Diluted(1)	$ (1.87)	$ 0.88	$ 3.06	$ 2.58	$ 0.66
Weighted average number of common shares outstanding:					
Basic	22,901	21,224	23,010	22,825	21,726
Diluted	22,901	22,451	24,138	25,206	23,351

	Year Ended December 31,				
	2008	2007	2006	2005	2004
Consolidated Balance Sheet Data:					
Cash, cash equivalents and marketable investments(2)	$336,318	$299,792	$264,163	$ 170,347	$ 139,140
Total assets	871,319	587,018	478,550	291,413	207,158
Notes payable	249,978	250,000	250,000	—	—
Accumulated deficit	(78,514)	(21,501)	(41,360)	(115,325)	(180,341)
Total stockholders' equity	507,699	295,790	204,606	275,102	191,636

(1) See Note 11 to the consolidated financial statements included elsewhere in this Annual Report on Form 10-K for the computation of basic and diluted net income per share.

(2) Excludes restricted marketable investments and cash.

Our sales and marketing team included approximately 80 employees as of December 31, 2008, up from approximately 65 employees as of December 31, 2007. We anticipate continued growth in our sales force in the near-term as we continue to position our business for expansion. We divide our sales force into two teams. One sales team is primarily responsible for medical practice accounts that are historical Remodulin prescribers. The other sales team focuses on medical practices that have not historically prescribed Remodulin. In addition, our specialty pharmaceutical distributors supplement the efforts of our sales force. The market in which we operate is highly competitive. We face stiff competition from other companies that market and sell competing therapies, and we expect competition to increase in the future.

Our domestic distributors, Accredo Therapeutics, Inc. (Accredo), CuraScript, Inc. (CuraScript), and CVS Caremark Corporation (Caremark), sell Remodulin to patients in the United States. We also engage various international distributors to sell Remodulin abroad. Because discontinuation of Remodulin therapy can be life-threatening, we require that our distributors maintain minimum contingent inventory levels. Due to this requirement, sales of Remodulin to our distributors in any given quarter may not be entirely indicative of patient demand. Our distributors typically place one bulk order per month in the first half of the month. The size of bulk distributor orders is based on estimates of future demand and considerations of contractual minimum inventory requirements. As such, our sales of Remodulin are affected by the timing and magnitude of these bulk orders by our distributors.

Subsequent to receiving FDA approval of Remodulin in 2002, we have funded our operations mainly from sales of Remodulin in the United States and abroad. In addition to revenues derived from sales of Remodulin, we have generated revenues from telemedicine products and services sold in the United States. Our telemedicine products and services are designed to detect cardiac arrhythmias, and ischemic heart disease, a condition that causes poor blood flow to the heart.

Expenses

Since our inception, we have devoted substantial resources toward our research and development activities. Accordingly, we incur considerable costs relating to our clinical trials and research, conducted both internally and by third parties, on a variety of projects to develop pharmaceutical therapies. We also seek to acquire promising technologies and/or compounds from third parties to be incorporated in our developmental projects and products through licensing arrangements or acquisitions. Principal components of our operating expenses consist of research and development, selling, general and administrative, and cost of both product and service sales.

Major Research and Development Projects

Our major research and development projects focus on the use of treprostinil and tadalafil to treat cardiovascular diseases, monoclonal antibodies to treat a variety of cancers and glycobiology antiviral agents to treat infectious diseases.

Cardiovascular Disease Projects

Inhaled treprostinil. We are developing an inhaled formulation of treprostinil sodium for the treatment of PAH. In June 2005, we commenced a 12-week randomized, double-blind, placebo-controlled Phase III trial of inhaled treprostinil in patients with PAH who were also being treated with Tracleer®, an oral endothelin receptor antagonist (ERA), or Revatio®, a PDE5 inhibitor. This trial, TRIUMPH-1 (**TR**eprostinil **I**nhalation **U**sed in the **M**anagement of **P**ulmonary Arterial **H**ypertension), was conducted at approximately 36 centers in the United States and Europe. In November 2007, we announced the completion of our TRIUMPH-1 trial. Analysis of the TRIUMPH-1 results demonstrated a highly statistically significant improvement in median six-minute walk distance (6MWD) of

FREEDOM-M by approximately 140. These new patients will start the study on the 0.25 mg tablet, which we learned from the FREEDOM-C trial is the best-tolerated tablet strength. In addition, our amendment to the FREEDOM-M protocol seeks to limit the primary statistical analysis of the trial to those patients who started the trial using the 0.25 mg tablet.

We believe that this protocol amendment will allow us to more accurately assess the effectiveness of oral treprostinil. We hope that by starting the additional patients on the 0.25 mg tablets and titrating the doses, patients will be able to reach an effective maintenance dose with the lower dosage tablet. The study should have a reduced rate of premature discontinuation due to adverse events. If we are successful in enrolling patients for this extended portion of the study, we will then be able to statistically power our analysis using a reduced effect size (from a 50 to 45 meter change in 6MWD), a change in the study's statistical significance (from 0.05 to 0.01) and a change the 6MWD study endpoint to include only patients who had access to the 0.25 mg tablets at randomization (when study drug is first administered at the beginning of the trial). If these amendments to the study are successful, we believe that the results will reflect the expected dosing regimen for oral treprostinil. Due to the time required to receive FDA consent for the protocol amendment and to package and ship new clinical trial supplies to study sites, we expect to begin enrolling additional patients in the second quarter of 2009.

Tadalafil. In November 2008, we entered into the following agreements with Eli Lilly and Company and one of its subsidiaries (collectively, Lilly): a license agreement, a manufacturing and supply agreement and a stock purchase agreement. We completed the initial transactions contemplated by these agreements in December 2008. Pursuant to the license agreement, we paid an upfront fee to Lilly of $25.0 million for the exclusive right to develop, market, promote and commercialize the orally administered tadalafil for the treatment of pulmonary hypertension in the United States and Puerto Rico. Tadalafil is the active ingredient in Cialis®, also developed and marketed by Lilly for the treatment of erectile dysfunction. Additionally, we agreed to pay Lilly royalties equal to 5% of net sales of tadalafil for pulmonary hypertension as a pass through of Lilly's third-party royalty obligations. We will purchase tadalafil from Lilly pursuant to the manufacturing and supply agreement. The terms of the manufacturing and supply agreement provide that Lilly will manufacture and distribute tadalafil through its wholesaler network as Lilly would for its other pharmaceutical products and included an upfront fee of $125.0 million. The total upfront fees paid to Lilly in December 2008 of $150.0 million under the license and manufacturing and supply agreements were charged to research and development expenses during the quarter ended December 31, 2008, because tadalafil had not yet received marketing approval from the FDA and therefore, commercial feasibility had not yet been established. Pursuant to the stock purchase agreement, we issued 3,150,837 shares of our common stock from treasury to Lilly in exchange for $150.0 million. See Note 15 to the consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

Beraprost-MR. We are developing a modified release formulation of beraprost (beraprost-MR) for PAH. Beraprost-MR is an oral prostacyclin analogue. In March 2007, our subsidiary Lung Rx., Inc. (Lung Rx) entered into an amended version of the June 2000 license agreement between Toray Industries, Inc. (Toray) and us to expand our rights related to the commercialization of beraprost-MR. We are currently enrolling a Phase II clinical study of beraprost-MR to explore multiple-dose tolerability in patients with PAH and planning a Phase III clinical trial to evaluate the efficacy of beraprost-MR for the treatment of PAH. In October 2007, Toray announced that beraprost-MR received regulatory approval in Japan for the treatment of PAH. In July 2008, beraprost-MR was granted Orphan Medicinal Product Designation by the EMEA.

We incurred expenses of approximately $210.5 million, $49.4 million and $33.0 million for the years ended December 31, 2008, 2007 and 2006, respectively, on our cardiovascular programs. We have spent approximately $453.9 million from inception to December 31, 2008, on our cardiovascular programs.

- Hospitals, physicians and patients may not properly adhere to clinical study protocols;
- The drugs may not be safe and effective or may be perceived as unsafe and ineffective;
- Other approved or investigational therapies may be viewed as safer, more effective or more convenient;
- Patients may experience severe side effects during treatment;
- Patients may die during a clinical study because their disease is too advanced or because they experience medical problems that are not related to the drug being studied;
- Other ongoing or new clinical trials conducted by other drug companies or ourselves may reduce the number of patients available for our studies;
- Patients may not enroll in our studies at the rate we expect;
- The FDA, international regulatory authorities or local internal review boards may delay or withhold approvals to commence clinical trials or to manufacture our drugs;
- The FDA or international regulatory authorities may request that additional studies be performed;
- We may incur higher than anticipated costs with respect to third-party manufacturers or service providers we engage to perform research or to conduct clinical trials on our behalf;
- Drug supplies may be insufficient to treat patients in the studies; and
- The results of preclinical testing may cause delays in the commencement of clinical trials.

If our projects are not completed in a timely manner, regulatory approvals could be delayed and our operations, liquidity and financial position could suffer. Without regulatory approvals, we cannot commercialize and sell these products. Therefore, potential revenues and profits from these products could be delayed or may never be realized.

Selling, general and administrative expenses

Selling, general and administrative expenses consist primarily of salaries and related expenses for corporate and marketing personnel, travel, office expenses, insurance, rent and utilities, professional fees, advertising and marketing and depreciation and amortization.

Cost of product sales

Cost of product sales comprises costs to manufacture or acquire products sold to customers. We manufacture treprostinil using advanced intermediate compounds purchased in bulk from third-party vendors. We utilize multiple vendors that are capable of manufacturing greater quantities of these compounds less expensively than we are. We expect to begin commercial production of treprostinil in our new facility in Silver Spring, Maryland, upon receiving FDA approval for the facility, which is anticipated to occur during the first half of 2009. Upon commercialization of oral treprostinil, we believe the demand for treprostinil diethanolamine, the form of treprostinil used in our oral tablet, will exceed that for treprostinil sodium, the form of treprostinil used in Remodulin and inhaled treprostinil. Accordingly, our planned manufacturing process has been designed to give us the flexibility to produce both forms of treprostinil efficiently in proportion to forecasted demand.

Cost of service sales

Cost of service sales includes salaries and related expenses, share-based compensation expense, and related overhead necessary to provide telemedicine services to customers.

purchased a building in the United Kingdom for approximately $16.3 million in August 2008 to serve as the new headquarters for our wholly-owned subsidiary, United Therapeutics Europe, Ltd.

Noncurrent deferred tax assets increased by approximately $82.3 million from approximately $93.7 million at December 31, 2007, to $176.0 million at December 31, 2008, primarily as a result of the deferred tax asset created by expensing the $150.0 million upfront payment to Lilly pursuant to a license agreement and a related manufacturing and supply agreement regarding the rights to commercialize tadalafil for pulmonary hypertension. For tax purposes, the $150.0 million upfront payment is considered to be a tax intangible asset which is expensed for tax purposes over an expected 15 year period.

Accounts payable increased by approximately $18.3 million from approximately $2.0 million at December 31, 2007 to $20.3 million at December 31, 2008. We attribute this increase to the timing of payments based on our semi-monthly payment cycle and the timing and volume of activity with respect to our construction projects.

The classification of approximately $250.0 million of our 0.50% Convertible Senior Notes due October 2011 (Convertible Senior Notes) shifted from a current liability at December 31, 2007, to a non-current liability at December 31, 2008, because contingent conversion criteria had not been satisfied at December 31, 2008. Specifically, the closing price of our common stock did not exceed 120% of the initial conversion price for more than 20 days during the 30 consecutive trading day period ending on December 31, 2008. As a result, the Convertible Senior Notes were not convertible at the election of their holders (Note Holders). This conversion determination is measured as of the end of each quarter. Accordingly, classification of the Convertible Senior Notes may change in future quarters.

Stockholders' equity was approximately $507.7 million at December 31, 2008, compared to approximately $295.8 million at December 31, 2007. The net increase of $211.9 million in stockholders' equity was driven in large part by the following significant transactions during the year ended December 31, 2008:

- Additional paid-in capital increased by approximately $110.9 million as a result of: (1) the receipt of $41.9 million in proceeds from the exercise of stock options during 2008; (2) the recognition of $28.5 million in stock-option based compensation expense; and (3) the recognition of $40.5 million in tax benefits primarily associated with share-based compensation.
- Treasury stock decreased by approximately $164.2 million. The decrease represents the cost basis of approximately 3.2 million treasury shares that we issued to Lilly in December 2008 in exchange for $150.0 million pursuant to our November 2008 stock purchase agreement. This transaction was one of several pursuant to agreements entered into with Lilly regarding the license, manufacture and supply of tadalafil for the treatment of pulmonary hypertension.
- Our accumulated deficit rose by approximately $57.0 million during the year ended December 31, 2008 due to our $42.8 million net loss incurred for the year ended December 31, 2008 and the loss we recognized in connection with the issuance of treasury stock to Lilly. The excess of the cost basis of the treasury shares issued over the purchase price of approximately $14.2 million was included in our accumulated deficit.

Results of Operations

Years ended December 31, 2008 and 2007

Revenues for the year ended December 31, 2008, were approximately $281.5 million, compared to approximately $210.9 million for the year ended December 31, 2007. The growth in revenues experienced during 2008 resulted in large part from the increase in the number of patients prescribed Remodulin.

The table below summarizes research and development expense by major project and non-project components (dollars in thousands):

	Year Ended December 31,		Percentage Change
	2008	2007	
Project and non-project:			
Cardiovascular	$ 60,549	$38,459	57.4%
License fees	150,000	11,013	1262.0%
Cancer	2,771	13,874	(80.0)%
Infectious disease	1,556	824	88.8%
Share-based compensation	16,200	12,373	30.9%
Other	8,105	6,809	19.0%
Total research and development expense	$239,181	$83,352	187.0%

Cardiovascular projects. Expenses associated with our inhaled and oral treprostinil programs increased by approximately $8.9 million for the year ended December 31, 2008. The increase in expenditures related to these programs resulted from activities associated with: (1) the progression of ongoing clinical trials; (2) the filing for regulatory approval for inhaled treprostinil in the United States and EU; and (3) the announcement of results of the FREEDOM-C trial. In addition, during the year ended December 31, 2008, expenses incurred in connection with the development of beraprost-MR rose by approximately $6.0 million when compared to the year ended December 31, 2007. This increase was largely attributable to milestone payments made to Toray pursuant to our license agreement for the development of beraprost-MR. Lastly, the growth during 2008 of our clinical staff to focus on new and investigational cardiovascular projects resulted in a corresponding increase in salaries and related expenses of approximately $5.1 million.

Cardiovascular license fees. During the quarter ended December 31, 2008, we made a one-time, upfront payment of $150.0 million pursuant to a license agreement and a related manufacturing and supply agreement entered into with Lilly regarding the commercialization of tadalafil. We expensed these payments as research and development since tadalafil has not been approved for marketing by the FDA and therefore commercial feasibility has not yet been demonstrated.

Cancer projects. In December 2007, we terminated our ovarian cancer program based on the results of the IMPACT I and II trials relating to OvaRex. Consequently, expenditures associated with our cancer programs decreased substantially in the year ended December 31, 2008 compared to the year ended December 31, 2007.

Share-based compensation. The increase in share-based compensation in 2008 resulted from: (1) achievement awards in connection with the attainment of specific company-wide performance milestones of which a portion is paid with awards granted under Share Tracking Awards Plan (STAP); and (2) an increase in the number of employees during the 2008.

The following table presents the components of net revenues (dollars in thousands):

	Year Ended December 31,		Percentage Change
	2007	2006	
Remodulin	$200,879	$152,478	31.7%
Telemedicine services and products	7,725	6,597	17.1%
Distributor fees	2,160	—	N/A
Other products	179	557	(67.9)%
Total revenues	$210,943	$159,632	32.1%

For the year ended December 31, 2007 and 2006, approximately 87% and 90% of our Remodulin revenues, respectively, were earned from our three distributors located in the United States.

Total revenues are reported net of estimated government rebates, prompt pay discounts and fees due to distributors for services. We pay government rebates to state Medicaid agencies that pay for Remodulin. We estimate our liability for such rebates based on the historical level of government rebates invoiced by state Medicaid agencies relative to sales of Remodulin in the United States. Prompt pay discounts are offered on sales of Remodulin if the related invoices are paid in full--generally within 60 days from the date of sale. We estimated our liability for prompt pay discounts based on historical payment patterns. Fees paid to distributors for services are estimated based on contractual rates for specific services applied to the estimated units of service provided by the distributors for the period.

The table below presents a reconciliation of the liability accounts associated with estimated government rebates, prompt pay discounts and distributor fees for services and the net reductions to revenues relating to these items (in thousands):

	Year Ended December 31,	
	2007	2006
Liability accounts, at beginning of period	$ 2,366	$ 1,590
Additions to liability attributed to sales in:		
Current period	12,439	9,442
Prior period	278	—
Payments or reductions attributed to sales in:		
Current period	(9,838)	(7,163)
Prior period	(2,366)	(1,503)
Liability accounts, at end of period	$ 2,879	$ 2,366
Net reductions to revenues	$12,703	$ 9,442

expense in December 2007 of approximately $20.3 million, representing the fair market value of these stock options in excess of the $3.5 million recognized at September 30, 2007. Our market capitalization increased by approximately $814.7 million from September 30, 2007, to December 31, 2007. The offset to this expense was an increase to additional paid-in capital.

An impairment of the intangible assets related to the HeartBar® product trade name totaling approximately $2.0 million was recorded during the year ended December 31, 2006. This impairment was required since the HeartBar product was discontinued in January 2006 and is no longer sold. In September 2007, based on a United States Supreme Court decision concerning the enforceability of patents and a publication discounting the benefits of arginine supplementation, we decided to discontinue selling any arginine related products and we reevaluated our assumptions used in determining the recoverability of our arginine patents. As a result, an impairment charge of $1.6 million was recorded.

In December 2007, based on the announcement of the failure of our IMPACT I and II Phase III trials of OvaRex for advanced ovarian cancer, the stock price of ViRexx Medical Corp. declined. We considered this decline to be an other-than-temporary impairment of approximately $1.9 million. Based on the quoted market price at December 31, 2007, the book value of our ViRexx investment was approximately $505,000.

Cost of product sales was approximately 10% of net product sales for each of the years ended December 31, 2007 and 2006. Cost of service sales was approximately 32% and 33% of service sales for the years ended December 31, 2007 and 2006, respectively.

We recognized income tax benefit of approximately $3.3 million and $34.1 million for the years ended December 31, 2007 and 2006, respectively. The tax benefit generated for 2007 was primarily due to the amount of tax credits generated during the year from our orphan drug related research and development activities. For the year ended December 31, 2006, the tax benefit recognized was due primarily to reductions of approximately $45.7 million in the valuation allowance against our deferred tax assets based on our determination that certain of these deferred tax assets are more likely than not to be realizable.

Liquidity and Capital Resources

Subsequent to the FDA's initial approval of Remodulin in 2002, we have funded our operations principally from Remodulin-related revenues and expect to do so in the future. We believe that our existing revenues and working capital resources will be adequate to fund our operations as demand for Remodulin has grown steadily since 2002 and our customer base remains stable. Furthermore, we believe that our customer base presents minimal credit risk. We have several therapies that are in the later stages of development and believe that, if approved for marketing, they will augment future revenue growth and cash flows. However, any projections of future cash needs and cash flows are inherently subject to uncertainty. To compensate for such uncertainty, we may raise additional cash in the future and believe we have options and the ability to do so. See *Item 1A—Risk Factors—We have a history of losses and may not maintain profitability* and *Item 1A—Risk Factors—We may fail to meet third-party projections for our revenue or profits*.

Operating Cash Flows and Working Capital

Net cash used by operating activities was approximately $49.2 million for the year ended December 31, 2008, compared to approximately $48.9 million in net cash provided by operations for the year ended December 31, 2007. The decrease in operating cash flows was driven by a one-time upfront payment of $150.0 million to Lilly for the license rights to tadalafil, pursuant to the licensing and the manufacturing and supply agreements which became effective in December 2008. The related one-time fee was expensed as research and development in December 2008, and was the principal factor that led to our net loss for the year. In a related transaction, we issued approximately 3.2 million shares of our common stock from treasury to Lilly for $150.0 million pursuant to a stock purchase agreement entered into with Lilly in connection with the acquisition of license rights to tadalafil. As such, collectively, our transactions with Lilly had no impact on net cash flows.

distribution of other drug candidates that we are developing. The offices are used by our clinical development and sales and marketing staffs.

In December 2007, we began construction of a combination office and laboratory facility that will attach to our Phase I Laboratory in Silver Spring, Maryland (Phase II Facility). Projected costs to construct this facility are anticipated to be $100.0 million. In November 2008, we agreed to the terms of a construction management agreement with the Whiting-Turner Contracting Company (Whiting-Turner) relating to the construction of the Phase II Facility (GMP Contract). Under the terms of the GMP Contract, costs to complete the construction of the Phase II Facility generally cannot exceed $61.3 million (the Guaranteed Maximum Price). The Guaranteed Maximum Price excludes certain costs of construction that we expect to incur and that have been included in our projected costs to complete the Phase II Facility. Whiting-Turner will be responsible for any cost overruns above the Guaranteed Maximum Price and will share a portion of the savings in the event costs of constructing the Phase II Facility are less than the Guaranteed Maximum Price. In addition, Whiting-Turner is subject to penalties in the event that construction of the Phase II Facility is not completed by November 16, 2009, unless an agreed-upon change order alters the scope of work set forth under the GMP Contract. We spent approximately $61.2 million and $24.5 million relating to the construction of the RTP facility and Phase II facility, respectively, during 2008. As of December 31, 2008, inception-to-date expenditures approached $109.0 million on these two construction projects. We expect to continue to fund our construction projects using our existing cash and cash flows to be generated by our operations.

Share Tracking Awards Plan

Effective June 2, 2008, we adopted the STAP. Awards granted under the STAP entitle participants to receive in cash the appreciation in our common stock, which is calculated as the positive difference between the closing price of our common stock on the date of grant and the date of exercise. Accordingly, the STAP could require substantial cash payments as awards vest and participants begin exercising them. Our operating budgets incorporate anticipated outlays of cash relating to the STAP, and we believe future cash flows will be sufficient to accommodate our obligations under the STAP and the future operating requirements of our business.

License Fees

Under our existing license agreements, we are obligated to make royalty payments on sales of Remodulin that exceed annual net sales of $25.0 million. Royalty obligations on sales of currently marketed products range up to 10 percent of related sales.

Convertible Senior Notes

On October 30, 2006, we issued at par value $250.0 million of Convertible Senior Notes. We pay interest on the Convertible Senior Notes in arrears semi-annually on April 15 and October 15 of each year—approximately $1.3 million annually. The Convertible Senior Notes are unsecured, unsubordinated obligations that rank equally with all of our other unsecured and unsubordinated indebtedness. The initial conversion price is $75.2257 per share. Conversion can occur: (i) anytime after July 15, 2011; (ii) during any calendar quarter that follows a calendar quarter in which the price of our common stock exceeded 120% of the initial conversion price for at least 20 days during the 30 consecutive trading-day period ending on the last trading day of the quarter; (iii) during the ten consecutive trading-day period following any five consecutive trading-day period in which the trading price of the Convertible Senior Notes was less than 95% of the closing price of our common stock multiplied by the then current conversion rate; or (iv) upon specified distributions to our shareholders, corporate transactions, or in the event that our common stock ceases to be listed on the NASDAQ Global Select Market (NASDAQ) and is not listed for trading on another U.S. national or regional securities exchange.

common stock to Toray in March 2007. The terms of our amended agreement give Toray the right to request that we repurchase these shares at the price of $54.41 per share upon 30 days prior written notice. To date, we have not received notification from Toray that they would like us to repurchase these shares.

Contractual Obligations and Off-Balance Sheet Arrangements

At December 31, 2008, we had the following contractual obligations (in thousands):

	Payments Due by Period				
	Total	Less than 1 year	2-3 Years	4-5 Years	More than 6 Years
Convertible Senior Notes(1)	$249,978	$ —	$249,978	$ —	$ —
Lease obligation(2)	32,000	—	32,000	—	—
Operating lease obligations	6,214	2,088	2,762	1,351	13
Construction commitment(3)	59,536	59,536	—	—	—
Obligations under the STAP(4)	20,214	6,738	13,476	—	—
Purchase commitments	3,217	1,217	2,000	—	—
Milestone payments(5)	32,715	2,530	16,675	10,590	2,920
Total(6)	$403,874	$72,109	$316,891	$11,941	$2,933

(1) The principal balance of the Convertible Senior Notes is to be repaid in cash. Convertibility may vary depending on whether our stock price meets specified criteria which is determined on a quarterly basis.

(2) The lease obligation assumes that the purchase option will be elected at the end of the Base Term. Refer to Note 10 to the consolidated financial statements for a complete discussion of the arrangement.

(3) Representing our remaining obligations under agreements currently in effect relating to our construction projects in Silver Spring, Maryland and Research Triangle Park, North Carolina.

(4) We estimated the obligation based on the intrinsic value of outstanding STAP awards expected to vest as of December 31, 2008 assuming that awards will be exercised immediately upon vesting.

(5) We license products from other companies under various license agreements. These agreements generally require that we make specific cash payments upon the achievement of specific product development milestones and commercialization. The timing and amounts of related milestone payments have been estimated based on: (1) when we believe milestones will be achieved; and (2) the assumption that all milestones established within these license agreements will be successfully attained.

(6) As of December 31, 2008, we had approximately $5.9 million of unrecognized tax benefits. The contractual obligations disclosed above exclude these amounts due to the uncertainty surrounding the amounts and timing of future payments.

uncertainty. When we determine that the decline in value of a security is other than temporary, we are required to recognize an impairment charge within our consolidated statement of operations and establish a new cost basis for the security at its then current fair value. During the year ended December 31, 2008, we recognized an impairment charge of $6.3 million within earnings related to our investments in ARS. Refer to Note 4 to the consolidated financial statements included elsewhere in this Annual Report on Form 10-K for a complete discussion.

In addition, pursuant to SFAS 115, we classify certain marketable investments as held-to-maturity because we believe we have the positive intent and ability to hold related securities until they mature. This assertion requires us to make forward-looking judgments regarding our future cash flow requirements relative to the maturity dates of such securities. To reduce the level of uncertainty associated in making this determination, we invest in securities that do not possess extended maturities.

Fair Value Measurements

SFAS No. 157, *Fair Value Measurements* (SFAS 157), requires that we disclose assets and liabilities subject to fair value measurements within a fair value hierarchy (SFAS 157 Hierarchy). The SFAS 157 Hierarchy gives the highest priority to fair value measurements based on unadjusted quoted prices in active markets for identical assets or liabilities (Level 1 measurements) and the lowest priority to fair value measurements derived through the use of unobservable inputs (Level 3 measurements). Assets and liabilities are classified within the SFAS 157 Hierarchy, in their entirety, based on the lowest level input that is significant to the related fair value measurement. Determining where within the fair value hierarchy a particular asset or liability should be disclosed involves judgment regarding the significance of inputs relative to a fair value measurement and where such inputs lie within the SFAS 157 Hierarchy. Furthermore, securities that are illiquid, or are not traded, have little or no price transparency (Level 3 measurements). As such, estimating the fair value of our Level 3 securities involves the use of significant subjective assumptions that we believe market participants would consider in pricing such securities. We employ a discounted cash flow model to estimate the fair value of our Level 3 securities. Accordingly, inputs to the model that include estimating the amounts and timing of expected cash flows, the expected term of the securities and a discount rate appropriately adjusted for illiquidity or other risks involve a significant degree of judgment.

Investment in Affiliate

We use the equity method of accounting for our investment in Northern Therapeutics, Inc. (Northern). The equity method of accounting requires that we report our share of our Northern's net losses or earnings in our consolidated financial statements. Consolidation is not required unless we possess the ability to control Northern. Generally, the ability to exercise control over an entity occurs when voting interests in that entity exceed 50%. We maintain an ownership interest in Northern of approximately 68%. However, because Northern's minority owners have substantive participation rights as described in EITF Issue No. 96-19, *Investors' Accounting for an Investee When the Investor has a Majority of the Voting Interest but Minority Shareholder or Shareholders Have Certain Approval or Veto Rights,* we concluded that we do not have the ability to control Northern's operations. Therefore, Northern's financial statements have not been included in our consolidated financial statements.

Income Taxes

Income taxes are accounted for in accordance with the asset and liability method set forth under SFAS No. 109, *Accounting for Income Taxes* (SFAS 109). Accordingly, deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their tax bases. Deferred tax assets and liabilities are measured using the enacted tax rates that are expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. Deferred tax assets

financing obligation. Accordingly, as of September 30, 2008, we capitalized the estimated fair value of the Phase I Laboratory, totaling $29.0 million, and recognized a corresponding lease obligation on our consolidated balance sheet. We are accreting the lease obligation to $32.0 million, the purchase price of the Phase I Laboratory, through the recognition of periodic interest charges using the effective interest method. The accretion period began on September 30, 2008 and will run through May 2011. In addition, we are depreciating the Phase I Laboratory over its estimated economic useful life.

Pension Benefit Obligation

We account for the SERP in accordance with SFAS No. 158, *Employers' Accounting for Defined Benefit Pension and Other Postretirement Plans* (SFAS 158), and related standards and interpretations. Accordingly, we recognize on our consolidated balance sheet a liability equal to the unfunded status of the SERP (equal to the projected benefit obligation, as we do not fund the SERP) and measure our projected benefit obligation as of the end of our fiscal year. Estimating the SERP obligation involves the use of judgments and estimates. The SERP obligation and related pension expense are derived from actuarial valuations that are developed using a number of assumptions. A key assumption to the valuation is the discount rate. The discount rate should be representative of the rate associated with high-quality, fixed-income debt securities. Changes in the discount rate can significantly impact the measurement of the SERP obligation. Other actuarial assumptions include participant demographics such as the expected rate of salary increases and withdrawal rates, among others. Actual experience may differ from actuarial assumptions. Changes in any of these assumptions can also affect the measurement of the SERP obligation.

Share-based Compensation

We account for share-based awards in accordance with SFAS No. 123 (revised 2004), *Share-Based Payment* (SFAS 123R), and related interpretive guidance. Our share-based awards are classified as either equity (stock options) or as liabilities (STAP awards) and compensation expense to be recognized is determined based on the fair value of related awards. We estimate the fair value of these awards using the Black-Scholes-Merton valuation model. Valuation models, like the Black-Scholes-Merton model, require the use of subjective assumptions that could materially impact the estimation of fair value and related compensation expense to be recognized. These assumptions include, among others, the expected volatility of our stock price, the expected term of awards and the expected forfeiture rate. Developing these assumptions requires the use of judgment.

Recently Issued Accounting Standards

In May 2008, the FASB issued Staff Position APB 14-1, *Accounting for Convertible Debt Instruments That May Be Settled in Cash Upon Conversion (Including Partial Cash Settlement)* (FSP APB 14-1). FSP APB 14-1 applies to certain convertible debt instruments that may be settled in cash or other assets, or partially in cash, upon conversion. Issuers of such instruments are required under FSP APB 14-1 to account for the liability and equity components separately in a manner that reflects the issuer's nonconvertible debt borrowing rate when interest expense is subsequently recognized. Specifically, FSP APB 14-1 requires the difference between the convertible debt proceeds and the fair value of the liability, absent any conversion rights, to be assigned to the equity component and recognized as part of stockholders' equity and as a discount for determining the carrying value of the debt. The discounted carrying value of the debt is amortized as interest expense using the interest method over the expected life of the debt. FSP APB 14-1 is effective for fiscal years beginning after December 15, 2008, and interim periods within those fiscal years and is to be applied retrospectively to all periods presented. Our Convertible Senior Notes fall within the scope of FSP APB 14-1—see Note 9 to the consolidated financial statements included in this Annual Report on Form 10-K. While adoption of FSP APB 14-1 will not change the cash flow requirements of our Convertible Senior Notes, non-cash interest expense

In December 2007, the FASB issued SFAS No. 160, *Noncontrolling Interests in Consolidated Financial Statements—an amendment of ARB No. 51* (SFAS 160). SFAS 160 establishes accounting and reporting standards for the noncontrolling interest in a subsidiary and for the deconsolidation of a subsidiary. This statement is effective, prospectively, for fiscal years beginning after December 15, 2008 except for certain retrospective disclosure requirements. We do not expect the adoption of SFAS 160 to have any impact on our consolidated financial statements upon initial adoption.

In December 2007, the FASB issued SFAS No. 141 (Revised 2007), *Business Combinations—a replacement of FASB Statement No. 141* (SFAS 141R). SFAS 141R significantly changes the principles and requirements for how the acquirer of a business recognizes and measures in its financial statements the identifiable assets acquired, the liabilities assumed, and any non-controlling interest in the acquiree. SFAS 141R also provides guidance for recognizing and measuring goodwill acquired in a business combination and determines what information to disclose to enable users of the financial statements to evaluate the nature and financial effects of a business combination. SFAS 141R is effective, prospectively, for fiscal years beginning after December 15, 2008, except for certain retrospective adjustments to deferred tax balances. The potential impact of adopting SFAS 141R on our consolidated financial statements will depend on whether we enter into any future acquisitions and the magnitude of such acquisitions.

In June 2007, the FASB ratified EITF Issue No. 07-1, *Accounting for Collaboration Arrangements Related to the Development and Commercialization of Intellectual Property* (EITF 07-1). EITF 07-1 provides guidance on how the parties to a collaborative agreement should account for costs incurred and revenue generated on sales to third parties and how sharing payments pursuant to a collaboration agreement should be presented in the income statement. EITF 07-1 will be effective for fiscal years beginning after December 15, 2008 and interim periods within those fiscal years and shall be applied retrospectively. We are assessing the potential impact, if any, the adoption of EITF 07-1 will have on our consolidated financial statements.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

As of December 31, 2008, we hold investments of approximately $36.8 million (par value) in ARS. We are exposed to market risk related to the ARS as a result of the general collapse of the credit markets and the continued uncertainty surrounding the financial markets. The ARS maintain an AAA credit rating and are backed by student-loan portfolios that are approximately 91% guaranteed by the federal government. However, since February 2008, auctions for the ARS have failed, rendering these securities illiquid. Consequently, the fair value of the ARS has continued to decline in value. Through November 2008, we classified the ARS as available-for-sale and accounted for the decline in their value as temporary within other comprehensive losses (equity) based on our intent and ability to hold these securities until they recover their value. However, upon our entering into the Rights Offer in November 2008, we could no longer assert our positive intent to hold these securities indefinitely. Consequently, we recognized an other-than-temporary impairment loss of approximately $6.3 million within earnings during the quarter ended December 31, 2008. Concurrently, we reclassified the ARS from the available-for-sale to the trading category. With this transfer into the trading classification, all future changes in fair value of the ARS will be recognized within earnings until the securities are liquidated or otherwise disposed. Furthermore, there can be no assurances that the ARS will ever fully recover their value.

To mitigate the risks associated with our investment, we entered into the Rights Offer, under which we have a Put Option that gives us the ability to require the investment firm (the counterparty to the Rights Offer) to repurchase the ARS at a price equal to their par value during a specific period beginning in June 2010. The Put Option has been recognized at fair value as a financial asset on our consolidated balance sheet at December 31, 2008. Subsequent changes in the fair value of the Put Option will be recognized within earnings. We expect the future price movements relating to the

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Report of Independent Registered Public Accounting Firm

The Board of Directors and Shareholders
United Therapeutics Corporation

We have audited the accompanying consolidated balance sheets of United Therapeutics Corporation as of December 31, 2008 and 2007, and the related consolidated statements of operations, stockholders' equity, and cash flows for each of the three years in the period ended December 31, 2008. Our audits also included the financial statement schedule listed in the Index at Item 15 (a)(2). These financial statements and schedule are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements and 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 financial statements referred to above present fairly, in all material respects, the consolidated financial position of United Therapeutics Corporation at December 31, 2008 and 2007, and the consolidated results of its operations and its cash flows for each of the three years in the period ended December 31, 2008, in conformity with U.S. generally accepted accounting principles. Also, in our opinion, the related financial statement schedule, when considered in relation to the basic financial statements taken as a whole, presents fairly in all material respects the information set forth therein.

As discussed in Note 13 to the consolidated financial statements, United Therapeutics Corporation adopted FASB Interpretation No. 48, *Accounting for Uncertainty in Income Taxes—an Interpretation of FASB Statement No. 109* effective January 1, 2007.

We also have audited, in accordance with the Standards of the Public Company Accounting Oversight Board (United States), United Therapeutics Corporation's 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 and our report dated February 26, 2009 expressed an unqualified opinion thereon.

/s/ Ernst & Young LLP

McLean, Virginia
February 26, 2009

UNITED THERAPEUTICS CORPORATION

Consolidated Balance Sheets

(In thousands, except share and per share data)

	December 31, 2008	December 31, 2007
Assets		
Current assets:		
Cash and cash equivalents	$129,452	$ 139,323
Marketable investments	106,596	150,729
Accounts receivable, net of allowance of none for 2008 and 2007	28,311	25,654
Other receivable	752	2,959
Interest receivable	1,537	1,049
Prepaid expenses	11,600	5,948
Inventories, net	14,372	13,211
Deferred tax assets	4,827	13,588
Total current assets	297,447	352,461
Marketable investments	100,270	9,740
Marketable investments and cash—restricted	45,755	44,195
Goodwill and other intangible assets	7,838	8,427
Property, plant, and equipment, net	221,066	69,354
Deferred tax assets	175,969	93,700
Other assets ($7,685 measured under the fair value option)	22,974	9,141
Total assets	$871,319	$ 587,018
Liabilities and Stockholders' Equity		
Current liabilities:		
Accounts payable	$ 20,334	$ 2,000
Accrued expenses	20,853	17,942
Notes payable	—	250,000
Other current liabilities	16,639	2,818
Total current liabilities	57,826	272,760
Notes payable	249,978	—
Lease obligation	29,261	—
Other liabilities	15,673	7,586
Total liabilities	352,738	280,346
Commitments and contingencies:		
Common stock subject to repurchase	10,882	10,882
Stockholders' equity:		
Preferred stock, par value $.01, 10,000,000 shares authorized, no shares issued	—	—
Series A junior participating preferred stock, par value $.01, 100,000 shares authorized, no shares issued	—	—
Common stock, par value $.01, 100,000,000 shares authorized, 27,662,151 and 26,629,189 shares issued at December 31, 2008 and 2007, respectively, and 26,431,356 and 22,247,592 outstanding at December 31, 2008 and 2007, respectively	276	266
Additional paid-in capital	659,245	548,327
Accumulated other comprehensive (loss) income	(5,913)	317
Treasury stock at cost, 1,230,795 and 4,381,597 shares at December 31, 2008 and 2007, respectively	(67,395)	(231,619)
Accumulated deficit	(78,514)	(21,501)
Total stockholders' equity	507,699	295,790
Total liabilities and stockholders' equity	$871,319	$ 587,018

See accompanying notes to consolidated financial statements.

UNITED THERAPEUTICS CORPORATION

Consolidated Statements of Stockholders' Equity

(In thousands, except share data)

	Common Stock		Additional Paid-in Capital	Accumulated Other Comprehensive Income	Treasury Stock	Accumulated Deficit	Total
	Shares	Amount					
Balance, December 31, 2005	23,845,004	$239	$393,469	$ 3,593	$ (6,874)	$(115,325)	$ 275,102
Net income	—	—	—	—	—	73,965	73,965
Foreign currency translation adjustments	—	—	—	336	—	—	336
Unrealized loss on available-for-sale securities	—	—	—	(2,453)	—	—	(2,453)
Total other comprehensive income	—	—	—	(2,117)	—	73,965	71,848
Exercise of stock options	787,149	7	14,437	—	—	—	14,444
Tax benefit from exercises of non-qualified stock options	—	—	12,236	—	—	—	12,236
Treasury stock repurchases	—	—	—	—	(157,686)	—	(157,686)
Cost of call spread options, net	—	—	(35,400)	—	—	—	(35,400)
Options issued in exchange for services	—	—	24,062	—	—	—	24,062
Balance, December 31, 2006	24,632,153	246	408,804	1,476	(164,560)	(41,360)	204,606
Net income	—	—	—	—	—	19,859	19,859
Foreign currency translation adjustments	—	—	—	285	—	—	285
Unrealized loss on available-for-sale securities	—	—	—	(892)	—	—	(892)
Unrealized loss on pension liability	—	—	—	(552)	—	—	(552)
Total other comprehensive income	—	—	—	(1,159)	—	19,859	18,700
Exercise of stock options	1,797,036	18	58,326	—	—	—	58,344
Tax benefit from exercises of non-qualified stock options	—	—	32,089	—	—	—	32,089
Treasury stock repurchases	—	—	—	—	(67,059)	—	(67,059)
Options issued in exchange for services	—	—	48,979	—	—	—	48,979
Stock issued for license right	200,000	2	129	—	—	—	131
Balance, December 31, 2007	26,629,189	266	548,327	317	(231,619)	(21,501)	295,790
Net loss	—	—	—	—	—	(42,789)	(42,789)
Foreign currency translation adjustments	—	—	—	(5,489)	—	—	(5,489)
Unrealized loss on available-for-sale securities	—	—	—	(191)	—	—	(191)
Unrealized loss on pension liability	—	—	—	(550)	—	—	(550)
Total other comprehensive loss	—	—	—	(6,230)	—	(42,789)	(49,019)
Issuance of treasury stock	—	—	—	—	164,224	(14,224)	150,000
Exercise of stock options	1,032,962	10	41,926	—	—	—	41,936
Tax benefit from exercises of non-qualified stock options	—	—	40,524	—	—	—	40,524
Options issued in exchange for services	—	—	28,468	—	—	—	28,468
Balance, December 31, 2008	27,662,151	$276	$659,245	$(5,913)	$ (67,395)	$ (78,514)	$ 507,699

See accompanying notes to consolidated financial statements.

1. Organization and Business Description

United Therapeutics Corporation (United Therapeutics) is a biotechnology company focused on the development and commercialization of unique products to address the unmet medical needs of patients with chronic and life-threatening cardiovascular and infectious diseases and cancer. We were incorporated on June 26, 1996, under the laws of the State of Delaware and have the following wholly-owned subsidiaries: Lung Rx, Inc., Unither Pharmaceuticals, Inc., Unither Telmed, Ltd., Unither.com, Inc., United Therapeutics Europe, Ltd., Unither Therapeutik GmbH, Unither Pharma, Inc., Medicomp, Inc., Unither Neurosciences, Inc., LungRx Limited, Unither Biotech Inc., and Unither Virology, LLC. As used in these notes to the consolidated financial statements, unless the context otherwise requires, the terms "we," "us," "our," and similar terms refer to United Therapeutics and its consolidated subsidiaries.

Our lead product is Remodulin® (treprostinil sodium) Injection (Remodulin), a stable synthetic form of prostacyclin. Prostacyclin is an important molecule produced by the body that has powerful effects on blood vessel health and function. Remodulin was first approved in 2002 by the United States Food and Drug Administration (FDA) for use as a continuous subcutaneous infusion for the treatment of pulmonary arterial hypertension (PAH). Since 2002, the FDA has expanded its approval of Remodulin for intravenous use and for the treatment of patients who require transition from Flolan®, another intravenously administered prostacyclin. Remodulin is also approved for use in countries outside of the United States, predominantly for subcutaneous administration.

We have generated pharmaceutical revenues from sales of Remodulin, distributor fees and arginine royalty payments in the United States, Canada, the European Union (EU), South America and Asia. In addition, we have generated non-pharmaceutical revenues from telemedicine products and services in the United States.

2. Summary of Significant Accounting Policies

Principles of Consolidation

The accompanying consolidated financial statements include the accounts of United Therapeutics and its wholly-owned subsidiaries. All intercompany balances and transactions have been eliminated in consolidation.

Use of Estimates

The preparation of the consolidated financial statements in accordance with accounting principles generally accepted in the United States (GAAP) requires management to make estimates and assumptions that affect reported amounts of assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Fair Value of Financial Instruments

The carrying amounts of cash and cash equivalents, accounts receivables, accounts payable, and accrued expenses, approximate fair value because of their short maturities. The fair values of marketable investments and notes payable are reported in Notes 4 and 5, respectively.

2. Summary of Significant Accounting Policies (Continued)

Debt and equity securities that we may acquire with the intention to sell in the near term are classified as trading securities. Trading securities are recorded at fair value with unrealized gains and losses recognized in earnings.

We classify publicly traded equity investments that we do not intend to hold until maturity or sell in the near term as available-for-sale. Available-for-sale securities are carried at fair value with unrealized gains and losses reported net of tax as a component of comprehensive income within the equity section of the consolidated balance sheet.

We monitor our investment portfolio for impairment quarterly or more frequently if circumstances warrant. In the event that the carrying value of an investment exceeds its fair value and the decline in value is determined to be other-than-temporary, we record an impairment charge within earnings and establish a new cost basis for the investment at its then current fair value. In determining whether a decline in the value of an investment is other-than-temporary, we evaluate available quantitative and qualitative factors. These factors include general market conditions, the duration and extent to which fair value has been less than the carrying value, our intent and ability to hold an affected investment until anticipated recovery in fair value, and the investment issuer's financial condition and business outlook.

Inventories

Inventories are stated at the lower of cost (first-in, first-out method) or market (current replacement cost) and consist of the following, net of reserves (in thousands):

	December 31,	
	2008	2007
Remodulin:		
Raw materials	$ 3,387	$ 3,364
Work in progress	6,558	4,782
Finished goods	4,085	4,615
Remodulin delivery pumps and medical supplies	194	291
Cardiac monitoring equipment components and supplies	148	159
Total inventories	$14,372	$13,211

Inventories include Remodulin and cardiac monitoring equipment that are formulated and/or produced by third-party manufacturers.

Goodwill and Other Intangible Assets

Goodwill represents the excess of purchase price over the fair value of net identifiable assets associated with previous acquisitions. Other intangible assets consist of technology and patents, and are being amortized over their respective estimated useful lives of ten to eighteen years.

We review the carrying value of goodwill for impairment annually during the fourth quarter or more frequently if impairment indicators exist. In determining whether goodwill is impaired, we compare the estimated fair value of the reporting unit to which goodwill has been assigned to its carrying value. We estimate the fair value of a reporting unit by calculating its expected future

2. Summary of Significant Accounting Policies (Continued)

Property, Plant and Equipment

Property, plant and equipment are recorded at cost and depreciated over their estimated useful lives using the straight-line method. The estimated useful lives of property, plant and equipment by major category are as follows:

Buildings	39 Years
Building improvements	15-39 Years
Furniture, equipment and vehicle	3-15 Years
Holter and event cardiac monitoring systems	3-7 Years
Leasehold improvements	Remaining lease term, or the estimated useful life of the improvement, whichever is shorter

Property, plant and equipment consisted of the following (in thousands):

	December 31, 2008	December 31, 2007
Land	$ 11,987	$ 10,507
Buildings, building improvements and leasehold improvements	61,511	19,203
Buildings under construction	115,022	26,134
Holter and event cardiac monitoring systems	4,552	3,915
Furniture, equipment and vehicle	41,743	19,955
	234,815	79,714
Less—accumulated depreciation	(13,749)	(10,360)
Property, plant and equipment, net	$221,066	$ 69,354

Depreciation expense for the years ended December 31, 2008, 2007 and 2006, was approximately $3.9 million, $2.9 million and $2.4 million, respectively.

Buildings under construction relate to the construction of our facilities in Silver Spring, Maryland, and Research Triangle Park, North Carolina, and are stated at cost, which includes the cost of construction and other direct costs attributable to construction. Depreciation is not recognized on buildings under construction until construction is completed and related assets are available for their intended use. As of December 31, 2008, the estimated costs to complete these facilities were anticipated to be $93.8 million. We capitalize interest cost incurred on funds used to construct these facilities. During the years ended December 31, 2008 and 2007, we capitalized interest of approximately $3.1 million and $689,000, respectively.

Treasury Stock

Treasury stock is recorded at cost, including commissions and fees. The cost of treasury shares sold is determined using the first-in, first-out method. Related gains and losses on sales of treasury stock are recognized as adjustments to stockholders' equity.

2. Summary of Significant Accounting Policies (Continued)

was not reasonably assured at the inception of the arrangement; (3) substantive effort is involved to achieve the milestone; and (4) the amount of the milestone payment appears reasonable in relation to the effort expended, other milestones in the arrangement and the related risk associated with achievement of the milestone. If any of these conditions is not met, we recognize a proportionate amount of the milestone payment upon receipt as revenue that correlates to work already performed and the remaining portion of the milestone payment is deferred and recognized as we complete our performance obligations.

Telemedicine service and equipment revenue. Revenues from cardiac monitoring analysis services are recognized when the services are performed. Product sales of cardiac monitoring systems are recognized upon delivery and installation.

Research and Development

Research and product development costs are expensed as incurred except for payments made in advance of services to be provided to us. Related expenses consist of internal labor and overhead, costs to acquire pharmaceutical products and product rights for development, materials used in clinical trials and amounts paid to third parties for services and materials relating to drug development and clinical trials.

We recognize the following as research and development expense in the period related costs are incurred:

- Costs associated with production activities in our manufacturing facilities prior to receiving FDA approval for such facilities;
- Costs incurred in licensing the rights to technologies in the research and development stage that have no alternative future uses; and
- Upfront payments made pursuant to license and distribution rights arrangements prior to regulatory approval of the underlying pharmaceutical product absent any alternative future uses.

Share-Based Compensation

We account for share-based awards in accordance with SFAS No. 123 (revised 2004), *Share-Based Payment* (SFAS 123R), as interpreted, by SAB 107 and SAB 110 issued by the SEC. For stock option awards, the amount of compensation expense to be recognized is based on the grant date fair value. Related compensation expense is recognized on a straight-line basis over the requisite service period, or vesting period of option awards that are expected to vest. We measure and recognize compensation expense associated with share-based awards issued to nonemployees pursuant to SFAS 123R and EITF Issue No. 96-18, *Accounting for Equity Instruments That Are Issued to Other Than Employees for Acquiring, or in Conjunction with Selling Goods or Services*. Share-based awards that require cash settlement upon exercise (share-tracking awards) are classified as a liability. Accordingly, the fair value of related awards is measured at each reporting date until awards are exercised or are otherwise no longer outstanding. Related changes in the fair value of outstanding awards at each reporting date are recognized as share-based compensation expense.

2. Summary of Significant Accounting Policies (Continued)

these financial institutions, issuers or customers failed to perform their obligations under the terms of these financial instruments, our maximum exposure to potential losses would approximate amounts reported on our consolidated balance sheets.

Concentration of suppliers. We currently rely on a single supplier to perform stability studies on Remodulin, formulate treprostinil in both oral and inhaled forms, and analyze other products we are developing. In addition, Remodulin is formulated and packaged by a single producer and our cardiac monitoring devices are produced by one manufacturer. Although our current suppliers could be replaced, we believe that a change in suppliers could disrupt the distribution of Remodulin and other products and services, and impede the progress of clinical trials and commercial launch.

Concentration of products, revenues and customers. During the years ended December 31, 2008, 2007 and 2006, sales of Remodulin accounted for approximately 96%, 95% and 96%, respectively, of our total net revenues. Net sales of Remodulin in the United States to our three distributors comprised approximately 89%, 88% and 90%, respectively, of such revenues. At December 31, 2008 and 2007, approximately 79% and 84%, respectively, of accounts receivable were due from these distributors. While we rely on our distributors to market Remodulin, there are several other qualified distributors that could replace any one of our current distributors.

During the year ended December 31, 2008, we derived approximately 74% of our total net domestic revenues and approximately 69% of our total net Remodulin revenues from one customer in our pharmaceutical segment. Gross revenues from that customer are as follows (in thousands):

	Years Ended December 31,		
	2008	2007	2006
Accredo Therapeutics, Inc.	$184,865	$136,975	$101,584

3. Recently Issued Accounting Standards

In May 2008, the FASB issued Staff Position APB 14-1, *Accounting for Convertible Debt Instruments That May Be Settled in Cash Upon Conversion (Including Partial Cash Settlement)* (FSP APB 14-1). FSP APB 14-1 applies to certain convertible debt instruments that may be settled in cash or other assets, or partially in cash, upon conversion. Issuers of such instruments are required under FSP APB 14-1 to account for the liability and equity components separately in a manner that reflects the issuer's nonconvertible debt borrowing rate when interest expense is subsequently recognized. Specifically, FSP APB 14-1 requires the difference between the convertible debt proceeds and the fair value of the liability, absent any conversion rights, to be assigned to the equity component and recognized as part of stockholders' equity and as a discount for determining the carrying value of the debt. The discounted carrying value of the debt is amortized as interest expense using the interest method over the expected life of the debt. FSP APB 14-1 is effective for fiscal years beginning after December 15, 2008, and interim periods within those fiscal years and is to be applied retrospectively to all periods presented. Our 0.50% Convertible Senior Notes due October 2011 (Convertible Senior Notes) fall within the scope of FSP APB 14-1—see Note 9 to these consolidated financial statements. While adoption of FSP APB 14-1 will not change the cash flow requirements of our Convertible Senior Notes, non-cash interest expense associated with the amortization of the discount on the Convertible Senior Notes is expected to increase significantly. Upon the adoption of FSP APB 14-1, we will no longer recognize interest expense based on the Convertible Senior Notes' stated rate of interest.

3. Recently Issued Accounting Standards (Continued)

scope as SFAS 133 and is effective for fiscal years and interim periods beginning after November 15, 2008. We do not expect the adoption of SFAS 161 to have a material impact, if any, on our consolidated financial statements.

In December 2007, the FASB issued SFAS No. 160, *Noncontrolling Interests in Consolidated Financial Statements—an amendment of ARB No. 51* (SFAS 160). SFAS 160 establishes accounting and reporting standards for the noncontrolling interest in a subsidiary and for the deconsolidation of a subsidiary. This statement is effective, prospectively, for fiscal years beginning after December 15, 2008, except for certain retrospective disclosure requirements. We do not expect the adoption of SFAS 160 to have any impact on our consolidated financial statements upon initial adoption.

In December 2007, the FASB issued SFAS No. 141 (Revised 2007), *Business Combinations—a replacement of FASB Statement No. 141* (SFAS 141R). SFAS 141R significantly changes the principles and requirements for how the acquirer of a business recognizes and measures in its financial statements the identifiable assets acquired, the liabilities assumed, and any noncontrolling interest in the acquiree. SFAS 141R also provides guidance for recognizing and measuring goodwill acquired in a business combination and determines what information to disclose to enable users of the financial statements to evaluate the nature and financial effects of a business combination. SFAS 141R is effective, prospectively, for fiscal years beginning after December 15, 2008, except for certain retrospective adjustments to deferred tax balances. The potential impact of adopting SFAS 141R on our consolidated financial statements will depend on whether we enter into any future acquisitions and the magnitude of such acquisitions.

In June 2007, the FASB issued EITF Issue No. 07-1, *Accounting for Collaboration Arrangements Related to the Development and Commercialization of Intellectual Property* (EITF 07-1). EITF 07-1 provides guidance on how the parties to a collaborative agreement should account for costs incurred and revenue generated on sales to third parties and how sharing payments pursuant to a collaboration agreement should be presented in the income statement. EITF 07-1 will be effective for fiscal years beginning after December 15, 2008, and interim periods within those fiscal years and shall be applied retrospectively. We are assessing the potential impact, if any, the adoption of EITF 07-1 will have on our consolidated financial statements.

4. Marketable Investments (Continued)

The following table summarizes gross unrealized losses and the length of time marketable investments have been in a continuous unrealized loss position (in thousands):

	December 31,			
	2008		2007	
	Fair Value	Gross Unrealized Loss	Fair Value	Gross Unrealized Loss
Government sponsored:				
Less than one year	$ 9,886	$ (18)	$ —	$ —
Greater than one year	—	—	35,765	(214)
	9,886	(18)	35,765	(214)
Corporate notes:				
Less than one year	21,278	(151)	17,197	(15)
Greater than one year	—	—	—	—
	21,278	(151)	17,197	(15)
Total	$31,164	$(169)	$52,962	$(229)

We attribute the unrealized losses on held-to-maturity securities as of December 31, 2008 and 2007, to the variability in related market interest rates. We invest in debt securities that we believe possess low risk profiles and have the ability and intent to hold these investments until maturity. As such, we do not consider these investments to be other-than-temporarily impaired.

The following table summarizes the contractual maturities of held-to-maturity marketable investments at December 31, 2008 (in thousands):

	December 31, 2008	
	Amortized Cost	Fair Value
Due in less than one year	$106,596	$107,146
Due in one to two years	101,028	102,167
Due in three to five years	—	—
Due after five years	—	—
Total	$207,624	$209,313

Available-for-sale Investments

Through November 2008, marketable investments we classified as available-for-sale consisted of auction-rate securities issued by state and local government sponsored agencies (ARS). In November of 2008, we made a one-time transfer of available-for-sale securities to the trading classification as discussed below. The ARS maintain an AAA credit rating and are secured by pools of student loans that are approximately 91% insured by the federal government. Historically, these securities provided liquidity to investors through their interest rate reset feature—i.e., interest rates on these securities are reset through a bidding process (or auction) at frequent, pre-determined intervals. At each reset date, investors could either rollover and maintain their holdings or liquidate them at par value. Prior to

4. Marketable Investments (Continued)

value of the Put Option has been included as a Level 3 asset within the SFAS 157 hierarchy (See Note 5 of these consolidated financial statements for related disclosures).

We employed a DCF model to estimate the fair value of the Put Option. We believe that the estimated value of the Put Option represents the incremental value associated with the ability to recover the full cost of the ARS significantly earlier than would be otherwise possible, if at all, and the ability to obtain an immediate loan under the Rights Offer, as this right possesses value regardless of whether we expect to borrow under the Rights Offer. Key assumptions used in the DCF model are judgmental and include the following:

- A discount factor equal to the rate of interest consistent with the expected term of the Put Option and risk profile of the investment firm subject to the Put Option;
- Amount and timing of expected cash flows;
- Expected life of the Put Option prior to its exercise; and
- Assumed loan amounts.

The DCF methodology considered two scenarios. The first scenario assumed that we would borrow up to 50% of the ARS and the second scenario assumed that we would borrow up to 75% of the ARS. Under the DCF analysis, increases in the assumed loan balance would result in an increase in the fair value of the Put Option because the risk of counterparty non-performance diminishes. The estimated fair values generated under both scenarios were given equal weight in determining the pricing of the Put Option.

Concurrent with the acceptance of the Rights Offer, we made a one-time transfer of the ARS from the available-for-sale classification to the trading classification. Given the unprecedented circumstances underlying the transfer—i.e., the collapse of the credit markets and the unique nature of the Rights Offer—we believe that such a transfer is in accordance with the guidance provided under SFAS No. 115, *Accounting for Certain Investments in Debt and Equity Securities,* regarding transfers into the trading category. We made this one-time transfer so that the changes in the fair value of both the ARS and the Put Option will be recognized in a consistent manner, since we elected the fair value option to account for the Put Option. Consequently, all changes in fair value of the ARS subsequent to the transfer will be recognized within earnings. Because we do not believe it is likely that the ARS will be liquidated or otherwise disposed of within the next 12 months, the securities have been classified within non-current marketable investments on our consolidated balance sheet at December 31, 2008.

Prior to November 2008, we characterized and accounted for the declines in the fair value of the ARS as temporary. We supported this determination in large part by our intent and ability to hold the ARS until the credit markets stabilized sufficiently to allow us to liquidate the securities without realizing significant losses. Accordingly, related unrealized losses had been recorded as a component of equity within other comprehensive income. By entering into the Rights Offer, however, we can no longer demonstrate the positive intent to hold these securities indefinitely. As such, we recognized within earnings an other-than-temporary impairment charge of approximately $6.3 million during the fourth quarter of 2008 associated with all previously accumulated unrealized losses relating to the ARS.

4. Marketable Investments (Continued)

Equity Investments

Equity holdings consist of our investment in ViRexx Medical Corp. (ViRexx) and Twin Butte Energy Ltd (Twin Butte). Both of these investments were acquired in connection with our license agreements for the rights to the ViRexx platform of antibodies to treat various forms of cancer. Based on the results of the clinical trials related to these antibodies, we discontinued development of this platform in November 2007. Equity investments are accounted for as available-for-sale securities and are reported at their fair values, based on quoted market prices.

Because of the continued decline in the price of ViRexx's common stock and ViRexx's filing for bankruptcy during 2008, we recognized an other-than-temporary impairment loss of $505,000 during the year ended December 31, 2008 to write off the remaining basis of our investment. The fair value of our investment in Twin Butte was $97,000 and $398,000 as of December 31, 2008 and 2007, respectively. We own less than 1% of Twin Butte.

In August 2008, we invested $5.0 million in Transoma Medical, Inc. (Transoma), a privately owned corporation, in exchange for approximately 1.5 million shares of Transoma's Series D preferred stock. Our investment represents an ownership interest of approximately 3.5% in Transoma. We account for our investment in Transoma at cost as the fair value of these equity securities is not readily determinable.

5. Fair Value Measurements

Effective January 1, 2008, we adopted the provisions of SFAS 157. SFAS 157 defines fair value, establishes a fair value hierarchy for assets and liabilities measured at fair value and requires expanded disclosures about fair value measurements. Adoption of SFAS 157 did not have any impact on our consolidated financial position or results of operations. The SFAS 157 hierarchy ranks the quality and reliability of inputs, or assumptions, used in the determination of fair value and requires assets and liabilities carried at fair value to be classified and disclosed in one of the following categories based on the lowest level input used that is significant to a particular fair value measurement:

Level 1—Fair value is determined by using unadjusted quoted prices that are available in active markets for identical assets and liabilities.

Level 2—Fair value is determined by using inputs other than Level 1 quoted prices that are directly or indirectly observable. Inputs can include quoted prices for similar assets and liabilities in active markets or quoted prices for identical assets and liabilities in inactive markets. Related inputs can also include those used in valuation or other pricing models such interest rates and yield curves that can be corroborated by observable market data.

Level 3—Fair value is determined by inputs that are unobservable and not corroborated by market data. Use of these inputs involves significant and subjective judgments to be made by a reporting entity--e.g., determining an appropriate adjustment to a discount factor for illiquidity associated with a given security.

We have deferred the application of the provisions of SFAS 157 to our non-financial assets and liabilities in accordance with FASB Staff Position No. FAS 157-2, *Effective Date of FASB Statement No. 157* (FSP FAS 157-2), issued in February 2008. FSP FAS 157-2 defers the effective date of SFAS 157 to fiscal years beginning after November 15, 2008, and interim periods within those fiscal years for non-financial assets and liabilities, except those that are recognized or disclosed at fair value

5. Fair Value Measurements (Continued)

(3) Included in current and non-current marketable investments on the accompanying consolidated balance sheet. The fair value of these securities is derived from pricing models using observable market data, including interest rates, yield curves, recently reported trades of comparable securities, credit spreads and benchmark securities.

The tables below provide a reconciliation of the beginning and ending balances of assets measured at fair value using significant unobservable inputs (Level 3) for the year ended December 31, 2008 (in thousands):

	Auction-rate Securities	Auction-rate Securities Put Option	Total
Balance January 1, 2008	$ —	$ —	$ —
Transfers to (from) Level 3	36,750	—	36,750
Total gains/(losses) realized/unrealized included in earnings(4)	(8,774)	—	(8,774)
Total gains/(losses) included in other comprehensive income	—	—	—
Purchases/issuances/settlements, net	—	7,685	7,685
Balance December 31, 2008	$27,976	$7,685	$35,661

(4) Includes total losses of $2,466 for the year ended December 31, 2008 attributable to the change in unrealized losses relating to trading securities still held at December 31, 2008—(recognized within other income)

6. Investment in Northern Therapeutics, Inc.

We own approximately 68% of the outstanding common stock of Northern Therapeutics, Inc. (Northern). Northern was formed in 2000 to develop a particular form of gene therapy for the treatment of PAH and to distribute Remodulin and our other products in Canada. Although we own a majority of Northern's outstanding common stock, we may appoint only two of the Northern's seven board seats. Substantially all of Northern's key business decisions require unanimous consent from its board including decisions related to personnel selection and compensation and the establishment of operating and capital budgets. As such, the minority owners of Northern have substantive participating rights as described in EITF Issue No. 96-16, *Investors' Accounting for an Investee when the Investor has a Majority of the Voting Interest but the Minority Shareholder or Shareholders Have Certain Approval or Veto Rights*. As a result of these substantive participating rights, we do not control Northern; therefore, consolidation is prohibited. We account for our investment in Northern under the equity method and as such, the related investment balance is adjusted for our cumulative share in Northern's losses. At December 31, 2008, the investment balance is approximately $1.0 million and has been included within other non-current assets on our consolidated balance sheet as of December 31, 2008.

8. Share Tracking Awards Plan (Continued)

In accordance with SFAS 123R, we account for and classify Awards as a liability, as we are required to pay cash to participants upon exercise. Accordingly, we estimate the fair value of the Awards using the Black-Scholes-Merton valuation model and re-measure the fair value of outstanding Awards at each quarterly reporting date until settlement occurs or Awards are otherwise no longer outstanding. The fair value of outstanding Awards is recognized as a current liability on our consolidated balance sheet adjusted for the percentage of the requisite service period that has been rendered prior to the fulfillment of the vesting requirement. As of December 31, 2008, the STAP liability balance was approximately $8.5 million. The change in the fair value of outstanding Awards at each reporting date is recognized as compensation expense on our consolidated statement of operations.

In estimating the fair value of our Awards, we are required to use subjective assumptions that can materially impact the estimation of fair value and related compensation. These assumptions include the expected volatility of our common stock, risk-free interest rate, expected term of Awards, expected forfeiture rate and the expected dividend yield. We also consider the impact of our credit risk when estimating the fair value of Awards due to the STAP's cash settlement provision.

A description of the key inputs used in estimating the fair value of the Awards is provided below:

Expected volatility—Volatility is a measure of the amount the price of our common stock has fluctuated (historical volatility) or is expected to fluctuate (expected volatility) during a period. We use historical volatility based on weekly price observations of our common stock during the period immediately preceding an Award that is equal to the expected term of an Award (up to a maximum of five years). We believe the volatility in the price of our common stock over the preceding five years provides the best representation of future long term volatility.

Risk-free interest rate—The risk-free interest rate is the average interest rate consistent with the yield available on a U.S. Treasury note with a term equal to the expected term of an Award.

Expected term of Awards—An Award's expected term reflects the estimated time period we expect an Award to remain outstanding. We apply the provisions of SAB No. 107, as amended by SAB No. 110, regarding the use of the simplified method in developing an estimate of the expected term. We employ this methodology for estimating the expected term of Awards until such time that more refined estimates based on historical exercise behavior of the Awards can be established

Expected forfeiture rate—The expected forfeiture rate is an estimated percentage of Awards granted that are expected to be forfeited or canceled on an annual basis prior to becoming fully vested. We derive our estimate based on historical forfeiture experience of our stock options for similar classes of employees. We expect forfeiture experience with respect to Awards to be materially comparable to that of our stock options, which contain similar terms and conditions.

Expected dividend yield—We do not pay dividends on our common stock and do not expect to do so in the future. Therefore, the dividend yield is assumed to be zero.

9. Debt

Convertible Senior Notes

On October 30, 2006, we issued at par value $250.0 million of Convertible Senior Notes. In connection with the issuance of the Convertible Senior Notes, we also entered into a call spread option (see Note 11 to these consolidated financial statements). We pay interest on the Convertible Senior Notes in arrears semi-annually on April 15 and October 15 of each year. The Convertible Senior Notes are unsecured, unsubordinated obligations that rank equally with all of our other unsecured and unsubordinated indebtedness. The initial conversion price is $75.2257 per share. Conversion can occur: (i) anytime after July 15, 2011; (ii) during any calendar quarter that follows a calendar quarter in which the price of our common stock exceeded 120% of the initial conversion price for at least 20 days during the 30 consecutive trading day period ending on the last trading day of the quarter (the Conversion Determination); and (iii) during the ten consecutive trading-day period following any five consecutive trading-day period in which the trading price of the Convertible Senior Notes was less than 95% of the closing price of our common stock multiplied by the then current conversion rate; or (iv) upon specified distributions to our shareholders, corporate transactions, or in the event that our common stock ceases to be listed on the NASDAQ Global Select Market (NASDAQ) and is not listed for trading on another U.S. national or regional securities exchange.

Upon conversion, a Convertible Senior Note holder (Note Holder) will receive: (i) cash equal to the lesser of the principal amount of the note or the conversion value (equal to the number of shares underlying the Convertible Senior Notes multiplied by the then current conversion price per share); and (ii) to the extent the conversion value exceeds the principal amount of the note, shares of our common stock. In the event of a change in control, as defined in the indenture under which the Convertible Senior Notes have been issued, Note Holders may require us to purchase all or a portion of their Convertible Senior Notes for 100% of the principal plus accrued and unpaid interest, if any, plus shares of our common stock.

For the quarter ended December 31, 2007, our stock price exceeded the requirements of the Conversion Determination; therefore, our Convertible Senior Notes were eligible for conversion by Note Holders in the subsequent quarter. Consequently, our Convertible Senior Notes have been presented as a current liability on our consolidated balance sheet as of December 31, 2007. For the quarter ending December 31, 2008, our stock price did not meet Conversion Determination requirements; therefore, our Convertible Senior Notes were not eligible for conversion by Note Holders in the subsequent quarter. Accordingly, the Convertible Senior Notes have been presented as a non-current liability on our consolidated balance sheet as of December 31, 2008.

The Convertible Senior Notes fall within the scope of FSP APB 14-1 which will be effective for us beginning January 1, 2009. FSP APB 14-1 must be retrospectively applied and we expect the impact of adopting FSP APB 14-1 will be material as discussed in Note 3 to these consolidated financial statements.

10. Commitments and Contingencies (Continued)

Laboratory, through the recognition of periodic interest charges using the effective interest method. The accretion period began on September 30, 2008 and will run through the end of the Base Term. Related interest charges for the year ended December 31, 2008 were $261,000. In addition, we are depreciating the Phase I Laboratory over its estimated economic useful life. The change in accounting recognition of the Lease did not affect our cash flow requirements under the arrangement.

The Lease and other lease agreements to which we are a party require that we comply with certain covenants throughout the term of these leases. If we are unable to comply with these covenants and cannot reach a satisfactory resolution in the event of a noncompliance, these agreements could terminate. Termination could result in the loss of our liquid collateral, among other consequences. As of December 31, 2008, we pledged approximately $40.7 million of our marketable securities as collateral for the Lease. Related amounts have been included in restricted marketable investments and cash on our consolidated balance sheet.

Operating Leases

We lease primarily facilities space and office equipment under operating lease arrangements that have terms expiring at various dates through 2014. Certain lease arrangements include renewal options and escalation clauses.

Minimum rent commitments under non-cancelable operating leases are as follows (in thousands):

Years ending December 31,	
2009	$2,088
2010	1,814
2011	948
2012	764
2013	587
	$6,201

Total rent expense was approximately $2.5 million, $3.3 million and $2.7 million for the years ended December 31, 2008, 2007 and 2006, respectively.

Construction Commitment

In November 2008, we agreed to the terms of a construction management agreement with the Whiting-Turner Contracting Company (Whiting-Turner) relating to the construction of the Phase II Facility (GMP Contract). Under the terms of the GMP Contract, costs to complete the construction of the Phase II Facility generally cannot exceed $61.3 million (the Guaranteed Maximum Price). Whiting-Turner will be responsible for any cost overruns above the Guaranteed Maximum Price and will share a portion of the savings in the event costs of constructing the Phase II Facility are less than the Guaranteed Maximum Price. The contractor is subject to penalties under the GMP Contract in the event that construction of the Phase II Facility is not completed by November 16, 2009, unless an agreed-upon change order alters the scope of work set forth under the GMP Contract. As of December 31, 2008, the remaining obligation under the GMP Contract was approximately $44.1 million.

11. Stockholders' Equity

Equity Incentive Plan

Our Board of Directors adopted an equity incentive plan in November 1997 (EIP). Subsequently, in April 1999, our Board and shareholders approved an amendment and restatement of the EIP to increase the number of shares available for issuance under the EIP. The EIP, as amended and restated, provides for the issuance of up to 14,939,517 shares of our common stock, of which 7,939,517 have been reserved for issuance to our CEO in accordance with her employment agreement. As of December 31, 2008, there were 6,149,663 shares available for issuance under the EIP. Pursuant to the EIP, we may only grant, beginning in November 2007, nonqualified stock options and other share-based awards to participants. Options granted under the EIP are nontransferable, contain a maximum contractual term of ten years, and typically have vested in one-third increments on each of the first three anniversaries of the grant date. The exercise price of related awards can be no less than the fair market value of our common stock on the date of grant. Historically, we have issued new shares of our common stock upon the exercise of options.

Stock Option Exchange

Pursuant to an Offer to Exchange (the Offer), on December 26, 2008 (Exchange Date), certain outstanding options with exercise prices above $65.00 (Original Options) were cancelled and replaced with options having an exercise price of $61.50 (Replacement Options), the closing price of our common stock on the Exchange Date. Original Options submitted for exchange were replaced on a one-for-one basis with Replacement Options. Additionally, the Replacement Options retain all terms and conditions of the Original Options except for the reduction to the exercise price as described above and the following:

- Original Options submitted for exchange that were vested and exercisable as of the Exchange Date, are subject to a one-year vesting term--i.e., related Replacement Options will be exercisable beginning on the one-year anniversary of the Exchange Date; and
- Replacement Options are nonqualified stock options regardless of whether Original Options submitted for exchange were incentive options.

Under SFAS 123R, the Offer is considered a modification of existing option award terms. As such, total compensation associated with the Replacement Options will consist of the grant date fair value of the Original Options for which the requisite service period is expected to be rendered (or has already been rendered) at the Exchange Date, plus the incremental cost associated with the modification of terms. The incremental compensation expense is measured as the excess of the fair value of the Replacement Options over the fair value of the Original Options re-measured as of the Exchange Date. A total of 1,572,616 Original Options with a weighted average exercise price of $81.06 were exchanged for Replacement Options. Incremental compensation expense associated with the Offer was approximately $9.1 million, of which $9.0 million will be recognized over a weighted average period of 1.4 years.

Employee Options

We estimate the fair value of stock options using the Black-Scholes-Merton valuation model. Option valuation models, including Black-Scholes-Merton, require the input of highly subjective assumptions that can materially impact the estimation of fair value and related compensation expense.

11. Stockholders' Equity (Continued)

A summary of the status and activity of employee stock options is presented below:

	Shares	Weighted-Average Exercise Price	Weighted Average Remaining Contractual Term (Years)	Aggregate Intrinsic Value (in 000s)
Outstanding at January 1, 2008	5,613,749	$57.28		
Granted(1)	1,691,616	63.42		
Exercised	(992,365)	41.29		
Forfeited	(1,028)	62.88		
Canceled(1)	(1,725,281)	79.42		
Outstanding at end of period	4,586,691	$54.75	7.0	$251,624
Options exercisable at end of period	2,344,564	$49.55	5.7	$116,142
Expected to vest at December 31, 2008	2,147,763	$60.18	8.3	$129,252

(1) Includes the impact of the Offer described above.

The weighted average fair value of options granted during the year ended December 31, 2008, 2007 and 2006, was $26.80, $31.44 and $27.27, respectively. The total fair value of shares vested during the years ended December 31, 2008, 2007 and 2006 was approximately $68.8 million, $42.2 million and $20.5 million, respectively.

Total employee stock option expense recognized for the years ended December 31, 2008, 2007 and 2006, is as follows (in thousands):

	Year ended December 31,		
	2008	2007	2006
Cost of service sales	$ 52	$ 42	$ 117
Research and development	10,344	10,969	6,679
Selling, general and administrative	15,158	36,353	14,156
Stock option expense before taxes	25,554	47,364	20,952
Related income tax benefits	(10,222)	(17,927)	(8,278)
Total stock option expense, net of taxes	$ 15,332	$ 29,437	$12,674
Total stock option expense capitalized in inventory	$ 520	$ 213	$ 505

As of December 31, 2008, there was approximately $29.9 million of total unrecognized compensation cost related to unvested employee stock options which is expected to be recognized over a weighted-average period of 1.4 years.

11. Stockholders' Equity (Continued)

(Loss) Earnings per Share

The components of basic and diluted (loss) earnings per share were as follows (in thousands, except per share amounts):

	Years ended December 31,		
	2008	2007	2006
Net (loss) income (numerator)	$(42,789)	$19,859	$73,965
Shares (denominator):			
Basic weighted-average shares outstanding	22,901	21,224	23,010
Effect of dilutive securities:			
Convertible Senior Notes	—	—	—
Stock options(1)	—	1,227	1,128
Diluted weighted-average shares	22,901	22,451	24,138
(Loss) earnings per share			
Basic	$ (1.87)	$ 0.94	$ 3.21
Diluted	$ (1.87)	$ 0.88	$ 3.06
Stock options and warrants excluded from calculation(2)	8,120	4,776	1,588

(1) Calculated using the treasury stock method

(2) Certain stock options and warrants were excluded from the computation of diluted earnings per share because their impact would be antidilutive.

Shareholder Rights Plan

On June 30, 2008, we entered into an Amended and Restated Rights Agreement with The Bank of New York, as Rights Agent (the Plan), which amends and restates our original Rights Agreement, dated December 17, 2000. The Plan, as amended and restated, extends the expiration date of the Preferred Share Purchase Rights (Rights) from December 29, 2010, to June 26, 2018, and increases the purchase price of each Right from $129.50 to $800.00. Each Right entitles holders to purchase one one-thousandth of a share of our Series A Junior Participating Preferred Stock. Rights are exercisable only upon our acquisition by another company, or commencement of a tender offer that would result in ownership of 15 percent or more of the outstanding shares of our voting stock by a person or group (as defined under the Plan) without our prior express written consent. We have not issued any shares of our Series A Preferred Stock.

Call Spread Option

Concurrent with the issuance of the Convertible Senior Notes (see Note 9 in these consolidated financial statements), we purchased call options on our common stock in a private transaction with Deutsche Bank AG London (the Call Option). The Call Option allows us to purchase up to approximately 3.3 million shares of our common stock at $75.2257 per share from Deutsche Bank AG London, equal to the amount of our common stock related to the excess conversion value that we

12. Comprehensive Income (Loss)

Comprehensive (loss) income comprised the following (in thousands):

	Year ended December 31,		
	2008	2007	2006
Net (loss) income	$(42,789)	$19,859	$73,965
Other comprehensive income:			
Foreign currency translation (loss) gain	(5,489)	285	336
Marketable investments—available-for-sale			
Unrealized holding losses, net of tax	(4,702)	(892)	(2,453)
Reclassification adjustment for other-than-temporary impairment realized in income, net of tax (Note 4)	4,511	—	—
Unrealized (loss) on available-for-sale securities, net	(191)	(892)	(2,453)
Unrecognized prior period service cost, net of tax	(414)	(587)	—
Unrecognized actuarial pension (loss) gain, net of tax	(136)	35	—
Comprehensive (loss) income	$(49,019)	$18,700	$71,848

13. Income Taxes

Components of income tax benefit consist of the following (in thousands):

	Year Ended December 31,		
	2008	2007	2006
Current:			
Federal	$ —	$ 634	$ —
State	1,311	103	868
Foreign	391	78	—
Total current	1,702	815	868
Deferred			
Federal	(68,075)	(39,025)	(43,133)
State	(5,311)	(83)	(3,449)
Foreign	(206)	—	—
Total deferred	(73,592)	(39,108)	(46,582)
Other non-current(1)			
Federal	40,406	32,526	10,326
State	1,975	2,491	1,331
Total other	42,381	35,017	11,657
Total income tax benefit	$(29,509)	$ (3,276)	$(34,057)

(1) Relates primarily to share-based compensation.

13. Income Taxes (Continued)

At December 31, 2008, we had no net operating losses available for federal income tax purposes, and approximately $8.9 million in state net operating loss carryforwards. In addition, as of December 31, 2008, we had business tax credit carryforwards of approximately $79.3 million. These carryforwards expire on various dates through 2028. Certain business tax credit carryforwards that were generated at various dates prior to December 2007 may be subject to limitations on their use pursuant to Internal Revenue Code Section 382 (Section 382) as a result of ownership changes as defined by Section 382. However, we do not expect that these business tax credits will expire unused. We are currently reviewing our stock trading history for the year ended December 31, 2007 to ascertain whether any further ownership changes have occurred pursuant to Section 382.

As a result of specific realization requirements of SFAS 123R, certain deferred tax assets at December 31, 2008 and 2007, that relate to tax deductions for the excess of equity compensation over that which was recognized for financial reporting purposes have been excluded from net deferred tax assets as reported above. As a result of the utilization on the net operating losses related to equity compensation, additional paid-in capital increased by $17.1 million.

We have been and may continue to be subject to federal alternative minimum tax and state income taxes, even though we have existing net operating loss and business credit carryforwards.

A reconciliation of the beginning and ending balances of the total amounts of unrecognized tax benefit for the years indicated is as follows (in thousands):

Unrecognized tax benefit at January 1, 2008	$2,989
Gross increases—tax positions in current period	2,893
Gross decreases—tax positions in prior period	—
Gross increases—tax positions in the current period	—
Gross decreases—tax positions in current period	—
Settlements	—
Lapse of statute of limitations	—
Unrecognized tax benefit at December 31, 2008	$5,882

Unrecognized tax benefit at January 1, 2007	$ —
Gross increases—tax positions in prior period	2,989
Gross decreases—tax positions in prior period	—
Gross increases—tax positions in the current period	—
Gross increases—tax positions in the current period	—
Settlements	—
Lapse of statute of limitations	—
Unrecognized tax benefit at December 31, 2007	$2,989

Included in unrecognized tax benefits at December 31, 2008 and 2007, is $1.8 million of tax benefits that, if recognized, would impact the effective tax rate. For the years ended December 31, 2008 and 2007, we did not accrue for or recognize any interest and penalties related to uncertain tax positions.

14. Employee Benefit Plans (Continued)

The following table reconciles the beginning and ending balances of the projected benefit obligation (in thousands):

	Year ended December 31,	
	2008	2007
Projected benefit obligation at beginning of year	$4,899	$2,598
Service cost	2,664	2,449
Interest cost	386	149
Amendments	1,024	—
Actuarial loss (gain)	200	(297)
Projected benefit obligation at end of year	$9,173	$4,899
Fair value of plan assets at end of year	—	—
Unfunded at end of year(1)	$9,173	$4,899

(1) Included within other non-current liabilities on our consolidated balance sheets

The accumulated benefit obligation for the SERP, a measure that does not encompass future increases in participant salaries, was approximately $5.4 million and $3.0 million at December 31, 2008 and 2007.

Over the course of the next five years we do not expect to make benefit payments under the SERP as no participant will reach retirement age during the succeeding five-year period.

The following weighted-average assumptions were used to measure the SERP obligation:

Years Ended December 31,	2008	2007
Discount Rate	6.35%	6.15%
Salary Increases	5.00%	5.00%

The components of net periodic pension cost recognized on our consolidated statement of operations were composed of the following (in thousands):

Years Ended December 31,	2008	2007	2006
Service cost	$2,664	$2,449	$1,521
Interest cost	386	149	31
Prior period service cost amortization	145	59	20
Total	$3,195	$2,657	$1,572

15. License Agreements (Continued)

rights to negotiate a license with us if we license any part of the marketing rights under the agreement to a third party. Additionally, if we grant any third-party license rights to Remodulin, Glaxo would be entitled to a percentage of all related fees that we would receive on such arrangements.

Pfizer Inc.

Pursuant to a December 1996 license agreement, Pfizer Inc. (Pfizer) exclusively licensed to us patents and a patent application for the composition and production of treprostinil. Under the license agreement, as amended in 2002, we pay royalties to Pfizer equal to 4% of annual net sales of Remodulin in excess of $25.0 million. Related royalties are reduced by up to 50% in the event that we pay royalties to a third party in order to market or develop treprostinil. Pfizer is entitled to these royalties for a period of ten years from the date of the first commercial sale of any product containing treprostinil.

Eli Lilly and Company

In November 2008, we entered into the following agreements with Eli Lilly and Company (Lilly): a license agreement, a manufacturing and supply agreement and a stock purchase agreement. These agreements became effective in December 2008 and are described below.

License Agreement. Lilly granted us an exclusive right to develop, market, promote and commercialize tadalafil for the treatment of pulmonary hypertension in the United States and Puerto Rico. In connection with these license rights, we made a one-time, upfront payment to Lilly of $25.0 million. Additionally, we agreed to pay Lilly royalties of 5% of our net sales of tadalafil as a pass through of Lilly's third-party royalty obligations for as long as Lilly is required to make such royalty payments. The term of the license agreement will continue generally until the later of (1) the expiration or lapse of the last to expire claim within a Lilly patent covering commercialization of tadalafil, or (2) expiration of any government conferred exclusivity rights to tadalafil. In addition, at Lilly's discretion the license agreement may be terminated in the event that a separate brand name for tadalafil is not approved by the FDA or we undergo a change in control. If this were to occur, Lilly would refund our $25.0 million payment.

Manufacturing and Supply Agreement. Terms of the manufacturing and supply agreement provide that Lilly will manufacture tadalafil and distribute it via its wholesaler network in the same manner that it distributes its own pharmaceutical products. We agreed to purchase tadalafil from Lilly at a fixed cost, which is subject to adjustment by Lilly from time to time. Under the terms of the manufacturing and supply agreement we made a one-time, upfront payment to Lilly of $125.0 million. This payment is nonrefundable unless the FDA rejects Lilly's application for registration of a separate Lilly brand name for tadalafil or we undergo a change in control. The manufacturing and supply agreement will continue in effect until expiration or termination of the license agreement.

Stock Purchase Agreement. On December 18, 2008, we issued 3,150,837 shares of our common stock from treasury to Lilly in exchange for $150.0 million. The price per share was equal to 90% of the average closing price of our common stock quoted on the NASDAQ Global Select Market during the five trading day period commencing on (and including) November 17, 2008. Upon the completion of the sale of our common stock to Lilly, the license and manufacturing and distribution agreements discussed above became effective.

15. License Agreements (Continued)

Northern Therapeutics, Inc.

In October 2006, we entered into an exclusive license agreement with Northern to obtain the developmental and commercial rights to Northern's cell-based gene transfer technology for the treatment of PAH in the United States. Under the terms of the agreement, we would assume the development activities of this technology upon the successful completion of the current PHACeT Phase I trial being conducted by Northern in Canada. In addition, we will pay Northern certain milestone payments during the PHACeT trial, totaling approximately $1.5 million, if the trial is successful. During the year ended December 31, 2008, we did not incur any expenses related to this agreement. We incurred expenses totaling $150,000 and $500,000 during the years ended December 31, 2007 and 2006, respectively. Upon successful commercial launch of a product using this technology, royalties would be due to Northern at various rates from 5% to 10% depending on the level of sales.

Other

We are party to various other license agreements relating to our key therapeutic platforms. These license agreements require us to make royalty payments based on a percentage of sales of related products (1.0% to 12.0%) and may require other payments upon the achievement of certain milestones.

16. Related Party Transaction

In May 2007, we entered into a technical services agreement with Kurzweil Technologies Inc. (KTI), a company controlled by Raymond Kurzweil, a non-independent, non-executive member of our Board of Directors. Pursuant to this agreement, we agreed to pay KTI consulting fees of up to $12,000 monthly. We also agreed to reimburse KTI on a monthly basis for all necessary, reasonable and direct out of pocket expenses incurred in connection with his services. Under the agreement, we could pay KTI up to a 5% royalty on sales of certain products reasonably attributed to and dependent upon certain technology developed by KTI. We incurred approximately $145,000 and $84,000 in expenses during the years ended December 31, 2008 and 2007, respectively under this agreement. As of December 31, 2008 and 2007, no amounts were owed to KTI.

17. Distribution Agreement

In March 2007, we entered into an exclusive agreement with Mochida Pharmaceutical Co., Ltd. (Mochida) to distribute subcutaneous and intravenous Remodulin in Japan. Mochida is responsible, with our assistance, for obtaining Japanese marketing authorization for Remodulin, including conducting necessary studies. We will supply the drug used in these studies at no charge to Mochida. Commercial activities in Japan are not expected to begin until late 2011. Upon receipt of marketing authorization and pricing approval, Mochida will purchase Remodulin from us at an agreed-upon transfer price. To date, we have received $8.0 million in related payments from Mochida pursuant to the distribution agreement. Future payments required to be made to us under the agreement include the following: $2.0 million upon filing a New Drug Application (NDA) in Japan and $2.0 million upon the receipt of marketing approval in Japan. We recognize revenue on fees received on this arrangement through the filing of the NDA ratably from the period related fees are payable through the expected date of regulatory approval.

19. Segment Information (Continued)

services. The telemedicine segment is managed separately because diagnostic services require different technology and marketing strategies than therapeutic products.

Segment information as of and for the year ended December 31, 2008, is presented below (in thousands):

	Pharmaceutical	Telemedicine	Consolidated Totals
Revenues from external customers	$ 272,012	$ 9,485	$ 281,497
Net income (losses)	(43,459)	670	(42,789)
Interest income	11,025	—	11,025
Interest expense	(16)	—	(16)
Income tax benefit	29,509	—	29,509
Depreciation and amortization	(4,026)	(510)	(4,536)
Equity loss in affiliate	(226)	—	(226)
Investments in equity method investees	1,021	—	1,021
Expenditures for long-lived assets	(122,992)	(1,423)	(124,415)
Goodwill, net	1,287	6,178	7,465
Total assets	853,735	17,584	871,319

Segment information as of and for the year ended December 31, 2007, is presented below (in thousands):

	Pharmaceutical	Telemedicine	Consolidated Totals
Revenues from external customers	$203,218	$ 7,725	$210,943
Net income (losses)	19,816	43	19,859
Interest income	13,595	7	13,602
Interest expense	(2,165)	(10)	(2,175)
Depreciation and amortization	(3,037)	(390)	(3,427)
Equity loss in affiliate	(321)	—	(321)
Investments in equity method investees	1,247	—	1,247
Expenditures for long-lived assets	(37,601)	(1,057)	(38,658)
Goodwill, net	1,287	6,178	7,465
Total assets	555,036	31,982	587,018

20. Quarterly Financial Information (Unaudited)

The following presents summarized quarterly financial information for each of the years ended December 31, 2008 and 2007 (in thousands, except per share amounts):

	Quarter Ended			
	December 31, 2008	September 30, 2008	June 30, 2008	March 31, 2008
Net sales	$ 75,862	$75,032	$68,556	$62,047
Gross profit	67,414	66,732	60,558	54,494
Net (loss) income(1)	(81,146)	12,623	14,331	11,403
(Loss) income per share—basic	$ (3.42)	$ 0.55	$ 0.63	$ 0.51
(Loss) income per share—diluted	$ (3.42)	$ 0.50	$ 0.59	$ 0.47

(1) During the three months ended December 31, 2008, research and development expenses included a charge of $150.0 million relating to a one-time upfront fee paid to Lilly in connection with the acquisition of certain license rights to tadalafil (Note 15).

	Quarter Ended			
	December 31, 2007	September 30, 2007	June 30, 2007	March 31, 2007
Net sales	$59,898	$59,045	$51,831	$40,169
Gross profit	52,714	52,213	45,822	35,773
Net income (loss)(2)	1,986	14,848	5,806	(2,781)
Income (loss) per share—basic	$ 0.09	$ 0.70	$ 0.28	$ (0.13)
Income (loss) per share—diluted	$ 0.08	$ 0.66	$ 0.26	$ (0.13)

(2) During the three months ended December 31, 2007, we recognized approximately $20.3 million in share-based compensation expense related to the year-end stock option grant to our Chief Executive Officer in accordance with her employment agreement.

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

None.

ITEM 9A. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

Our management, with participation of our Chief Executive Officer and Chief Financial Officer, has evaluated the effectiveness of our disclosure controls and procedures, as defined in Rules 13a-15(e) and 15d-15(e) of the Securities Exchange Act of 1934, as of December 31, 2008. Based on that evaluation, our Chief Executive Officer and Chief Financial Officer 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 defined in Rules 13a-15(f) and 15d-15(f) under the Securities Exchange Act of 1934, as amended). Our internal control over financial reporting was designed to provide reasonable assurance to our management and board of directors regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. All internal controls over financial reporting, no matter how well designed, have inherent limitations. As a result of these inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Therefore, even those internal controls determined to be effective can provide only reasonable assurance with respect to reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles.

Our management assessed the effectiveness of our internal control over financial reporting as of December 31, 2008, based on the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in *Internal Control—Integrated Framework*. Management's assessment included an evaluation of the design of our internal control over financial reporting and testing of the operational effectiveness of our internal control over financial reporting. Based on this assessment, our management concluded that, as of December 31, 2008, our internal control over financial reporting was effective.

Ernst & Young LLP, an independent registered public accounting firm, has issued an attestation report on our internal control over financial reporting. The report of Ernst & Young LLP is contained in Item 8 of this Annual Report on Form 10-K.

Attestation of Independent Registered Public Accounting Firm

The attestation report of our independent registered public accounting firm regarding internal control over financial reporting is set forth in Item 8 of this Annual Report on Form 10-K under the caption "Report of Independent Registered Public Accounting Firm" and incorporated herein by reference.

Changes in Internal Control over Financial Reporting

There were no changes in our internal control over financial reporting during the quarter ended December 31, 2008 that have materially affected, or are reasonably likely to materially affect, our internal controls over financial reporting.

ITEM 9B. OTHER INFORMATION

None.

Securities Authorized for Issuance Under Equity Compensation Plans

The following table presents information as of December 31, 2008, regarding our securities authorized for issuance under equity compensation plans:

Plan category	Number of securities to be issued upon exercise of outstanding options (a)	Weighted average exercise price of outstanding options (b)	Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a) (c)
Equity compensation plan approved by security holders	4,378,058	$62.50	6,149,663
Equity compensation plans not approved by security holders	247,170	21.96	N/A
Total	4,625,228	$60.39	6,149,663

We have one equity incentive plan approved by security holders in 1997. In addition, prior to 2005, we granted options to employees and consultants outside of the plan approved by security holders (non-plan options). Information regarding the security holder approved plan and the non-plan options is contained in Note 11 to the consolidated financial statements included elsewhere in this Annual Report on Form 10-K. We do not have any warrants or rights that are outstanding or available for issuance as described in Regulation S-K Item 201(d). Securities issued pursuant to the non-plan awards were made under standard agreements generally consistent with the form contained in Exhibits 10.22 and 10.38.

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

Information concerning related party transactions and director independence required by Item 13 appears under the heading *Certain Relationships and Related Transactions Director Independence and Board Committees* in our 2009 Proxy Statement and is hereby incorporated herein by this reference.

ITEM 14. PRINCIPAL ACCOUNTING FEES AND SERVICES

Information required by this item, concerning the principal accounting fees paid by the Registrant and the Audit Committee's pre-approval policies and procedures, is incorporated by reference to the information under the heading *Independent Auditors* in our 2009 Proxy Statement and is hereby incorporated herein by this reference.

Exhibit No.	Description
4.3	Registration Rights Agreement, dated as of June 27, 2000 by and between the Registrant and Toray Industries, Inc., incorporated by reference to Exhibit 4.7 of the Registrant's Registration Statement on Form S-3 (Registration No. 333-40598).
4.4	Form of Stock Purchase Agreement dated July 13, 2000 incorporated by reference to Exhibit 99.2 of the Registrant's Current Report on Form 8-K filed July 14, 2000.
4.5	First Amended and Restated Rights Agreement, incorporated by reference to Exhibit 4.1 to the Registrant's Current Report on Form 8-K filed on July 3, 2008.
4.6	Indenture, dated October 30, 2006, between Registrant and The Bank of New York, as trustee (including form of 0.50% Convertible Senior Note due October 15, 2011), incorporated by reference to Exhibit 4.1 of Registrant's Current Report on Form 8-K filed October 30, 2006.
4.7	Resale Registration Rights Agreement, dated October 30, 2006, between Registrant and Deutsche Bank Securities Inc., as the initial purchaser, incorporated by reference to Exhibit 4.2 of Registrant's Current Report on Form 8-K filed October 30, 2006.
10.1**	Amended and Restated Equity Incentive Plan, incorporated by reference to Exhibit 10.1 of the Registrant's Registration Statement on Form S-1 (Registration No. 333-76409).
10.2**	Executive Employment Agreement (as amended) dated as of April 2, 1999, between the Registrant and Martine A. Rothblatt, incorporated by reference to Exhibit 10.3 of the Registrant's Registration Statement on Form S-1 (Registration No. 333-76409).
10.3**	Amendment dated December 21, 2000 to the Employment Agreement between the Registrant and Martine A. Rothblatt, incorporated by reference to Exhibit 10.5 of the Registrant's Quarterly Report on Form 10-Q for the fiscal quarter ended March 31, 2002.
10.4**	Employment Agreement dated June 16, 2001 between the Registrant and Paul A. Mahon, incorporated by reference to Exhibit 10.4 of the Registrant's Quarterly Report on Form 10-Q for the fiscal quarter ended March 31, 2002.
10.5*	Exclusive License Agreement dated as of December 3, 1996, between the Registrant and an affiliate of Pharmacia & Upjohn Company, incorporated by reference to Exhibit 10.8 of the Registrant's Registration Statement on Form S-1 (Registration No. 333-76409).
10.6*	Assignment Agreement dated as of January 31, 1997, between the Registrant and affiliates of Glaxo Wellcome Inc., incorporated by reference to Exhibit 10.9 of the Registrant's Registration Statement on Form S-1 (Registration No. 333-76409).
10.7*	Exclusive License Agreement dated as of September 24, 1998, between the Registrant and Toray Industries, Inc., incorporated by reference to Exhibit 10.11 of the Registrant's Registration Statement on Form S-1 (Registration No. 333-76409).
10.8*	Exclusive License Agreement dated as of March 15, 1999, between the Registrant and Toray Industries, Inc., incorporated by reference to Exhibit 10.14 of the Registrant's Registration Statement on Form S-1 (Registration No. 333-76409).
10.9**	Employment Agreement dated November 29, 2000 between the Registrant and Roger Jeffs, incorporated by reference to Exhibit 10.9 of the Registrant's Quarterly Report on Form 10-Q for the fiscal quarter ended March 31, 2002.
10.10	Form of Indemnification Agreement between the Registrant and each of its Directors, incorporated by reference to Exhibit 10.18 of the Registrant's Registration Statement on Form S-1 (Registration No. 333-76409).
10.11	Exclusive License Agreement dated as of June 23, 2000 between the Registrant and Toray Industries, Inc., incorporated by reference to Exhibit 10.1 of the Registrant's Registration Statement on Form S-3 (Registration No. 333-40598).
10.12	Asset Purchase Agreement dated as of December 15, 2000 among the Registrant, UP Subsidiary Corporation, and Cooke Pharma, Inc., incorporated by reference to Exhibit 2.1 of the Registrant's Form 8-K/A dated February 1, 2001.

Exhibit No.	Description
10.28**	Amendment to Employment Agreement between Paul A. Mahon and United Therapeutics Corporation dated June 16, 2001, as previously amended, incorporated by reference to Exhibit 10.4 of the Registrant's Form 8-K filed on December 29, 2004.
10.29**	Form of Employee Stock Option Award Agreement, incorporated by reference to Exhibit 10.1 of the Registrant's Form 8-K filed on December 17, 2004.
10.30**	Form of Non-Employee Stock Option Award Agreement, incorporated by reference to Exhibit 10.2 of the Registrant's Form 8-K filed on December 17, 2004.
10.31	Turner Construction Contract, incorporated by reference to Exhibits 99.1 and 99.2 of Registrant's Current Report on Form 8-K filed March 17, 2005.
10.32**	United Therapeutics Corporation Supplemental Executive Retirement Plan, incorporated by reference to Exhibit 10.1 of Registrant's Current Report on Form 8-K filed May 4, 2006.
10.33	Stock Purchase Agreement, dated as of July 27, 2006, between Registrant and Toray Industries, Inc., incorporated by reference to Exhibit 10.1 of Registrant's Current Report on Form 8-K filed July 27, 2006.
10.34**	Employment Agreement, dated August 2, 2006, between John Ferrari and Registrant, incorporated by reference to Exhibit 10.1 of Registrant's Current Report on Form 8-K filed August 4, 2006.
10.35**	Amendment, dated July 31, 2006, to amended Employment Agreement, dated November 29, 2000, between Roger Jeffs, Ph.D. and Registrant, incorporated by reference to Exhibit 10.2 of Registrant's Current Report on Form 8-K filed August 4, 2006.
10.36**	Amendment, dated July 31, 2006, to amended Employment Agreement, dated June 16, 2001, between Paul A. Mahon and Registrant, incorporated by reference to Exhibit 10.3 of Registrant's Current Report on Form 8-K filed August 4, 2006.
10.37	First Amendment to Certain Operative Agreements, dated May 16, 2006, between Wachovia Development Corporation and Registrant, incorporated by reference to Exhibit 10.1 of Registrant's Quarterly Report on Form 10-Q for the fiscal quarter ended June 30, 2006.
10.38	Confirmation, dated October 24, 2006, between Deutsche Bank AG London and Registrant, incorporated by reference to Exhibit 10.1 of Registrant's Current Report on Form 8-K filed October 30, 2006.
10.39	Confirmation, dated October 24, 2006, between Deutsche Bank AG London and Registrant, incorporated by reference to Exhibit 10.2 of Registrant's Current Report on Form 8-K filed October 30, 2006.
10.40**	Amendment, dated December 28, 2006, to Employment Agreement, dated August 2, 2006, between John Ferrari and Registrant, incorporated by reference to Exhibit 10.1 of Registrant's Current Report on Form 8-K filed on December 29, 2006.
10.41	United Therapeutics Corporation Supplemental Executive Retirement Plan Rabbi Trust Document entered into December 28, 2007, by and between the Registrant and Wilmington Trust Company, as trustee, incorporated by reference to Exhibit 10.1 of Registrant's Current Report on Form 8-K filed on December 28, 2007.
10.42	Standard form of agreement between the Registrant and DPR Construction, Inc., dated March 9, 2007, as amended by Amendment No. 1, dated April 19, 2007, incorporated by reference to Exhibit 10.1 of Registrant's Quarterly Report on Form 10-Q for the fiscal quarter ended March 31, 2007.
10.43****	Distribution Agreement dated March 20, 2000, between Registrant and Accredo Therapeutics, Inc., as amended and incorporated by reference to Exhibit 10.45 of Registrants Annual Report Form 10-K for the fiscal year ended December 31, 2007.
10.44****	Agreement between the Registrant and the Whiting-Turner Contracting Company, dated November 5, 2007, as amended by Amendment No. 1, dated November 21, 2008.

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, thereto duly authorized.

UNITED THERAPEUTICS CORPORATION

By: /s/ MARTINE A. ROTHBLATT
Martine A. Rothblatt, Ph.D.
Chairman of the Board and Chief Executive Officer

February 26, 2009

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 and on the dates indicated.

Signatures	Title	Date
/s/ MARTINE A. ROTHBLATT Martine A. Rothblatt	Chairman of the Board and Chief Executive Officer (Principal Executive Officer)	February 26, 2008
/s/ JOHN M. FERRARI John M. Ferrari	Chief Financial Officer and Treasurer (Principal Financial Officer and Principal Accounting Officer)	February 26, 2008
/s/ ROGER A. JEFFS Roger A. Jeffs	President, Chief Operating Officer and Director	February 26, 2008
/s/ CHRISTOPHER CAUSEY Christopher Causey	Director	February 26, 2008
/s/ RAYMOND DWEK Raymond Dwek	Director	February 26, 2008
/s/ R. PAUL GRAY R. Paul Gray	Director	February 26, 2008
/s/ RAYMOND KURZWEIL Raymond Kurzweil	Director	February 26, 2008
/s/ CHRISTOPHER PATUSKY Christopher Patusky	Director	February 26, 2008
/s/ LOUIS W. SULLIVAN Louis W. Sullivan	Director	February 26, 2008